

**Investigating the Role of Organizational Silence in the
Context of disruptive Business Model Transformation
– A mixed Methods Approach**

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Table of Abbreviations

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|------|-------------------------------|
| COR | Conservation resources theory |
| DCM | Demand-control model |
| ERI | Effort-reward imbalance model |
| JCM | Job characteristic model |
| JCS | Job crafting scale |
| JD-R | Job demands-resources model |
| PBC | Perceived behavioral control |
| PSC | Psychological safety climate |
| SEM | Structural equation modeling |
| TRA | Theory of reasoned action |
| TPB | Theory of planned behavior |

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Introduction

“Silence is talk too”
(Nigerian proverb)

(a) Problem Statement and Relevance of the Topic

Today’s world can best be described by the acronym VUCA: Volatile, Uncertain, Complex, and Ambiguous. The COVID-19 pandemic just demonstrated once more how unpredictable the nature and existence of organizations can be in this fast-changing world – not only in the future, but also in the short- and mid-term. Many other reasons, such as the advancing digitalization, the emergence of disruptive technologies, the radically changing customer requirements, or the growing competitive work environment force each and every organization to rapidly re-invent themselves and to re-think the relevance of their current business model. But change is not a one-time thing anymore. Change is induced by a wide range of different causes and has become the “new normal” for organizations.

Therefore, in this dynamic organizational environment, companies rely more and more on their employees’ creativity and need to motivate them to cultivate and drive new ideas and proposals for the development of innovative products, disruptive business models or customer-centered services. At the same time, it is also imperative for organizations to encourage their employees to communicate issues, problems or concerns that might decrease the organizational performance. Particularly in times of extensive change processes (e.g. induced by the implementation of business model innovation), companies demand a great deal of performance, commitment, and collaborative behavior from their employees. However, employees might decide – driven by diverse reasons and circumstances – to rather withhold their beneficial ideas or relevant concerns, which impedes the enhancement of organizational efficiency or hinders the necessary development of new and improved processes or results.

In the year of 2000, Morrison and Milliken (2000) argued within their groundbreaking publication that powerful forces (e.g. organizational structures, moral and legal norms, policies, and practices) exist in many organizations and may cause a

“widespread withholding of information about potential problems or issues by employees. We refer to this collective-level phenomenon as organizational silence” (Morrison & Milliken, 2000, p. 706).

In addition to the scientific achievements of Morrison and Milliken (2000) with regards to organizational silence, Pinder and Harlos (2001) shed a year later more light on the phenomenon of silence at the individual level and defined the multi-dimensional construct of employee silence

“as the withholding of any form of genuine expression about the individual’s behavioral, cognitive and/or affective evaluations of his or her organizational circumstances to persons who are perceived to be capable of effecting change or redress (Pinder & Harlos, 2001, p. 334).

Over many decades, and until these two game-changing scientific contributions, silence behavior was mainly defined as the absence or opposite of voice behavior. However, many examples from inside and outside of the business context have shown the relevance of silence as a separate construct and also underlined its tremendous negative effects in certain situations. Indeed, empirical studies have revealed that individuals often remain silent when facing concerns or issues not because they have nothing to say but because they are afraid. In one study, only 29% of 845 line managers from different organizations stated that their organization is supporting employees to communicate their ideas and opinions openly (Moskal, 1991). In another one, the findings of interviews conducted with 260 employees from 22 companies revealed that more than 70% reported to be afraid of speaking-up about work-related problems or concerns (Ryan & Oestreich, 1991). More recent examples also underline the consequences for an organization in which silence prevails. The ongoing diesel scandal surrounding the use of inadmissible

software in diesel engines led the Volkswagen company to recognize provisions of more than 32 billion euros. In addition, the scandal strongly affected the reputation of the company. Investigations conducted so far have shown that certain members of the organization did have information about the usage of the inadmissible software, but chose to remain silent. Considering the magnitude and the high number of employees from different organizational levels (top-management, engineers) involved in this scandal, the toxicity, contagiousness, and destructiveness of organizational silence permeating an entire organization becomes painfully obvious.

Beyond organizational consequences, deliberate silence can unfortunately/dramatically lead to irreversible and deadly consequences as well. On January 8th, 1989, a British Midland Boeing 737 crashed in England on its way from London to Belfast, causing 47 dead and 74 seriously injured people. Although the left engine of the airplane caught fire, the pilots tragically thought that the fire was caused by the right-winged engine and therefore turned it off. In the course of the following investigation, it turned out that passengers as well as the cabin crew were wondering why the pilots had turned off the wrong engine. Unfortunately, this observation and relevant piece of information was not communicated to the pilots. The surviving purser shared that the cabin crew “did not want to undermine the pilots’ authority” (Air Accident Investigation [AAIB], 1990; Bienefeld & Grote, 2014). The list of similar cases – with tragic consequences – can be extended at will (e.g. Crash of the Asiana-Airline-Flight 214 (2013); surgeon incident at Queensland Hospital (2005); NASA Columbia Space Shuttle (2003)). All these incidents – within or outside of the business – displayed one similarity: in situations in which communication was necessary, silence was predominant.

Thankfully, although failures to express concerns or to convey important information are quite common in organizations, most of them do not determine tomorrow’s headline. However, remaining silent about minor and ostensibly harmless issues and topics can also lead to serious consequences for the entire organization and its employees. Studies have revealed that withholding of information and con-

cerns are linked to an increase of clinical depression and can also affect employees psychologically, as it can generate feelings of humiliation, anger, stress, resentment (Cortina & Magley, 2003; Knoll & Dick, 2013; Perlow & Williams, 2003). Furthermore, silence can also lead to a reduction of job performance and job satisfaction (Nemeth, 1997) and also undermine creativity and productivity.

In addition to the undeniable examples outlined above, van Dyne et al. (2003) provided clear evidence that silence behavior and voice behavior are based on different underlying motives and therefore are not polar opposites of one behavioral construct since in many cases individuals would have had something of relevance to communicate (e.g. cabin crew).

Surprisingly and despite the obvious and clear relevance of the topic,

“Research on silence within organizations is more recent and more sparse” (Morrison & Milliken, 2003, p. 1354).

Even 10 years later and after the publications of essential works in the domain of organizational and employee silence, further calls for more substantial research to fill the research gaps continue to be made. It is argued that:

“Despite the burgeoning interest in employee silence, there are still significant gaps in our understanding of (a) the antecedents of employee silence in organizations and (b) the implications of engaging in silence of employees” (Whiteside & Barclay, 2013, p. 251).

In a same vein, Knoll and Dick (2013, p. 349) stated that both phenomena have not been given much research attention so far. Brinsfield (2013) also stressed the fact that:

“There have been numerous calls for quantitative research to test and refine these prior conceptual and qualitative effort” (Brinsfield, 2013, p. 672).

Many of those calls have remained unheard and the current state of literature in the research field of silence clearly emphasizes the necessity for more (empirical) research investigations.

(b) Goal Setting and Structure of the Dissertation

Taking on these calls for more research, the overall purpose of this thesis is to empirically examine the role and relevance of organizational silence in the context of disruptive business model transformation through a mixed methods approach. In doing so, the present thesis wants to contribute to the existing but still limited research body on silence and partially voice behavior in the organizational context.

The systematic literature review (chapter I) aims at providing an overview of the current state of research in this scientific field. In this context, a fundamental understanding of central concepts (e.g. silence behavior, voice behavior) will also be developed and ensured. In addition, the literature review conducted within this thesis contributes to research by providing a chronologically-based overview of silence and voice constructs, with a clear focus on research efforts of the last 20 years – but also highlighting the roots of voice and silence behavior starting with Hirschman (1970). Based on the systematic literature review, potential gaps in research and the research deficit will be emphasized.

Next, chapter II will outline two preliminary qualitative studies that were conducted to ensure a more advanced understanding of the concept of silence as well as to identify and validate potentially relevant antecedents and effects of silence as a basis for the quantitative investigation of this thesis. Within both studies, interviews with employees and supervisors of different organizational contexts (bank, industry, hospital) were conducted. The results underline the inherent complexity and multidimensionality but also the high relevance and existence of organizational and employee silence within diverse organizations.

Following the literature review (chapter I) and the qualitative study (chapter II), chapter III will outline two prominent and widely tested theories in research that will be applied within this present study context: the Job Demands-Resources (JD-R) model and the Theory of Planned Behavior (TPB). First, each theory will be explained separately. In a second step, the theoretical lenses of both theories will be combined. The combination of both theories aims at creating high added-value in terms of advancing new and existing insights, empirically deriving and examining novel hypotheses, and subsequently testing the derived hypotheses (chapter IV). The combination process of the JD-R model and TPB will be performed in accordance to the taxonomy provided by Okhuysen and Bonardi (2011).

Consequently, the deduction of hypotheses and the quantitative empirical investigation (chapter IV) are based on intensive factual logical considerations (literature review – chapter I), the achievements of both qualitative pre-studies (chapter II) and on the development of a new theoretical framework (chapter III). Both theoretical models will be integrated into a structure equation model (SEM), which represents the overall quantitative research model. The examination of the theoretically hypothesized relationships will be performed and presented in chapter IV.

The overall results of this thesis will be critically discussed within chapter V. This chapter also aims at recapitulating the findings of the entire thesis, as well as outlining the contribution of this work with reference to previous research efforts in the area of organizational and employee silence. In addition, limitations of this work as well as implications for practice and theory will be derived.

I. Organizational and Employee Silence – Systematic Literature Review of Current State of Research

This chapter sets an essential stage for the entire thesis and aims at systematically reviewing the current state of literature in the area of organizational and employee silence. The analysis of the scientific efforts achieved over the past decades in that field helps understanding this growing research body, identifying relevant research gaps, and reifying the overall object of this thesis. The primary focus of this work lies on the phenomena of organizational and employee silence. Fully understanding both concepts also requires tracing back their origins in the field of voice, which is a longer studied phenomenon and is still a vivid and significant research stream. Research has shown that silence is way more complex in its nature than just simply the absence of voice, but both concepts – voice and silence – are very closely linked. Therefore, voice literature contributes to a deeper understanding of the silence phenomenon. Nevertheless, this review addresses mainly the concept of silence, but will partially take the concept of voice in the respective chapters into consideration.

Chapter I.1 outlines briefly both concepts of voice and silence in organizations, which includes definitions and their conceptualization. Based on that, a critical comparison of both concepts will be conducted. The chapter closes with a short overview of previous research efforts. The subsequent chapter (I.2) presents the systematic literature review methodology applied to ensure a well-structured and reliable procedure of data collection, sampling process, data evaluation and coding process. This approach allows the deduction of a historical overview of silence research in chapter I.3, which is structured in four major research waves. The main chapter closes with an interim conclusion (I.4).

I.1 Phenomenon of Voice and Silence in Organizations

Before tracing back the development of voice and silence in organizations by reviewing their conceptual development and application in research, a clear defini-

tion of both concepts is required. On one side, the silence phenomenon can be considered as a rather young research stream with a rapidly growing research body that is not very comprehensive yet. On the other side, voice has a rich history in the organizational science and has been studied not just in the fields of organizational behavior and industrial-organizational psychology but also in organizational management, communication, or leadership. Surprisingly, although silence emanated from the voice literature, it faced difficulties in establishing itself as a distinct branch of research. Indeed, for a long time and, coming from voice research, silence was simply defined as the absence and opposite of voice. It took more than 30 years from Hirschman (1970) and his prominent work “*Exit, Voice, and Loyalty*” until a fundamental advance was achieved by Morrison and Milliken (2000) introducing organizational silence as a *powerful collective and top-down organizational level phenomenon*. Consequently, a now well-established research stream with growing popularity was initialized. Shortly after, Pinder and Harlos (2001) and Milliken et al. (2003) introduced furthermore the concept of employee silence.

Importantly, the focus of silence radically differs from research on employee voice and the concept of *not speaking up* (Morrison & Milliken, 2000, pp. 707–708). First, silence stresses the collective- and individual-level dynamics and not solely the individual’s decision. Secondly, reasons that motivate individuals to speak up differ from the ones motivating employees to remain silent. Lastly, voice focuses on individual-level antecedents, whereas silence takes also factors outside of the individual into account – especially organizational silence. Proposing a clear differentiation of voice and silence by comparing both concepts, and to highlight their conceptual development is key for the subsequent approach of this thesis.

1.1.1 Definitions and Conceptualizations

The present chapter discusses the phenomenon of voice and silence. This also includes the conceptual development process from a historical perspective, especially with focus on empirical work. Moreover, the approach allows to distinguish

both concepts and to provide a clear construct clarification for the following chapters.

(a) Phenomenon of Voice in Organizations

Voice behavior, defined as speaking out and challenging the organization's status quo, is considered an extra-role behavior. Therefore it goes beyond normal role expectations, job requirements in organizations and role expectations (van Dyne et al., 1995, p. 219). This particular type of extra-role behavior is intended to benefit the organization (LePine & van Dyne, 1998). Compared to other affiliate behaviors such as organizational citizenship behavior (e.g. supporting) (Organ, 1988) or contextual performance (e.g. volunteering to carry out task activities that are not part of the job) (Motowidlo & van Scotter, 1994), voice behavior has received little attention. However, it is undisputed that voice (on the micro- and meso-level) as change-oriented behavior is crucial for the organization's effectiveness (Katz & Kahn, 1978), its innovativeness and continuous improvement (Howard, 1995).

The definition of voice can be consolidated by the two-dimensional typology and nomological network stated by van Dyne et al. (1995). This typology helps to distinguish between different forms of extra-role behavior and contrasts on one dimension *promotive and prohibitive behavior* (e.g. Organizational or prosocial citizenship behavior) and on the other dimension *affiliate and challenging behavior* (e.g. whistle-blowing or principled organizational dissent) (van Dyne et al., 1995, p. 229). Following van Dyne and LePine (1998, p. 109) voice behavior can be categorized as a nonrequired behavior emphasizing expression of constructive challenge that also intends to improve than rather just to criticize the status quo. Consequently, voice can be assigned to the promotive-challenging quadrant of the typology proposed by van Dyne et al. (1995). In this context, voice is also distinct from affiliate behavior, prohibitive behaviors such as whistle-blowing (Miceli & Near, 1992), principled organization dissent (Graham, 1986), complaining (Kowalski, 1996) or the normal role or in-role behavior (LePine & van Dyne,

1998, p. 854). As a practical illustration, making an innovative proposal to improve or change standard procedures, even if such a proposal would upset others in the team or organization, would be a good example of such a behavior. In addition, empirical studies also support the differentiation of voice from other extra-role behaviors. Using a 6-item measure of voice behavior with construct validity support, van Dyne and LePine (1998) showed that supervisors, peers, and employees (n = 597) differentiated in-role from extra-role behavior. More interestingly, results also showed that participants differentiated two-related forms of promotive extra-role behavior: helping and voice. The results proposed were cross-validated (over time and participants) by a multigroup confirmatory factor analysis, which gave stability to this three-factor (in-role, helping, voice behavior) measurement model. In addition, employees who raised their voice at time one achieved higher performance rating at time two, which was recognized and rewarded by the supervisors (LePine & van Dyne, 1998, p. 854).

With regards to voice and silence behavior, van Dyne et al. (2003) developed a conceptual framework since both types of communication (voice and silence) are best examined as separate, multidimensional constructs. Until this point, research on voice had not been focused on voice motives or the reaction of observers to the different types of voice for a long time. Challenging the simplistic notions of employee voice and focusing especially on purposeful forms of voice and silence, van Dyne et al. (2003, p. 1361) defined six different behaviors of voice and silence based on the general nature of behavior (passive versus proactive), the primary employee motive (resignation, fear, cooperation) and the specific type of behavior (voice versus silence). Within this conceptual framework development, they focused especially on purposeful forms of voice and silence and centered the individual's motivation of withholding versus expressing ideas, information, and opinions about work-related improvements. Therefore, it reflected the conscious and deliberate decision of an actor (van Dyne et al., 2003, p. 1361). As voice behavior itself is very complex, the framework proposed is based on three central employee

motives (disengaged, self-protective, other-oriented behavior), taking also into account that voice and silence behavior can be based on different motives and often presents a complex compound of motives. Referring to this thesis and the concept of silence, three different voice behaviors are defined according to van Dyne et al. (2003, p. 1362):

- a) *acquiescent voice* – passive behavior and driven by resignation (disengaged),
- b) *defensive voice* – proactive behavior and driven by fear (self-protective),
- c) *prosocial voice* – proactive behavior and driven by cooperation (other-oriented).

(b) Phenomenon of Silence in Organizations

Within this sub-chapter the two main types of silence – organizational silence and employee silence – will be shortly introduced and defined. Both concepts will be outlined more in detail in chapter I.3 (chronical waves).

As stated in the previous chapter, voice and speaking up behavior has been researched from multiple angles. Its former simplistic notion that expressing and withholding behaviors are just polar opposites was heavily challenged. In similar regard, one major conceptualization of silence was published by the seminal work of Morrison and Milliken (2000). Both researchers introduced the term of *organizational silence* stressing the fact that silence behavior has a meaning and implications beyond the pure absence of voice, which until that point had not been generally recognized within the organizational research. Hence, the fundamental work of Morrison and Milliken (2000) can be considered as the breakthrough of the emancipation and establishment of silence in organizational science – 30 years after Hirschman (1970) stressed this type of behavior in his work *Exit, Voice, and Loyalty*. Morrison and Milliken (2000) coined the concept of organizational silence as a collective-level phenomenon. Indeed, there are powerful organizational forces that cause widespread withholding of information, opinions, or concerns by

employees about potential work-related problems or issues. Morrison and Milliken (2000, p. 708) argued that individuals' motives associated with speaking up are quite different from motives or forces that lead to silence, which is also in alignment with the argumentation of van Dyne et al. (2003). Morrison and Milliken (2000, pp. 707–708) highlighted several important characteristics that differentiate their conceptualization of organizational silence from former attempts.

First, compared to research predominantly focusing on the individual-level causes and effects, such as the individual's decision on whether to speak up or not (e.g. employee voice, issue selling, whistle blowing), organizational silence addresses the collective-level dynamics, such as silence norms as organizational-wide forces. Secondly, Morrison and Milliken (2000, p. 708) focused on the question, why such silence norms exist in organizations in the first place, compared to prevailing work that focused on explaining why employees intend to break the norms of silence within their organization. In that regard, certain conditions in organizations (e.g. norms, structures, and certain practices) contribute to the development of a *climate of silence* which in turn leads to organizational silence as a collective-level phenomenon. According to Morrison and Milliken (2000, p. 714), the manifestation of this climate is linked to three shared beliefs:

- 1) speaking up about problems, issues, or concerns is dangerous as they believe they could suffer from retaliation if doing so,
- (2) speaking up about problems, issues, or concerns is risky and not worth the effort, and
- (3) managers fear negative feedback and often hold implicit (negative) beliefs about their subordinates.

Based on that, Morrison and Milliken (2000, p. 709) developed a complex and comprehensive set of dynamics giving the rise of organizational silence, which will be outlined more in detail in chapter I.3.

Build upon the impulses drawn from the concept of organizational silence by Morrison and Milliken (2000), just one year later, Pinder and Harlos (2001) introduced the related concept of employee silence. To that date, this concept was widely neglected, even though it is very pervasive in organizations (Pinder & Harlos, 2001, p. 331). There are many reasons for its neglect, but mainly the assumption that employee silence as a unitary concept can be compared with inactive endorsement. Proving contrast, Pinder and Harlos (2001, p. 334) recognized employee silence as a multifaceted concept and active process that can be defined

“as the withholding of any form of genuine expression about the individual’s behavioral. Cognitive and/or affective evaluations of his or her organizational circumstances to persons who are perceived to be capable of effecting change or redress” (Pinder & Harlos, 2001, p. 334).

This definition also implies that any communication that (1) does not aim at fundamentally changing the circumstances and status quo given, or (2) that is not directed to someone that is capable of changing these circumstances cannot be defined as an attempt to break silence (Pinder & Harlos, 2001, p. 334).

To summarize, compared to organizational silence which is defined as a collective-organizational-level phenomenon, employee silence focuses mainly on analyzing the individual-level behavior (Pinder & Harlos, 2001). It is also important to mention that silence can generally occur at the individual (micro), team (meso) and organizational (macro) level. As an example, work teams (meso-level) defined as a group of individuals (micro-level) can also make the decision to stay silent about problems or issues on the organizational level (macro-level). This example addresses the contagious factor of silence. Hence, silence may start with one person, but can affect other employees or colleagues and incite them to show the same behavior of withholding relevant information or their opinion. Consequently, employee silence can grow from one individual through an entire team to an organizational wide phenomenon. Hence, it is not surprising, that at the early stage of the silence construct development, organizational silence and employee silence have

been not differentiated in literature and were both used to refer more or less to the same phenomenon. Based on research investigating antecedents and effects of both phenomena as well as the operationalization of their multidimensional sub-constructs, the naming convention of both constructs were finally reconciled.

Based on analyzing drivers and organizational causes of employee silence such as culture of injustice, ambiguous hierarchies of authority or authoritarian management styles and poor communication, Pinder and Harlos (2001) have firstly derived two central forms of employee silent behavior, namely: (1) *employee quiescence* and (2) *employee acquiescence*. Both types of employee silence were developed with regards to the pivotal variations of individual's silences in unjust work settings and along eight dimensions: voluntariness, consciousness, acceptance, stress level, awareness of alternatives, propensity of voice, propensity to exit, and dominant emotions (Pinder & Harlos, 2001, p. 348).

Quiescent and acquiescent silence

Employee quiescence represents deliberate omission of not speaking up and is an uncomfortable, aversive and conscious state that can be changed through oneself or with the support of others (e.g. through relevant opinions and information). It also connotes with suffering in silence while at the same time having alternatives to change the status quo but being yet unwilling to explore them (Pinder & Harlos, 2001, pp. 348–349). However, employees showing this quiescent silent behavior are generally willing to break the silence to change the status quo that causes and induces silence. The main drivers for this behavior are perceived consequences of speaking up (Pinder & Harlos, 2001, p. 348). Compared to quiescent silence, *acquiescent silence* is a much deeper state of silence and refers to a deeply felt acceptance of organizational circumstances and a limited awareness of alternatives existing that would help solving prevailing issues (Pinder & Harlos, 2001, pp. 349–350). In order to break this type of silence, more assistance and provocation is required as its motivational capacity is way stronger than for quiescent si-

lence. On the other hand, as quiescent silence is characterized by high cognitive dissonance and fear, acquiescence is fueled by indifference and hopelessness. Consequently, it requires more energy and effort to motivate people into action such as speaking out or raising their complains (Pinder & Harlos, 2001, p. 349).

At this point, it should be mentioned that the presentation of further types of employee silence within this chapter are referred to the constructs that have been used in the research work by Knoll and Dick (2013) to conceptualize and to measure employee silence. As multiple different types of employee silence – mainly addressing the same behavior but named differently – were introduced over the past decade, a limitation to the definitions provided by Knoll and Dick (2013) and based on the research of van Dyne et al. (2003), Greenberg et al. (2007) and Brinsfield et al. (2009) will be adopted.

Prosocial and opportunistic silence

Building on the work of Pinder and Harlos (2001), two further types of employee silence have been developed: (3) *prosocial silence*, and (4) *opportunistic silence*. The definition of prosocial silence incorporates the suggestion of van Dyne et al. (2003) to extend the conceptualization of employee silence of Pinder and Harlos (2001) by including prosocial motives. Hence prosocial silence draws on research of ethics and communications, emphasizing circumstances where silence is valuable and appropriate to maintain social capital. Prosocial silence is defined as

“withholding work-related ideas, information, or opinions with the goal of benefiting other people or the organization – based on altruism or cooperative motives” (van Dyne et al., 2003, p. 1368).

On the other hand, in certain cases employees may also withhold information to achieve advantages for themselves, which refers to opportunistic silence (Knoll & Dick, 2013, p. 351). Drawing on the concept of opportunism by Baumol (1986) as *self-interest seeking with guile* and on the concept of *deviant silence* (Brinsfield et

al., 2009; Greenberg et al., 2007), opportunistic silence is defined in a more subtle manner as

“withholding of or provision of incomplete or distorted information, with the purpose to mislead, disguise, or confuse”, and

“as strategically withholding work-related ideas, information, or opinions with the goal of achieving an advantage for oneself while accepting harm of others” (Knoll & Dick, 2013, p. 351).

The concept of opportunistic silence by this definition is rather new to the research on silence in organizations, but has a rich history in the scientific field of counterproductive work behavior (Gruys & Sackett, 2003; Skarlicki & Folger, 1997). The definition of opportunistic silence provided in this research (Knoll & Dick, 2013, p. 351) is built on the concept of opportunism by Baumol (1986) but goes beyond the idea of the concept of deviant silence (Brinsfield et al., 2009; Greenberg et al., 2007), which mainly focuses on remaining silent in order to harm the organization or co-workers. However, opportunistic silence might be also useful as a strategy to not lose power and status, or just to avoid additional workload and pursuing its own strategy (Connelly et al., 2012; Garfield, 2006).

Finally, empirical research over the last two decades have shown that employee silence is a complex and multidimensional concept that has proven to have tremendous negative effects on the individual level, such as feelings of fear, depression, anger, attitudes of low self-esteem or even suicidal thoughts (O'Hara & Branswell, 1998), but also on the organizational level, such as decrease in performance, innovativeness, or competitive advancement (Cortina & Magley, 2003; Knoll & Dick, 2013; Nemeth, 1997; Perlow & Williams, 2003).

1.1.2 Voice Behavior versus Silence Behavior

Compared to silence, the phenomenon of voice has received over the past decades far more academic attention. In the context of the predominantly separate examination of both constructs, no clear distinction between voice and silence was made. However, particularly at the time of the publication of Morrison and Milliken (2000), the foundation for an increased differentiation and clear independent investigation of both concepts and their inherent logic, antecedents and effects was given. Since then, research within the organizational science dealing with both behavioral types has shown that a clear distinction between voice and silence is crucial as voice and silence reveal distinct conceptualizations and innate their own antecedents and effects. As outlined before, voice and silence have appeared to be polar opposites in organizational science for quite some time. For a long time, superficial comparison approaches of both concepts suggested that being silent by withholding relevant information or ideas was just the opposite of communicating them through voice. It took quite a long path until novel research attempts showed that employee silence as intentionally withholding relevant ideas, information, and opinions to improve the organization's performance (Morrison & Milliken, 2000; Pinder & Harlos, 2001; R. L. Scott, 1993) should not be confounded with the antithesis of voice (LePine & van Dyne, 1998; Pinder & Harlos, 2001; Withey & Cooper, 1989, 1989; Zhou & George, 2001). Consequently, employee silence should be understood as more than just the merely absence or lack of voice (Brinsfield et al., 2009; Morrison, 2014) and rather be considered as a distinct behavior that is caused by a range of motives and addresses several outcomes (Brinsfield, 2013; Knoll & Dick, 2013; Knoll & Redman, 2016; van Dyne et al., 2003). Both behaviors – engaging in voice or remaining silent – are affecting the organizational or group effectiveness (e.g. performance, turnover) as well as outcomes for employees (e.g. performance evaluation, career outcomes, impressions) since their antecedents and effects work in different ways and are driven by distinct motives (Morrison, 2014, pp. 185–186).

Therefore, the following sub-chapter aims at examining differences between both multidimensional concepts of voice and silence based on an adopted conceptual framework provided by van Dyne et al. (2003). Before doing so, it must be stated that the starting condition for both behaviors (voice and silence) is that employees have something potentially to say and hence are aware of a problem or opportunity, or have an idea or concern that might be relevant to convey within the organization (Morrison, 2014; Pinder & Harlos, 2001). According to Detert and Edmondson (2011) a latent voice opportunity/episode is prevailing as the employee can choose to remain silent or to speak up, due to the motivation and ability given – but the motivation itself is a prerequisite (Morrison, 2014, p. 179). Hence, the *motivation* of an individual to withhold or to communicate ideas, information or opinions is used in prominent literature (Knoll et al., 2018; Knoll & Redman, 2016; Morrison, 2014; Pinder & Harlos, 2001) as a key differentiating factor. Instead of concentrating on the question whether individuals speak up or remain silent as a differentiating approach, research has focused on the *motives* that trigger individuals to withhold or express their ideas or concern, assuming that certain motivators might increase the particular behavior, or even both (Knoll & Redman, 2016, p. 832). Based on that, motivation is conceptualized by four central motives that are drawn from literature (van Dyne et al., 2003, p. 1360):

- (1) disengaged behavior based on resignation,
- (2) self-protective behavior based on fear,
- (3) other-oriented behavior based on cooperation, and
- (4) opportunistic behavior based on advantage seeking/achievement.

All four motives promoted are associated to the four different types of silence (acquiescent, quiescent/defensive, prosocial and opportunistic silence) and the three types of voice behavior (acquiescent, quiescent/defensive, prosocial voice) (Knoll & Dick, 2013; van Dyne et al., 2003). Based on the general nature of the behavior (passive versus proactive) and the primary motive of the employee, seven different

specific types of behavior can be differentiated. Figure I-1 shows the different types of voice and silence behaviors as well as their characteristics. Following this conceptual representation, silence behavior can be differentiated by its rather passive or proactive motivation, whereas all four forms of silence (acquiescent, quiescent, prosocial, and opportunistic) are built on the premises that withholding of relevant ideas, information, and opinions is carried out intentionally. However, the framework follows to assume that passive silence behavior is driven mainly by resignation while proactive behavior is driven by self-protection (fear), other-oriented behavior (cooperation), or strategically seeking for advantages (opportunism). The outlined cases with respect to silence are parallel with voice (van Dyne et al., 2003, p. 1363).

Fig. I-1: Overview of types of silence and voice behaviors

| | Type of Behavior | Employee Silence <i>Intentionally withholding work-related ideas, information, and opinions</i> | Employee Voice <i>Intentionally expressing work-related ideas, information, and opinions</i> |
|--------------------|---|---|--|
| | Employee Motive | | |
| Passive Behavior | Disengaged Behavior • Based on Resignation • Feeling unable to make a difference | Acquiescent Silence Examples: • Withholding ideas based on resignation • Keeping opinions to self-due to low self-efficacy to make a difference | Acquiescent Voice Examples: • Expressing supportive ideas based on resignation • Agreeing with the group due to low self-efficacy to make a difference |
| | Self-Protective Behavior • Based on Fear • Feeling afraid and personally at risk | Defensive Silence Examples: • Withholding information on problems based on fear • Omitting facts to protect the self | Defensive Voice Examples: • Expressing ideas that shift attention elsewhere based on fear • Proposing ideas that focus on others to protect the self |
| Proactive Behavior | Other-Oriented Behavior • Based on Cooperation • Feeling cooperative and altruistic | Prosocial Silence Examples: • Withholding confidential information based on cooperation • Protecting proprietary knowledge to benefit the organization | Prosocial Voice Examples: • Expressing solutions to problems based on cooperation • Suggesting constructive ideas for change to benefit the organization |
| | Opportunistic Behavior • Based on Advantage Seeking • Feeling self-interest with guile | Opportunistic Silence Examples: • Withholding of information to achieve advantages for oneself while accepting harm of others • Protecting power and status and avoiding additional or harmful workload | |

Source: adapted from van Dyne et al. (2003, p. 1363)

With regards to the different types of voice and silence, it is important to reiterate that voice and silence are limited to situations in which employees actually have relevant ideas, information, and opinions that would help to improve their work and/or the performance of the entire organization. Hence, the definitions do not consider situations in which employees just do not own any relevant ideas or suggestions due to the lack of information or opinion (van Dyne et al., 2003, p. 1361).

Conceptualizing and differentiating voice and silence behavior should not just be limited to the perspective of the individual (Jones & Nisbett, 1987) as motives and work behaviors are constantly perceived, attributed, and interpreted by the outside world, such as peers, supervisors, or subordinates. According to the attribution theory (Heider, 1982), observers generally are drawing inferences, assigning meanings, and inferring underlying motives of the observed behavior and therefore also affect the behavior of the actor. In addition, the observer reactions (e.g. rewards or punishment) are impacted by imputed motives (van Dyne et al., 2003, p. 1374). Drawing on the attribution theory, van Dyne et al. (2003, p. 1375) developed a model outlining the consequences for employees to engage in voice and silence caused by ambiguity of behavioral cues and observers attributions. Their model states four central key relationships:

- (1) *Behavioral cues*: due to the presence or absence of voice cues, observers are perceiving employee voice and silence as different behavioral cues.
- (2) *Ambiguity in observer perceptions of employee motive*: due to their different behavioral cues, voice and silence stress the observer's perception of ambiguity of employee motives.
- (3) *Observer misattributes of employee motive*: subsequent attributions and misattributions of the employee's motives due to perceptive difficulties and high level of ambiguity.
- (4) *Incongruent consequences to employee*: different consequences for the employee resulting from the observer's reactions in dependence on the congruency with the employee motives.

The central key relationships outlined are also associated with particular propositions on voice and silence for each set of the relationships. Analyzing these key relationships and therefore examining the corresponding propositions aims at providing further evidence for a clear delimitation of both constructs (voice and

silence) from an observers' perspective (peers, supervisors, or subordinates) – and not just through the individual's perspective as outlined in the section above.

With respect to the first key relationship (1) *behavioral cues*, science differentiates in general between overt and covert behavioral cues. Following Sarafino (1996), overt cues (what people say) represent external actions that can be observed, described, and recorded by the actor and observer. Verbal and non-verbal (motor) behaviors (requires body movement) represent the most basic forms of overt behaviors. In contrast, covert behaviors can be understood as thoughts and feelings, that are not visible for the observer as first sight. However, observers generally focus rather on overt behavioral cues in order to perform attributions and inferences about covert behavioral cues such as thoughts and feeling of individuals as well as motives (van Dyne et al., 2003, p. 1375). Referring to voice and silence, both behavioral types inherent a comprehensive number of covert cues. The biggest behavioral difference is the relative amount of both types' overt behavioral cues, such as speech and language. Using overt cues when communicating ideas, information, and opinions, entails far more behavioral cues that can be observed. Compared to silence, speaking up as an overt cue allows the observers to receive the message content (words) and the entire variety of subtle speech cues (loudness, sarcasm, speed of talking, tone of voice). The entire combination of this communication provides an understanding of the actor's motives, affect, and cognition. In addition, overt verbal communication also inherits non-verbal behaviors, such as gestures (Ricci Bitti & Poggi, 1991), gaze direction (Kleinke, 1986), and facial expression. Therefore, overt verbal and non-verbal behavioral cues enable the observer to grasp the actor's content (words), subtle speech cues (tone, voice, speed), also back-channel information such as body language. This allows the observer to enrich the sensemaking process and to decode the underlying motives of the actor (Kleinke, 1986, p. 1376). In comparison to voice, silence offers far less overt cues and observers therefore have just limited access to speech acts, subtle speech cues, or back-channel communications that they can use in inferring motives. Neverthe-

less, when it comes to silence, observers can access overt non-verbal behaviors (e.g. facial expression or body movement), which research has shown to be quite rich in information (Mullen et al., 1986) and can often not be suppressed by the actor (DePaulo, 1992). However, making inferences and attributions of the target based on just non-verbal behavioral cues is far more difficult and requires a certain ability for the observer to do so correctly. In addition, individuals expressing silence behaviors also might intentionally regulate their non-verbal behaviors, which makes the behavioral cue less noticeable for the observer (Rinn, 1984; van Dyne et al., 2003). Based on this argumentation line, van Dyne et al. (2003, p. 1376) argued that employee silence inherits a lower amount of overt behavioral cues and partially less noticeable non-verbal communication than voice for observers to be able to infer employee motives.

Concerning the second key relationship, van Dyne et al. (2003, pp. 1376–1377) stated that the level of (2) *ambiguity* (Salazar, 1996) to attribute to employee's motives is higher for silence than for voice since less overt behavioral cues can be observed. However, both behaviors contain a certain level of ambiguity which provides equivocality for observers to interpret voice or silence behavior. In this context, DePaulo and Friedman (1998) offer two reasons, why non-verbal cues are more ambiguous and therefore more difficult to understand: first, there can be an inconsistency between the non-verbal communication and the motives of the actor since individuals are not always aware of their non-verbal behavior. Second, due to this ambiguity, non-verbal communication often allows multiple interpretation possibilities and various meanings (Salazar, 1996). Silence provides fewer overt cues and hence offers only non-verbal behavioral cues for the observers. Therefore, observers face greater ambiguity in attributing employee motives for silence than for voice (van Dyne et al., 2003, p. 1377).

With regards to the third relationship, van Dyne et al. (2003, pp. 1377–1378) discussed the degree of accuracy prevailing when *observers aim at attributing motives for voice and silence behavior*. Drawing on the correspondent inference theo-

ry (Jones et al., 1965) and the theory of covariation principle (Kelly, 1971), the researchers argued that in order to perform an accurate attribution to the actor's motive, clear overt behavioral cues are required to pinpoint a single unique, distinctive, and non-common effect that resonates with the behavior observed (van Dyne et al., 2003, p. 1378). As silence is more ambiguous than voice as it provides fewer overt but more subtle behavioral cues, observers face more difficulties identifying more unique, non-common effects. Consequently, observers tend to misunderstand silence and thus misattribute employee motives for this type of behavior as it focuses on withholding ideas, information, and concerns. In contrast, voice behavior provides more verbal communication and overt behavioral cues that can be far more easily interpreted. This leads to the proposition of van Dyne et al. (2003, p. 1378) that interpreting silence is more likely to lead to misattributions of employee motives than voice.

In addition to the discussion of the three propositions, van Dyne et al. (2003, pp. 1378–1382) also stated that certain *incongruent consequences* result from attributions for the motives behind voice and silence – either positive (accurate attributions) or negative (inaccurate attributions) for the actor. This means that not just differences occur between voice and silence behavior in the act of the behavior itself but also through the evaluation process in the follow-up. The final evaluations of the employee motives through the observer depends on whether the observer's attributions are identical or different from the employee actual motives. This reasoning leads to two different attribution scenarios: (1) accurate attributions or (2) misattributions. In the first attribution scenario (accurate attributions), the views of the observer of the employee imputed motives equal the motives that the employee actually intends to show. For example, if the employee purposes a self-protective silence behavior, the observer also infers self-protective motives to the employee's behavior. In case of the misattribution, observer views of employee motives differ from the employee intended motives. So, the observer either interprets the employee motive more negatively or positively than the employee actual-

ly intends (van Dyne et al., 2003, p. 1380). For instance, the observer could suggest that the employee withholds relevant information due to fear (defensive silence), when the employee actually does so to protect peers from the potential consequences of the withheld information (prosocial silence). Regardless of if the motives of the employee are misinterpreted more negatively or more positively by the observer, the misinterpretation leads to certain consequences.

First, focusing on the particular consequences for the actor resulting from an accurate attribution instance (1), the consequences that observers can impact, will be congruent with the motives of the employee. In that case, consequences might involve feedback, performance ratings, recognition, promotions or even demotions (van Dyne et al., 2003, p. 1380). Consequently, accurate attributions do not automatically imply positive consequences – the evaluation scale can extend in both directions. The first scenario just imputes that accurate attributions are more likely to provide congruent and expected consequences for the actor.

Referring to the second scenario (2), observers misattribute the motives of the employee, which creates a mismatch between the motive intended and the results received, due to the misunderstanding of the actual motives. In line with scenario (1), the consequences can be either positive or negative based on the type of mismatch. Incongruence can lead to decreased level of employee motivation as the feedback or rewards do not match with the employee motives. For example, if an employee protects their peers from some witnessed wrongdoing at the workplace through prosocial silence behavior, the silence behavior could be misunderstood as opportunistic or acquiescent silence as the employee seems to be disengaged, he might receive negative feedback or not being considered for a promotion. van Dyne et al. (2003, p. 1381) highlighted that these mismatches occurring between the motives of the employee and the evaluations through the observer might lead to unpredictable feedback, low quality relationships, decreased trust and poor organizational performance. Based on those findings, the researchers suggested that voice behavior tends to lead to outcomes for the employee that are relatively accu-

rate in their attributions, as voice behaviors trigger more likely accurate attributions for motives than silence does. Consequently, silence evokes more misattributions than accurate attributions, and therefore employees perceive greater incongruence in consequences for silence than for voice behavior (van Dyne et al., 2003, p. 1382).

Following van Dyne et al. (2003) and based on the analysis of voice and silence outlined in the sections above, it was shown that there are major differences between voice and silence, supported by the subjective (individual) as well as objective (observer) perspective. Outlining the attribution process and the corresponding consequences of the employee motives through the external perspective (peers, supervisors, and subordinates) continues to stress the major differences between both behaviors (voice and silence) and reinforces the conclusion that silence is far more than just the absence of voice. As a result, research should create a far more comprehensive understanding of the silence behavior in order to decrease the chances of mismatches as well as incongruencies that may lead to negative and serious consequences for employees, the observers but also for the entire organization.

To summarize, the framework of types of voice and silence behaviors discussed within this chapter is not contemplating to be comprehensive, but rather to heighten the comparison of voice and silence from an individual but also objective view, as well as the application of silence within the methodological approach of this research work. As stated, over the past decade, multiple research attempts aimed at conceptualizing the phenomenon of silence and to set it in comparison to voice behavior (see Figure I-1). Almost all definitions of voice and mainly of silence that have been conceptualized so far can be subordinated to the employees' motives/behaviors integrated within the framework presented (Figure I-1): disengaged behavior, self-protective behavior, other-oriented behavior, and opportunistic behavior. However, it should be mentioned that with the growing and ongoing research efforts in both areas, the respective behavioral types of voice and silence

have been successively defined in a more granular and nuanced fashion. It should also be considered that types of voice and silence behavior may consist of motives that are build on highly complex combinations of motives. Nevertheless, even the conceptualization and meaning of certain sub-constructs are mainly grounded on the four motives/behaviors the research work is addressing. Lastly, the methodological approach of measuring antecedents and effects of silence is unanimously build on the conceptualization of silence behavior drawn in this chapter as it displays the four most grounded and convincing motives and sub-types of this particular behavior.

I.2 Systematic Literature Review Methodology

As the primary focus of this thesis is on the phenomenon of silence, a thorough understanding of the concept development of organizational and employee silence as well as their relevance in scientific research is essential. This requires an investigation of how silence and the inexorably related concept of voice were examined from the past to the present day. Although silence constitutes way more than just the absence of voice, the understanding of the development of voice literature over the past decades is key for grasping the entire complexity of silence. Therefore, this literature review aims at shedding light on the silence construct – especially over the last two decades – but also comprises voice as its strongly linked origin.

This chapter outlines the literature review methodology applied and the results gained. The review process is build upon the comprehensive review conducted by Brinsfield et al. (2009), which takes voice and silence literature from 1970 until 2005 into consideration. This present review also traces back the development of silence from its origin in 1970 with Hirschman (1970) and his work on *Exit, Voice, and Loyalty* but focuses mainly on the not yet reviewed period from the year 2005 onwards. Since that time, many researchers have followed the call for research and the number of articles is growing year by year, especially in the empirical field due to the development of respective scales. Therefore, the main objective of this liter-

ature review is, to (1) recapitulate research efforts on voice and silence from 1970 until 2005 in a comprehensive way, as well as (2) to contribute to the scientific community by closing the gap of silence research starting 2005 through the integration and synthesis of the results from the past 15 years of research. Those results constitute a fourth (current) wave of research on voice and silence – as an extension of the wave analogy constructed by Brinsfield et al. (2009). In addition, the review also aims at (3) demonstrating the knowledge of this research area (e.g. vocabulary, theories, methods) achieved by mapping, synthesizing, and assessing the existing literature on silence and partially voice (e.g. fourth wave), (4) identifying recent research efforts empirically investigating antecedents and effects of silence behavior, and (5) gaining therefore further implications for future research.

This requires the application of a replicable, scientific, and transparent literature review methodology which ensures a high level of objectivity to realize the aims deducted above. To accomplish this, in chapter I.2.1 the purpose of a literature review and the taxonomy of Cooper (1984) for categorizing literature reviews will be outlined. Building on that, the methodology of the review process applied will be explained (chapter I.2.2), followed by the explanation of the sampling and data collection process (chapter I.2.3) and completed by the description of the data evaluation and coding process in chapter I.2.4.

I.2.1 Literature Review: Perspective on Purpose and Review Taxonomy

The conduction of a systematic literature review plays an increasingly important role in the definition of knowledge and in setting the stage for sophisticated future research. According to the description and policy of the *Psychological Bulletin* journal, the general definition of a literature review contains at least two elements: first, a literature review does not report new primary research itself, but rather uses documents of primary or original research as its database, which can be empirical, theoretical, critical, analytical, or methodological in their nature (Cooper, 1988, p. 107). Second, a literature review is generally inductive inherently and focuses

on describing, summarizing, evaluating, clarifying, and/or integrating the content of primary research (Cooper, 1988, p. 107). Already in 1986, Cooper was stressing the marked expansion of reviews especially in the area of organizational and psychological literature in his indicative paper. He defined the increase of personnel and accompanying information explosion in these specific research areas to be accountable for this expansion (Cooper, 1988, p. 104). Even earlier in 1971, Garvey and Griffith (1971) addressed this issue with reference to its consequences for researchers:

“The individual scientist is (...) overloaded with scientific information and [can] no longer keep up with and assimilate all the information being produced that [are] related to his primary specialty” (p.350).

In response to this challenge, Garvey and Griffith (1971) recommended to rely stronger on the methodology of literature reviews in order to keep pace with developments in the same or other areas of interest (Cooper, 1988, p. 105). Since then and particularly nowadays, the amount of literature existing and being published in multiple domains has increased tremendously – with respect to quality and quantity. Therefore, the application of a replicable, scientific and transparent literature review methodology which grants objectivity and minimizes bias through the collection, evaluation and analysis of data as well as the interpretation via a particular sampling and coding procedure is more relevant than ever before (Cook et al., 1997; Tranfield et al., 2003, p. 209).

As mentioned above, the expanding literature requires on the one hand collecting, evaluating, but on the other hand also synthesizing research outcomes to enable coherence and perspective to certain problem areas (Cooper, 1988, p. 105). Or to put it concisely according to Boote and Beile (2005):

“A substantive, thorough literature review is a prediction for doing substantive, thorough, sophisticated research” (p. 3).

However, especially in management science and adjacent research areas, the conduction of a literature review became a key tool to cope with the diversity of knowledge for a specific academical research inquiry (Tranfield et al., 2003, p. 208). Without having understood the literature in a certain field, significance research cannot be performed (Boote & Beile, 2005, p. 3). In this context, Lagemann and Shulman (1999) defined the concept of *generativity* as

“the ability to build on the scholarship and research of those who have come before us” (p. 162-163).

Stating here, literature reviews should help to map and to assess the existing literature and to derive research questions with the aim at contributing to the existing body of knowledge (Tranfield et al., 2003, p. 208).

On a macro level, conducting a literature review is supposed to demonstrate the researcher’s knowledge in a certain research area, which also includes the corresponding vocabulary, history, theories, key variables, and methods applied (Randolph, 2009, p. 2). Aside from proofing the knowledge in a specific field and the other reasons outlined above, Gall et al. (1996) and Hart (2018, p. 27) provided plenty further scientific motives for conducting a literature review (see Figure. I-2).

Fig. I-2: Reasons for writing a literature review

| Categorization | Reasons for reviewing literature | Author |
|-----------------------------|---|--------------------|
| Setting the Stage | • Establishing the context of the topic or problem | Hart (1998) |
| | • Understanding the structure of the subject | Hart (1998) |
| Differentiation | • Delimiting the research problem | Gall et al. (1996) |
| | • Delimiting what has been vs. what needs to be done | Hart (1998) |
| Further Research | • Seeking new lines of inquiry | Gall et al. (1996) |
| | • Identifying recommendations for further research | Gall et al. (1996) |
| | • Seeking support for grounded theory | Gall et al. (1996) |
| Knowledge Generation | • Avoiding fruitless approaches | Gall et al. (1996) |
| | • Discovering important variables relevant to the topic | Hart (1998) |
| | • Synthesizing and gaining a new perspective | Hart (1998) |
| | • Identifying relationships between ideas and practices | Hart (1998) |
| | • Rationalizing the significance of the problem | Hart (1998) |
| | • Enhancing and acquiring the subject vocabulary | Hart (1998) |
| | • Relating ideas and theory to applications | Hart (1998) |
| | • Placing the research in a historical context to show familiarity with state-of-the-art developments | Hart (1998) |
| Methodology | • Gaining methodological insights, | Gall et al. (1996) |
| | • Identifying the main methodologies and research techniques that have been used | Hart (1998) |

Source: adapted from Gall et al. (1996) and Hart (2018)

To summarize, a literature review puts the scientists research field of interest in a broader scientific and historical context, but not only reporting the claims that have been made in the existing literature but also critically analyzing the research methods applied and synthesizing the knowledge created in order to open new perspectives for future research (Boote & Beile, 2005, p. 4). A good literature review has been characterized by the following definition:

“the basis of both theoretical and methodological sophistication, thereby improving the quality and usefulness of subsequent research”

Boote and Beile (2005, p. 4).

To conduct a literature review that follows the purposes mentioned, certain processes have been developed in literature. One of the most prominent and effective method is the taxonomy of literature reviews by Cooper (1988). His general taxonomy for classifying literature reviews allows to differentiate between superior from inferior research works based on clear systematic approach as well helps to assess the quality of reviews by objective standards (Cooper, 1988, p. 105).

In the past, researchers (Jackson, 1980; Price, 1965; Taveggia, 1974) highlighted mainly the foci and goals of reviews but did not capture varying and other relevant aspects. Cooper (1988, p. 108) otherwise systematized and expanded both aspects and additionally integrated several other characteristics that helped distinguishing among literature reviews. Based on his taxonomy, literature reviews can be categorized based on six main characteristics: focus, goal, perspective, coverage, organization, and audience (Cooper, 1988, pp. 108–111; Randolph, 2009, pp. 2–4).

Figure I-3 presents the taxonomy of literature reviews by showing the levels of characteristics, their sub-categories and a short description of each literature review characteristic. Within the description part integrated into the figure, literature review characteristics are being described and explained more in detail.

Fig. I-3: Taxonomy of literature reviews

| Characteristics | Categories | Description (Randolph, 2009, p. 2-4) |
|---------------------|------------------------------------|---|
| Focus | Research outcomes | <ul style="list-style-type: none"> • Most common type of literature reviews/helps to identify a lack of information on a specific research outcome, thus creating a justifiable need for an outcome study |
| | Research methods | <ul style="list-style-type: none"> • Concentrate on research methods/aim on identifying key variables, measures, and methods of analysis and informing outcomes-oriented research/combination with outcome reviews possible |
| | Theories | <ul style="list-style-type: none"> • Exposing what theories exist, the relationship between them, and the current state of their scientific analysis/justifying the lack of theories and revealing that certain theories might be insufficient |
| | Practices or applications | <ul style="list-style-type: none"> • Showing how certain measures have been applied and how practice has been concretely carried out/pointing out practical need that has not been addressed yet |
| Goal | Integration | <ul style="list-style-type: none"> • Integrating and generalizing findings across units, treatments, outcomes and settings, |
| | a) Generalization | <ul style="list-style-type: none"> • Analyzing critically previous research, identifying core issues, or explicating a line of argumentation in a certain research area, |
| | a) Conflict resolution | |
| | a) Linguistic bridge-building | <ul style="list-style-type: none"> • Critically analyzing the literature and its weaknesses for a following investigation, and |
| | c) Criticism | <ul style="list-style-type: none"> • Presenting a big picture to the reader |
| | Identification of central issues | |
| Perspective | Neutral representation | <ul style="list-style-type: none"> • Quantitative research: taking neutral perspective and present review findings as fact |
| | Espousal of position | <ul style="list-style-type: none"> • Qualitative research: revealing preexisting bias and its potential affection to the review |
| Coverage | Exhaustive | <ul style="list-style-type: none"> • Coverage describes four scenarios to which extent available literature is located and considered |
| | Exhaustive with selective citation | |
| | Representative | <ul style="list-style-type: none"> • These coverage scenarios span a wide range from the category "exhaustive" (consideration of every single piece of literature existing in a certain research field) over "exhaustive with selective citation" (e.g. articles published in certain journals) and "representative" (random sampling) to "central pr pivotal" (examination of only central and selected articles) |
| | Central or pivotal | |
| Organization | Historical | <ul style="list-style-type: none"> • Chronological organized literature review format |
| | Conceptual | <ul style="list-style-type: none"> • Approach is built around propositions in a research rationale or around various theories |
| | Methodological | <ul style="list-style-type: none"> • Methodologically organized as an empirical paper by focusing on methods applied |
| Audience | Specialized scholars | <ul style="list-style-type: none"> • Definition of primary and other audience addressed by the literature review |
| | General scholars | |
| | Practitioners or policymakers | |
| | General public | |

Source: adapted from Cooper (1988)

To summarize, there are several reasons why the application of this taxonomy is beneficial for determining the purpose and scope of literature reviews. One im-

portant contribution of the taxonomy is to properly assess the quality of reviews, but it can be also applied as a framework for reviewing existing literature, and especially with respect to this research study, to conduct an own literature review by classifying the major characteristics and categories systematically (Cooper, 1988).

1.2.2 Systematic Literature Review Methodology

Within this dissertation, a systematic literature review is applied as it provides a comprehensive and unbiased examination process of existing research compared to a traditional narrative review (Tranfield et al., 2003). According to Mulrow (1994), systematic literature reviews have been argued to offer the most efficient and high-quality method for identifying and evaluating extensive literatures. The methodological approach of this presented literature review is grounded in a state-of-the-art approach. Therefore, the extraction and synthetization of data in the research area of voice and mainly silence follows a structured and objectified process that covers the collection, analysis and interpretation of data through a multistage sampling and coding procedure. The overall structured literature review process is applied according to the primitive approach of David and Han (2004), who defined the following set of criteria outlined by Newbert (2007, p. 125):

1. Search for published journal articles only.
2. Search using specific databases (e.g. ABI/Inform and EconLit).
3. Ensure substantive relevance by requiring that selected articles contain at least one primary keyword in their tile or abstract.
4. Eliminate substantively irrelevant articles by requiring the selected articles also contain at least a certain number of additional keywords in their title or abstract.
5. Ensure empirical content by requiring that selected articles also contain at least a certain number of “methodological” keywords in their title or abstract (e.g. data, empirical, test, statistical, finding*, result* or evidence*).

-
6. Eliminate substantively irrelevant articles by only selecting articles that appear in journals in which multiple articles appear.
 7. Ensure substantive and empirical relevance by reading all remaining abstracts for substantive context (i.e., discussion of the theory) and empirical content (i.e., mention of statistical analysis).
 8. Further ensure substantive and empirical relevance by reading all remaining articles entirely for substantive context and adequate empirical content.
 9. Consolidate results from databases selected and eliminate duplicate articles.

Based on this methodological criteria set by David and Han (2004), Newbert (2007) made some adaptations to this process. These adaptations included for instance the requirement that the literature selected must be rigorously peer reviewed to increase the quality of literature selected. All other adaptations were mainly due to research specific reasons such as the scope of literature reviewed or the selection of additional or methodological key words in the overall process. Nevertheless, within this thesis, the adapted and more comprehensive process proposed by Newbert (2007) is applied to compile the present sample of this literature review. This includes for instance the unexceptional consideration of peer reviewed articles to ensure a high-level quality. Along the entire analysis process, the result and outcome description is carried out by means of certain documentations by words and figures (e.g. distribution of the literature by publishing date or number of citations). Hence, this research study aims at applying an objective approach that also reduces the risk of bias resulting from samples selected based on purely subjective criteria. The next both chapters shed more light on the sampling and data collection process (chapter I.2.3) as well as the process of data evaluation and on coding (chapter I.2.4).

I.2.3 Sampling and Data Collection

As outlined above, the sampling and data collection process of this thesis follows the suggested approach of Newbert (2007) and is based on the one presented by

David and Han (2004). Additionally, the process is in alignment with the pre-defined characteristics (*focus, goal, perspective, organization, coverage, audience*) described in chapter I.2.1 and is executed by a multi-stage selection and filter procedure. The main requirements for papers being considered in the overall process were: (1) the actual availability in specific and predefined data bases, (2) consideration of certain keywords (primary, additional, methodological) in their title or abstract, (3) dissemination in high-ranked and high-quality journal, (4) inclusion of conceptual, empirical (qualitative, quantitative, mixed methods) models and methods, (5) relevant empirical content and notable scale developments efforts for the purpose of this research study and (6) just articles written in German or English.

Following the taxonomy of Cooper (1988), this literature review takes multiple categories with regards to its *focus* into consideration as research of silence in organizations is more scarce and rather recent (Morrison & Milliken, 2003; Whiteside & Barclay, 2013). Consequently, by applying a rather neutral representation (*perspective*), the focus of this literature review is on research outcomes and methods, as well as on theories and certain applications in practice (e.g. Bowen & Blackmon, 2003; Kiewitz et al., 2016; Knoll & Dick, 2013). Since the considered papers are exhaustive with selective citation in the first step (primary examination wave), and pivotal in the second step (secondary examination wave), a comprehensive and detailed overview of research outcomes (*coverage*) between 2000 and 2019 is provided. Building on the review of Brinsfield et al. (2009), which is respecting relevant articles until 2005, this literature review aims at analyzing high-quality papers published in journals with high acknowledgement in the research community and extracted from renowned databases (e.g. Dupret, 2019; Xu et al., 2015). As outlined in the following chapter, the results of the review process are organized in a historical format (*organization*) for scholars as a primary academic audience (*audience*).

The final sampling process included the following concrete steps:

-
1. The subsequent research databases were used within the conduction process: *Web of Science Core Collection* and *EBSCOhost Business Source Ultimate* (including the following sub-databases: eBook Collection, EconLit, MEDLINE, PsycARTICLES, Psychology and Behavioral Sciences Collection, PsycINFO, PSYINDEX, PsycTESTS, SocINDEX and CINAHL) – the search process included business and management specific databases as well as databases in the field of psychology, sociology and healthcare since the phenomenon of silence appears across multiple research domains such as organizational behavior, behavior and industrial-organizational psychology, communication or management.
 2. High level of quality and relevance for the entire research study was ensured by requiring that the systematic literature search be constrained to papers which were invariably published in academic journals and passed through a peer review process.
 3. Disregarding irrelevant papers by selecting only papers that were published in the period between 2000 and 2019 to ensure up-to-date research articles and building on the review conducted by Brinsfield et al. (2009) which only considers literature up to the year of 2005 (exception *auxiliary papers*).
 4. Disregarding irrelevant papers by selecting only papers that were published in English or German.
 5. Substantive relevance of the selected papers was ensured by requiring that the papers included at least one primary keyword (* stays for any given number of characters added):
 - a. in their title or abstract: “silence*”, “voice*”, “speaking up*”
 - b. in their title or abstract: “employee*”, “organization*”.
 6. Substantive relevance of the selected papers was ensured by requiring that papers be eliminated not including at least one of the following additional keywords:

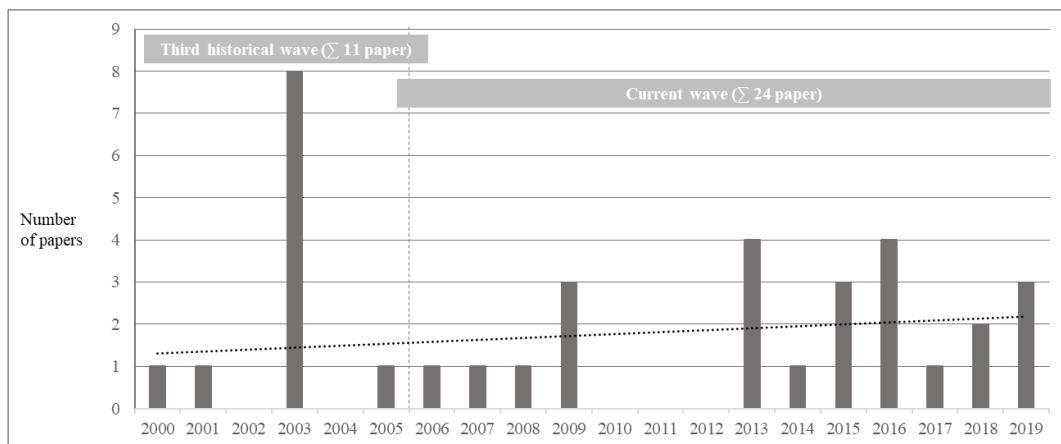
-
- a. in their title or abstract: “acquiescent*”, “quiescent*”, “defensive*”, “prosocial*”, “opportunistic*”, “behavior*”, “withhold*”, “climate*”.
7. Substantive empirical content was ensured by requiring that the papers included at least one of the following 20 “methodological” keywords:
 - a. in their title or abstract: “conceptual*”, “exploratory*”, “quantitative*”, “qualitative*”, “methodological*”, “scale*”, “development*”, “impact*”, “influence*”, “antecedent*”, “cause*”, “effect*”, “outcome*”, “result”, “consequence*”, “data*”, “empirical*”, “test*”, “evidence*”, “statistical*”.
 8. Excluding irrelevant papers by selecting only papers that were published in journals in which multiple articles are published (excluding single journals).
 9. Excluding irrelevant papers by selecting only papers that were published in journals that are listed within the complete list of the VHB-JOURQUAL 3 and are at least rated according to the JQ3 with “A+”, “A”, “B” or “C”.
 10. Ensuring substantive relevance of the papers was ensured by requiring that the papers selected were already be cited according to the *Web of Science* (“times cited indicator”).
 11. Consolidation of all search outcomes and elimination of duplicated papers.
 12. Excluding irrelevant papers by selecting only papers that were published in the organizational, industrial-organizational psychology or business/economic context or did not contain least one of the following keywords:
 - a. In their title or abstract: “LGBT” (“lesbian*”, “gay*”, “bisexual*”, “transgender*”), “trauma*”, “psychotherapy*”, “sexual harassment”, “misconduct*”, “activism*”, “politics*”, “government*”, “police*”, “news media*”.
 13. Excluding case studies or selectively book chapters.

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14. Ensuring independent (e.g. leadership, fear, trust, empowerment) and dependent variable (e.g. silence, voice, creativity) in quantitative models.
 15. Excluding irrelevant papers by selecting only papers after a screening process for substantive and relevant context that is in alignment with the overall aim and focus of the literature review applied (e.g. discussion of literature review focus related questions).
 16. Excluding irrelevant papers by selecting only papers that provide empirical relevance by offering statistical analyses (quantitative or qualitative) and significant results.
 17. Ensuring substantive and empirical relevance by reading all remaining abstracts for substantive context and empirical content.
 18. Further ensuring substantive and empirical relevance by reading all remaining papers entirely for substantial context and adequate empirical content.
 19. Documenting relevant content, outcomes and paper specific information (e.g. author, title, publication date, level of analysis, concept or theory applied, methodology, sample size, independent and dependent variables, journal name, journal ranking) in an excel file.

The data collection and sampling process revealed 35 papers within the period from 2000 and 2019 with high quality and substantial relevance to the overall focus of the study. Building up on the chronological waves in the literature on voice and silence (time period: 1970-2005) provided by Brinsfield et al. (2009), the review of this study produced within the third wave (2000-2005) eleven papers in the area of silence (see Figure I-4). In comparison to that, the subsequent (current) wave (2006-2019) comprises 24 papers (see Figure I-5). It is important to mention, that in contrast to the literature review conducted by Brinsfield et al. (2009), which includes literature from both research fields (voice and silence), the literature review of this study mainly focuses on the phenomenon of organizational and employee silence. However, the chronological presentation of the research results might be somewhat misleading, since a special issue on the topic of silence (*Spe-*

cial Issue: Speaking Up, Remaining Silent: The Dynamics of Voice and Silence in Organizations) was published in the *Journal of Management Studies* in 2003. Seven out of eight papers listed in 2003 can be assigned to this special issue. Nevertheless, the list of publication (Figure I-4) indicates that there has been a growing interest as well as an increased number of publications in the silence research over the past six years.

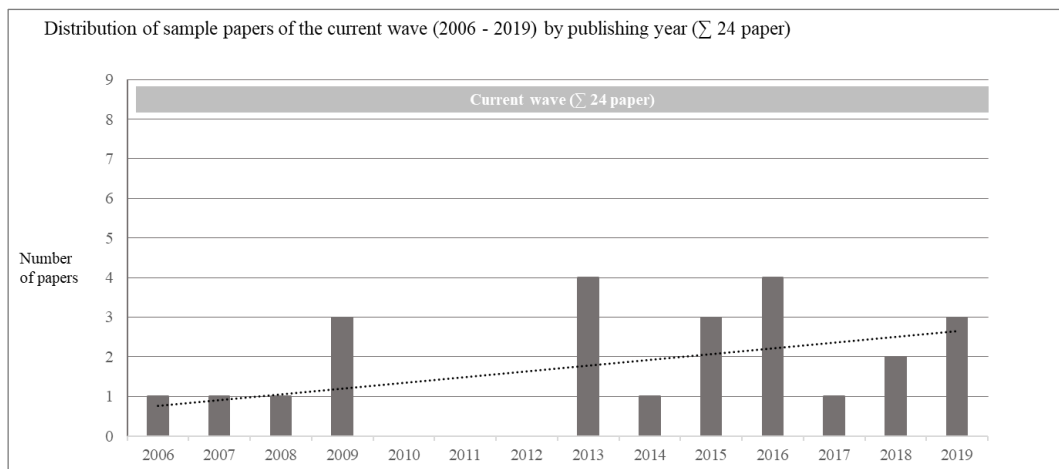
Fig. I-4: Sample papers - third and current wave (2000–2019) by publishing year (Σ 35 paper)



Source: own creation

Focusing on the current wave, 24 paper were published within the years of 2006 until 2019 and the numbers of publications are still growing (see Figure I-5). The current research efforts also suggest that more silence literature will follow due to the tremendous groundwork that was done lately in the research area of silence, both on a conceptual level (e.g. Morrison & Milliken, 2000; Pinder & Harlos, 2001; van Dyne et al., 2003) but also with regards to the development of appropriated scales for measuring silence (e.g. Brinsfield, 2013; Knoll & Dick, 2013).

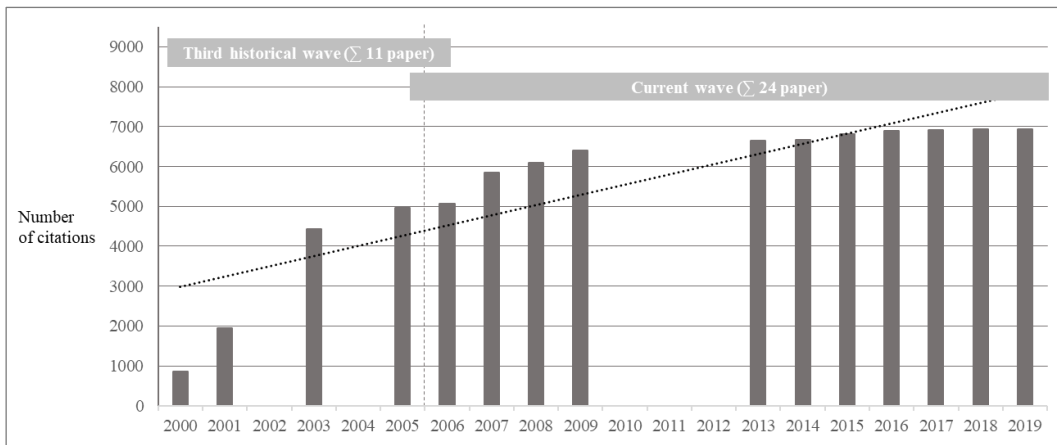
Fig. I-5: Sample papers - current wave (2006–2019) by publishing year (Σ 24 paper)



Source: own creation

However, the illustration of accumulated citations performed (analyzed by the indicator *times cited* without self-citations from the *Web of Science Core Collection*) within the field of silence (see Figure I-6) and with respect to the sample set provided (Σ 35 paper), supports the observation of an increased publication and research interest over the past years. Especially the key publication on organizational silence by Morrison and Milliken (2000) and on employee silence by Pinder and Harlos (2001), as well as the special issue on the topic of silence in 2003 in the *Journal of Management Studies* can be considered as the key starting point of numerous and more diverse research work in this relevant area.

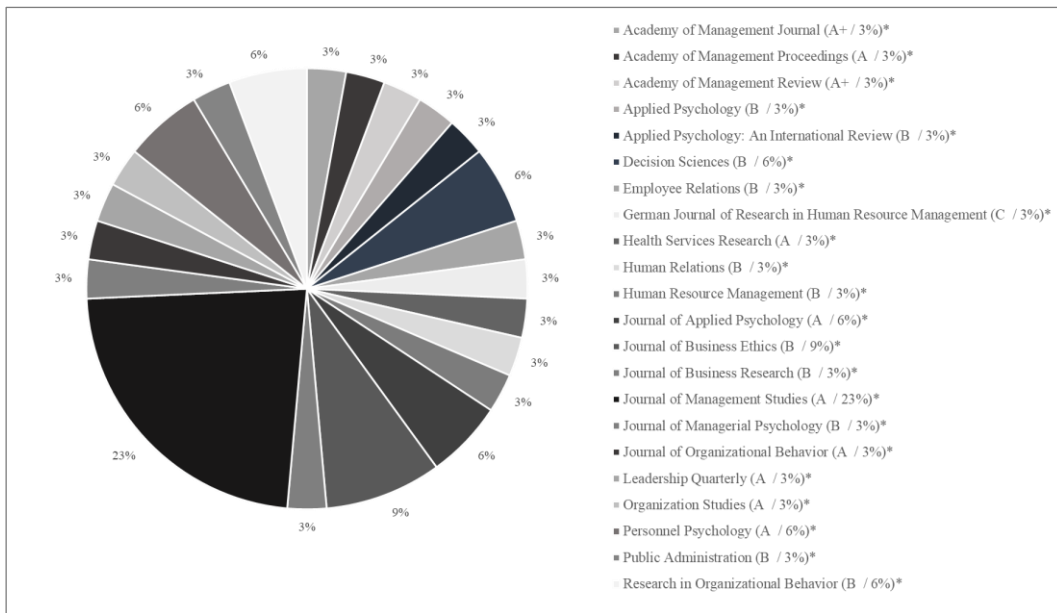
Fig. I-6: Distribution of citations - third and current wave (2000–2019) (Σ 35 paper)



Source: own creation

In addition to the distribution of the literature reviewed as well as citations on the timeline, Figure I-7 shows in which journals the applied literature of this literature review were published. As the phenomenon of silence was investigated from diverse angles and in multiple domains (e.g. management, organizational behavior, industrial-organizational psychology), the publications were released in different journals across various research areas such as business, management, psychology, ethics, public administration or health care sciences. With reference to the present sample, the 35 papers considered were published in 22 unique journals: eight papers (accounting for 23%) were released in the *Journal of Management Studies* (A ranked) and three papers (accounting for 9%) in the *Journal of Business Ethics* (B ranked). Moreover, two publications each (accounting for 6% each) were published in the journal of *Research in Organization Behavior* (B ranked), *Personnel Psychology* (A ranked), *Journal of Applied Psychology* (A ranked) and *Decision Sciences* (B ranked). All other papers are distributed over the remaining 16 journals.

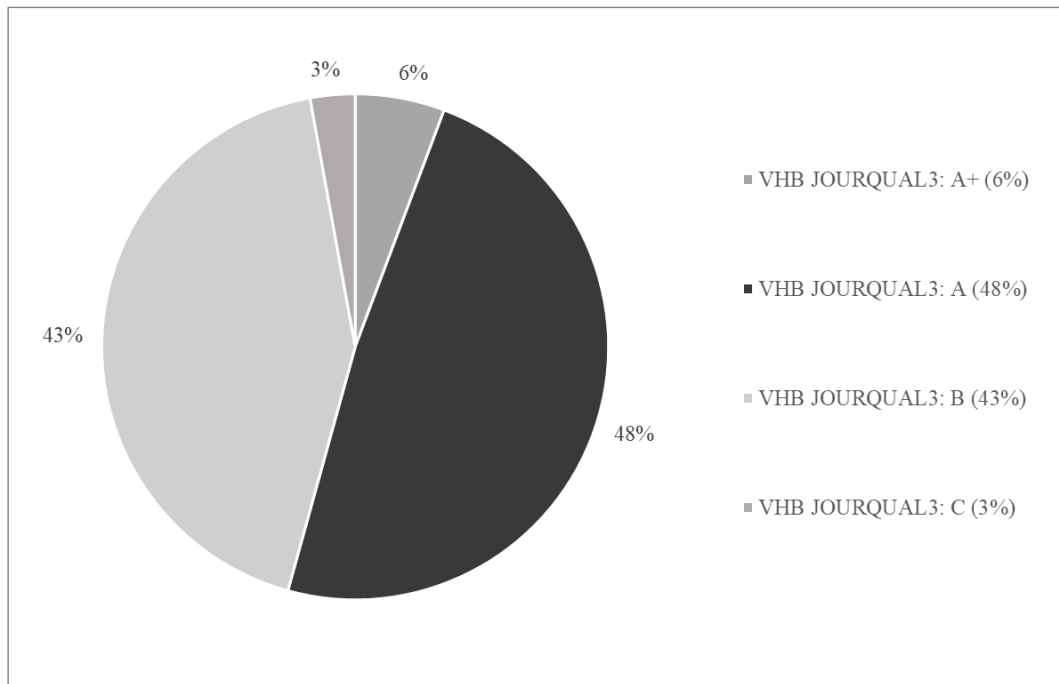
Fig. I-7: Sample papers - third and current wave (2000–2019) by journal published (Σ 35 paper)



Source: own creation

The two key criteria elements of the sampling and selection process were a high level of quality and relevance for the entire research study. This was ensured as the literature search was just constrained to papers which were invariably released in academic journals and were peer reviewed. Consequently, the majority of all papers considered were published in A ranked journals (48%; $n = 17$). The second largest group of papers (43%; $n = 15$) were B ranked, followed by two papers (6%) in A+ ranked journals and just one (3%) paper published in a C ranked journal (see Figure I-8). The high quality of publications used in this study is intended to provide a high-quality basis for both the literature review itself and the overall research project (e.g. research methodology, discussion and implications).

Fig. I-8: Sample papers - third and current wave (2000–2019) by journal ranking (Σ 35 paper)

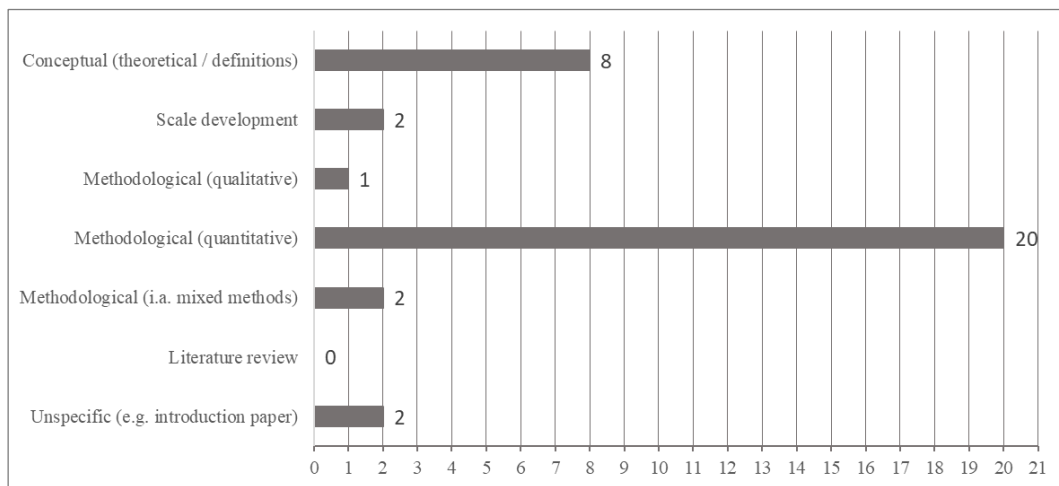


Source: own creation

Figure I-9 shows the research focus of the papers reviewed. Not surprisingly, six out of 11 papers in the third chronological wave (2000–2005) have their focus on the conceptual level of analyzing organizational and employee silence or are concerned with introducing the topic based on summarizing recent attempts. This includes mainly the breaking-through research on organizational silence (Morrison & Milliken, 2000) and employee silence (Pinder & Harlos, 2001). In 2003, van Dyne et al. (2003) contributed to the conceptual efforts by providing a sufficient differentiation between voice and silence. But also closely related topics such as the spiral of silence (Bowen & Blackmon, 2003) were further conceptualized and discussed within this time period. In 2003, the first empirical attempts in gaining a better understanding of the phenomenon of silence was made by Morrison and Milliken (2003) through a qualitative study. Based on that, further quantitative research attempts in examining speaking up behavior (Edmondson, 2003; Premeaux & Bedeian, 2003), opinion withholding (Xu Huang et al., 2003) as well

as employee silence (Vakola & Bouradas, 2005) behavior were performed. The subsequent (current) wave (2006–2019) was characterized mainly by empirical research (qualitative, quantitative and mixed methods), especially after the development of appropriated scales for measuring silence behaviors by Brinsfield (2013) and Knoll and Dick (2013). Consequently, 15 out of 16 papers that were published after the scale development in 2013 focus on empirical (mostly quantitative) research. Just a few publications within the current wave focus on conceptual work (e.g. Blackman & Sadler-Smith, 2009; Henriksen & Dayton, 2006; Kish-Gephart et al., 2009).

Fig. I-9: Sample papers - third and current wave (2000–2019) by research focus (Σ 35 paper)

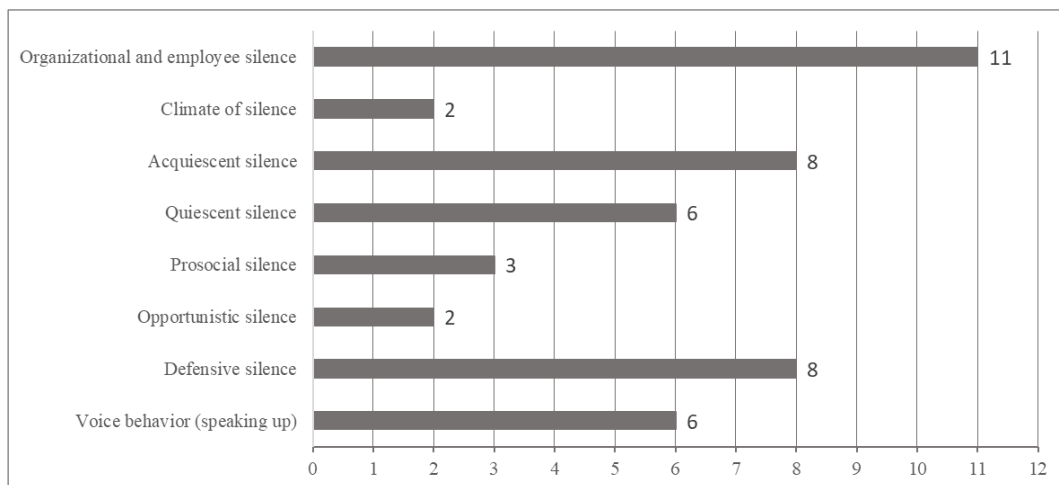


Source: own creation

Furthermore, most papers included within this literature review have a strong focus on organizational (8.7%; $n = 4$) and employee (15.2%; $n = 7$) silence (24%; $n = 11$) as well as on their sub-constructs: acquiescent, quiescent, prosocial, opportunistic, and defensive silence (58.7%; $n = 27$). Figure I-10 highlights the distribution of dependent variable used within the 35 papers considered in the evaluation process. It is important to mention that certain papers used multiple dependent

variable (e.g. Kish-Gephart et al., 2009; Lam & Xu, 2019; Vakola & Bouradas, 2005). Especially after the development of sub-constructs of silence behavior in connection with the development of respective scales (Brinsfield, 2013; Knoll & Dick, 2013), most (empirical) attention was on investigating acquiescent silence (17.4%; n = 8), defensive silence (17.4%; n = 8) and quiescent silence (13%; n = 6). Just a few papers were dealing with prosocial (6.5%; n = 3) and opportunistic (4.3%; n = 2) silence which were examined less frequently (e.g. Knoll & Dick, 2013; MacGregor & Stuebs, 2014; van Dyne et al., 2003). Voice behavior (including speaking up behavior) were examined in a moderate way, mostly in a comparative manner and with the aim at providing a statistically-based demarcation of silence and voice (e.g. Knoll et al., 2016; Madrid et al., 2015; van Dyne et al., 2003).

Fig. I-10: Sample papers - third and current wave (2000–2019) by dependent variable (Σ 35 paper)

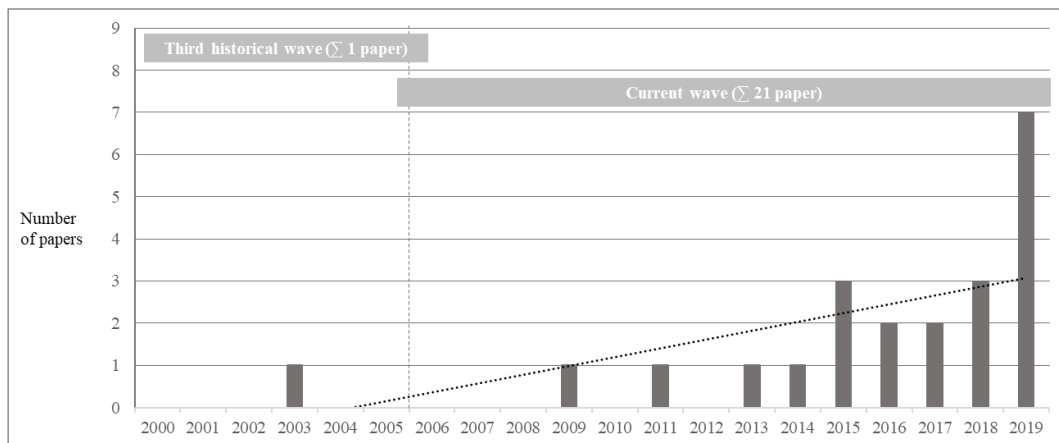


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In addition to the increasing research activities over the last years on the topic of silence, there is also a growing interest on antecedents and effects of certain sub-constructs of silence, which is illustrated in Figure I-10. Over the past 15 years, no saturation of research activities has been reached, and the overall number of publications is growing. This observation is also supported by the list of auxiliary pa-

pers. Those papers were identified and summarized within the literature research process and are worth being mentioned. The sample comprises 22 auxiliary papers that contribute to the overall understanding of the research area even though they did not pass the requirements of the sampling and data collection process. Figure I-11 shows the publication dates of the auxiliary sample (n = 22), which are in line with the publication patterns of the actual sample papers (n = 35): most publications are empirically based and have mainly been published over the last six years (86.4%; n = 19) and within the current wave (95.5%; n = 21). In terms of the specific topic, these papers also vary over multiple research domains, such as business, psychology, educational research, but also nursing and sociology. The main reasons the papers of the auxiliary sample did not meet the requirements of the sampling process were due to their insufficient relation to the organizational and business context (e.g. Amar et al., 2019; Çaylak & Altuntaş, 2017; Yalçın & Baykal, 2019) as well as the quality of the papers evaluated by the ranking of the journal published and the paper's citation record (e.g. Bormann & Rowold, 2016; Erkutlu & Chafra, 2019; Timming & Johnstone, 2015).

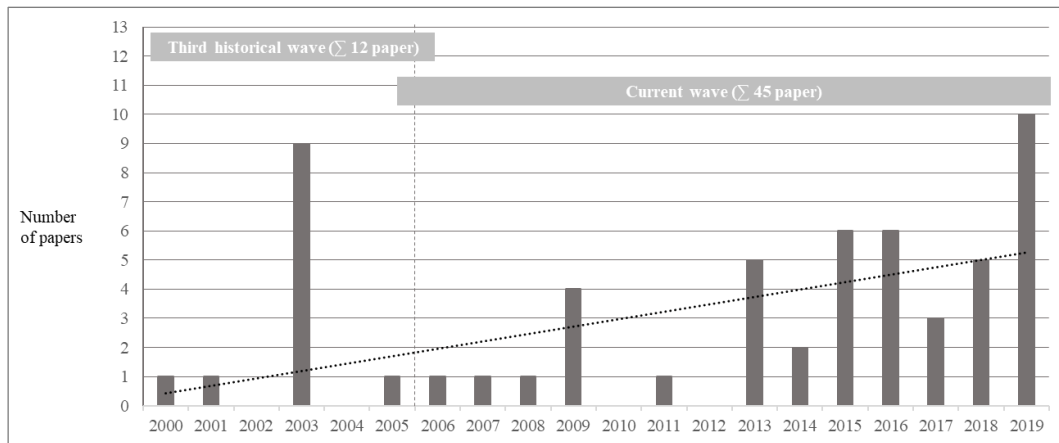
Fig. I-11: Auxiliary papers (2000–2019) by publishing year (Σ 22 paper)



Source: own creation

An overview of the distribution of the entire sample (n = 57), consisting of sample papers (n = 35) as well as auxiliary papers (n = 22) over time (2000-2019) is provided in Figure I-12. The figure clearly underlines the emphasis that the frequency of research activities as well as the interest in the research stream of organizational and employee silence has increased considerably, especially over the last years and within the current wave of silence research. Within the third chronological wave, 12 papers (21%) were published compared to 42 papers within the current wave (79%). However, the literature of both samples also revealed that the quality-level of recent publications is decreasing in contrast to the ones of the third historical wave. This leads to a rather ambivalent observation: the number of publications on silence are increasing but only on a moderate level, which is also supported by the high number of papers that did not survive the requirements of the sampling process.

Fig. I-12: Sample and auxiliary papers (2000–2019) by publishing year (Σ 57 paper)



Source: own creation

However, the outcomes of the literature review analysis evidence and support the right timing for conducting a literature review in the research field of organizational and employee silence. As outlined above, no literature review attempts have been performed since Brinsfield et al. (2009) which encompass the literature on

voice and silence until the year of 2005. Furthermore, the development of scales in measuring silence behavior by Brinsfield (2013) and Knoll and Dick (2013), was a major landmark of contribution for a better understanding of the mechanisms of silence behaviors by empirical investigations and contributed effectively to the increasing publications and interest on this topic.

Hence, the literature review of this research study aimed at providing an overview of research activities and foci as well as an overview of findings and to-be-examined issues for future research to the scientific community with respect to the third (2000-2005) and current (2006-2019) chronological wave of silence research.

1.2.4 Data Evaluation and Coding

Within the process of data evaluation, the information of the papers meeting the requirements for being included into the main sample ($n = 35$) will be extracted and evaluated. Following the proposed process by Randolph (2009), the developed system for extracting data from the papers is mainly determined by the focus and goal of the literature review. As research on silence is rather limited and recent, the literature review is focused on research outcomes and methods, as well as on theories and certain applications in practice through a neutral perspective. The goal is to shed light on current publications by analyzing which theories, concepts and methodological approaches were being applied and in which direction the research stream of silence is developing in general. The extracted and evaluated information was documented in a (electronical) coding book. The aggregation of important information and outcomes for each paper – based on the focus on goal of this literature review – in this separate coding book was guided by careful reading the application of the approach proposed by Randolph (2009, pp. 7–8). First, an excel spreadsheet with certain main categories was created for integrating all the considered data and information extracted. As the extraction process revealed other types of information throughout the process, a pilot testing as well as revision of the cod-

ing book was applied to ensure an acceptable level of interrater reliability. The final coding book (see Appendix 1) includes relevant information regarding:

- (1) *macro data* (year of publication, title, authors, journal, journal ranking),
- (2) *article details and classifications* (voice or silence focus, level of analysis, concept or theories applied),
- (3) *empirical models* (quantitative, qualitative mixed methods approaches, independent variables, dependent variables) and
- (4) *data collection process* (sample size, data basis).

Extracting and outlining the information based on the categorizations provided a reasonable and well-structured literature review. After integrating all necessary data into the final coding book – including a revised process – the book was divided into two main spreadsheets. The first sheet was focusing on the third historical wave, which considers articles with reference to silence literature in the period between 2000 and 2005. The second sheet took on publications of the current wave (2006-2019) into consideration. Both sample sheets can be found appendix 1. The separation of both chronological research streams allowed to identify and to compare certain research directions such as the conceptualization phase of organizational and employee silence, followed by first empirical attempts to better understand the cause-and-effect mechanisms of silence behavior as well as the development of scales and the respective validation and application of these scales in practice via empirical studies.

I.3 Chronical Waves and Conceptualizations of Voice and Silence

In 2009, Brinsfield et al. (2009) were publishing a historical review on voice and silence as well as on related conceptualizations that was focusing on publications in the time period from 1970 to 2005. Within their review, research on voice and silence in organizations was traced back by identifying three essential waves: the first *initial wave* (1970s to mid-1980s) covered mainly the origin and conceptualization of voice behavior, and only to a very limited extent silence. The *second*

wave (mid-1980s to 2000) addressed research around speaking up behavior, with growing attention on silence behavior. Within the last *wave* (*current wave*) from 2001 until 2005, the concept of voice and silence was investigated in a far more nuanced fashion. The review of Brinsfield et al. (2009) provided a comprehensive historical overview on literature in the context of voice and silence, it however only comprised relevant literature published up to the year 2005. The achievement of consolidating, examining, and synthesizing literature in the field of voice and silence in a time span of 35 years sets the stage and the motivation for the literature review of this dissertation.

Its legitimation and necessity is based on multiple rationales: first, the emancipation of silence from voice literature was initiated by the groundbreaking publications of Morrison and Milliken (2000) on *organizational silence* and van Dyne et al. (2003) on the concept of *employee silence* beginning of 2000. Second, based on this preliminary work, conceptual and empirical research investigating the mechanisms of silence as well as its antecedents and effects was receiving strongly growing attention, especially after the development of appropriate scales by Knoll and Dick (2013) and Brinsfield (2013). As a third rational, there is currently no review existing that fully covers the literature of silence since the last review approach up to the year 2005 from Brinsfield et al. (2009). And lastly, the examination of silence behavior is receiving increasingly attention and the literature body is growing steadily (see chapter before). However, research gaps around the concept of silence have been closed by scholars just to a very limited extend over the past 15 years. The number of unresolved questions is still vast and the call for contribution to this research field is undistorted and more relevant than before.

Therefore, this research literature review connects to the prework by Brinsfield et al. (2009) and aims at revealing literature that has been published in the domain of organizational and employee silence over the last two decades (2000-2019). This is supposed to provide an up-to-date overview of concepts that are tethered to silence behavior such as the MUM effect or principled organizational dissent, but also to

investigate notions of silence that were applied in different literatures (e.g. job withdrawal, organizational identification, authentic leadership, organizational justice, organizational citizenship behavior, and social ostracism). In addition, this literature review intends also to illustrate which concepts or theories were applied in the context of silence research and to synthesize the results from examining silence behaviors based on empirical approaches (qualitative, quantitative, mixed methods).

To offer a sufficient understanding of the origin and conceptualization of silence and voice behavior, the results of the *initial wave* (1970s to mid-1980), the *second wave* (mid-1980s to 2000) and *third wave* (previously defined as “current” wave) (2001 until 2005) according to Brinsfield et al. (2009) will be recapitulate in a compact manner. Building on that, a fourth wave – namely *current wave (fourth wave)* – will be introduced and reviewed by focusing on the period of 2006 until 2019.

This represents a novel contribution to the silence research context. Consequently, this literature review also adds to the silence research body by providing a comprehensive overview of research efforts of almost two decades and therefore helping to identify certain research streams, application of theories, methodological approaches, and empirical results. This also allows to derive research questions and further implications for scholarships.

1.3.1 Main Voice and Silence Concepts in Organizations

Over the past decades, scholars have put a lot of attention on the transmission of *verbal* (e.g. content and communications channels) but also on *non-verbal messages* such as the perception of underlying ideas by the receiver in the organizational context. Understanding the mechanisms of sending and receiving information within organizations is crucial as it helps to better understand the particular behavior of individuals in the business context (May & Mumby, 2004). This is mainly due to the fact that “the spoken word can be considered as the primary cur-

rency of social interaction” (Brinsfield et al., 2009, p. 3). In this context, D. Grant et al. (2004) argued that discourse or communication in any form is an act of creation and giving an existence to organizations by their members. Hence, Mumby (1997) highlights that

“discourse is the principle means by which organization members create a coherent social reality that frames their sense of who they are” (1997, p. 181).

This statement supports the fact that behaviors and attitudes expressed by employees in the day to day life, including their perceptions of reality and inherent beliefs, are designed by the discursive practices in which they engage and to which they are exposed to (D. Grant et al., 2004, p. 3). This obviously contributes a lot to the knowledge that has been gained in various disciplines (e.g. management, organizational behavior, psychology) aiming at understanding and predicting human behavior based on the transmission of verbal and nonverbal messages in the work related context. Consequently, the perception and act of communication is more than merely individual components but is rather perceived as entire patterns or configurations. Following Köhler (1967) in the classic gestalt terminology: “voice is figure, and silence is ground” (Brinsfield et al., 2009, p. 4).

Until the year of 2000, scholars within the voice literature have largely suggested that silence as the withholding of ideas can be considered as the opposite of articulating voice. By dedicating an entire publication to the phenomenon on organizational silence, Morrison and Milliken (2000) argued that silence is more than just the absence of voice. Subsequent to this, other researchers such as van Dyne et al. (2003) also set out to challenge this simplistic notion by offering a conceptual framework that helped distinguishing voice and silence as separate and multidimensional constructs (see chapter I.1.2). Other scholars such as Pinder and Harlos (2001) followed this impetus by showing that voice and silence are not just two distinct concepts but also further differentiated employee silence from organizational silence as a more nuanced fashion of silence behavior. Proving that silence

is in many cases more than just nothingness can be also underlined by an African proverb: “Silence is talk too”. The investigation of underlying motivations of expressing (voice) or withholding (silence) of relevant information, ideas, or opinions in the work-related context, reveals a lot about the organization itself and its employees. Multiple researchers highlighted the fact that research on the important concept of silence is more recent and more sparse (Blackman & Sadler-Smith, 2009; Milliken et al., 2003) and that despite the growing interest in organizational and employee silence, significant gaps in understanding the concepts themselves as well as their antecedents in organizations and the implications and results of engaging in silence behavior (Whiteside & Barclay, 2013). However, multiple calls for research contributions, either from a conceptual or empirical perspective have been made and are still unacknowledged (Brinsfield, 2013; Knoll & Dick, 2013; MacGregor & Stuebs, 2014; Madrid et al., 2015).

By reviewing the history of mainly silence and just partially voice literature, this chapters aims at presenting the research developments in a convenient perspective and to reveal central research streams following a historical timeline. To understand recent developments of organizational and employee silence, construct developments in this research domain will be outlined from a historical point of view. To begin with, earliest conceptualizations of the 1970s (e.g. loyalty, MUM effect, spiral of silence) will be delineated, followed by subsequent development of voice and silence from the mid-1980s to 2000 (e.g. whistle-blowing, issue selling, deaf ear syndrome). Within the period of 2000 and 2005, this literature review will focus mainly on the definition and conceptualization of organizational and employee silence (Morrison & Milliken, 2000; Pinder & Harlos, 2001). Based on that, it will finally be illustrated how silence behavior has in recent times been further conceptualized and applied through multiple empirical attempts in various organizational contexts (2006-2019). In this regard, voice will be defined as speaking up behavior such as proactively making suggestions of employees for change (van Dyne et al., 2003, p. 1369) and silence as the withholding information, opin-

ions, or concerns regarding work-related problems or issues (Morrison & Milliken, 2000, p. 707).

Therefore, this literature review also shows how silence and partially voice has been examined in the past and how these constructs were used in particular areas (e.g. job-withdrawal, burnout, social ostracism or justice). Lastly, the investigation of silence behavior from an empirical point of view, including the development and application of appropriated scales as well as their outcomes, are central to this literature review. To define and to distinguish all different types of conceptualizations of voice and silence behaviors, these concepts are depicted in the following tables. The content of the tables is based on the summary of Brinsfield et al. (2009, pp. 5–7), but adopted in certain ways (e.g. clustering by historical waves) and extended by integrating the analysis of the entire current (fourth) wave (2006-2019), reflecting key concepts in the study of silence in organizations. The table also reveals central information about the key concepts such as their focus, direction, level of analysis, situation, or event as well as an associated definition or description of the concept. Consequently, this table also presents the framework for analyzing and outlining the study on voice and silence behavior sorted by four central historical waves defined – starting in the 1970s and ending in the year of 2019. As already mentioned, the review of the first three waves presented in this dissertation, is based on the pre-work of Brinsfield et al. (2009), but adopted in certain ways and extended by an entire new current (fourth) wave, covering relevant research published over the last 15 years. This aims at offering an up-to-date overview of research streams and efforts in the field of organizational and employee silence, as well as partially on voice behavior.

Fig. I-13: Initial wave - relevant voice and silence concepts in organizations

| | Concept | Voice or Silence Focus | Direction | Level of Analysis | Situation or Event | Notable Definition or Description |
|--|-------------------------|-------------------------------|--|-----------------------------------|--|---|
| Initial Wave (1970s to mid-1980s) | Organizational change | Voice | Upward | Individual | Idea, need/improvement | Hirschman (1970) defined voice as "any attempt at all to change rather than escape from an objectionable state of affairs" (p. 30). |
| | Loyalty | Silence | Upward | Individual | Response to job dissatisfaction | When dissatisfied, loyal employees are confident that things will improve, leading them to remain in their organizations and suffer in silence (Hirschman, 1970). |
| | The MUM effect | Silence | Upward | Individual | Negative information | Individual's general reluctance to convey bad news because of the discomfort associated with delivering negative information (Conlee & Tesser, 1973a). |
| | Spiral of silence | Silence | Upward, lateral, downward, or external | Individual, group or organization | Disagreement with public opinion/avoid isolation | Fear of isolation and feelings of self-doubt discourage people from expressing ideas that fail to conform to public opinion (Noelle-Neumann, 1974). |
| | Organizational learning | Voice | Upward, lateral, or downward | Individual, group or organization | Need for information and knowledge sharing among employees | Fundamental to organizational learning is the need for information and knowledge-sharing among employees (Argyris, 1977). |

Source: adapted from Brinsfield et al. (2009)

Fig. I-14: Second wave - relevant voice and silence concepts in organizations

| | Concept | Voice or Silence Focus | Direction | Level of Analysis | Situation or Event | Notable Definition or Description |
|--|---|-------------------------------|--|--------------------------|---|---|
| Second Wave (mid-1980s to 2000) | Whistle-Blowing | Voice | External | Individual | Witness wrongdoing | Disclosure by organizational members of perceived organizational wrongdoing to authorities who can take action (Near & Miceli, 1985). |
| | Principled organizational dissent | Voice or silence | Upward or external | Individual | Perception of moral wrongdoing in the workplace | Effort by individuals in the workplace to protest and/or to change the organizational status quo because of their conscientious objection to current policy or practice (Graham, 1986, p. 2). |
| | Procedural/ organizational justice | Voice | Upward | Individual | Fairness concerns | Defined as the perceived fairness of the processes that lead to decision outcomes; procedural justice is promoted by granting voice in decision-making (Thibaut & Walker, 1975). |
| | Issue selling to top management | Voice | Upward | Individual | Attempt to influence organizational decision making | Individuals' behaviors that are directed toward affecting others' attention to and understanding of issues (Dutton & Ashford, 1993, p. 398). |
| | Complaining | Voice | Upward, lateral, or downward | Individual | Dissatisfaction | Expression of dissatisfaction, whether subjectively experienced or not, for the purpose of venting emotions or achieving intrapsychic goals, or both (Kowalski, 1996, p. 179). |
| | Organizational citizenship behavior (OCB) - voice | Voice | Upward, lateral, or downward | Individual | Extra-role improvement | Discretionary behavior that entails expressing work-related ideas, information, or opinions, based on cooperative motives (i.e., prosocial voice; van Dyne et al., 2003). |
| | Organizational citizenship behavior (OCB) - silence | Silence | Upward, lateral, downward, or external | Individual | Prosocial silence | Discretionary behavior that aims on benefiting other people in the organizations by withholding work-related ideas, information, or opinions based on altruism or cooperative motives (van Dyne et al., 2003, p. 1368). |

Source: adapted from Brinsfield et al. (2009)

Fig. I-15: Second wave continued - relevant voice and silence concepts in organizations

| | Concept | Voice or Silence Focus | Direction | Level of Analysis | Situation or Event | Notable Definition or Description |
|--|-------------------|-------------------------------|----------------------|--------------------------|---|--|
| Second Wave (mid-1980s to 2000) | Social ostracism | Silence | Lateral and downward | Individual and group | Exclusionary intent | The act of being excluded or ignored, commonly referred to as the "silent treatment" (Williams, 2001). |
| | Deaf ear syndrome | Silence | Upward | Individual | Organizational failures to respond in a positive way to employees' complaints | In organizations, norms developed that discourage employees from openly and directly expressing their dissatisfaction (Peirce et al., 1998). |

Source: adapted from Brinsfield et al. (2009)

Fig. I-16: Third wave - relevant voice and silence concepts in organizations

| | | | | | | |
|--|------------------------|---------|--|--------------|---|---|
| Third Wave (2001 - mid-2000s) | Organizational Silence | Silence | Upward | Organization | Organizational-wide silence norms | A collective-level phenomenon in which employees withhold information, opinions, or concerns regarding work-related problems or issues (Morrison & Milliken, 2000). |
| | Employee Silence | Silence | Upward | Individual | Based on fear, apathy, or prosocial motives | Withholding of any form of genuine expression about the individual's behavioral, cognitive and/or affective evaluations of his or her organizational circumstances to persons who are perceived to be capable of effecting change or redress (Pinder & Harlos, 2001, p. 334). |
| | Job withdrawal | Silence | Upward | Individual | Feelings of hopelessness | Believing that speaking up is futile, employees are compelled to disengage and to withdraw (Pinder & Harlos, 2001). |
| | Employee voice | Voice | Upward, lateral, downward, or external | Individual | Intentional employee expressive behaviors | A broad term encompassing all forms of employee speaking-up behavior, differentiating by the nature of the stimulus in response to which one is speaking-up and by the underlying intent of the communication (Brinsfield et al., 2009, p. 7). |

Source: adapted from Brinsfield et al. (2009)

Fig. I-17: Current Wave - Relevant voice and silence concepts in organizations

| | Concept | Voice or Silence Focus | Direction | Level of Analysis | Situation or Event | Notable Definition or Description |
|---------------------------------------|--|-------------------------------|--|-----------------------------------|---|--|
| Current Wave (2006 - 2019) | Climate of silence | Silence | Lateral | Group or organization | Due to mistreatment, fear, or hopelessness | Widely spread perception among employees that speaking up about problems or issues is futile and/or dangerous. When such climate exists, the dominant response within an organization will be silence, rather than voice. (Morrison & Milliken, 2000, p. 708). |
| | Subordinate improvement-oriented voice | Voice | Upward | Individual and group | Communication of change-related ideas and improvements | Speaking up in ways that seek to challenge or replace the established practices, policies, or strategic direction that comprises the status quo among those individuals who created or otherwise stain those aspects of the organization. Burris (2012). |
| | Acquiescent silence | Silence | Upward, lateral, downward, or external | Individual, group or organization | Opinions are not valued and sought by supervisors | Passive withholding of relevant ideas, based on submission and resignation. (Knoll & Dick, 2013, pp. 350–351). |
| | Quiescent silence | Silence | Upward, lateral, downward, or external | Individual, group or organization | Self-protective mechanism due to fear | Disagreement with one’s circumstances and suffering in silence while being aware of existing alternatives to change the status quo, yet willing to explore them. (Pinder & Harlos, 2001, p. 348). |
| | Prosocial silence | Silence | Upward, lateral, downward, or external | Individual, group or organization | Protection of own identity; or driven by altruism, need for belonging | Withholding of work-related ideas, information, or opinions with the goal of benefiting other people or the organization – based on altruism or cooperative motives. (van Dyne et al., 2003, pp. 1367–1368). |
| | Opportunistic silence | Silence | Upward, lateral, or downward | Individual, group or organization | Achieving advantages for oneself (power, status, avoiding extra workload) | Withholding of or provision of incomplete or distorted information, with the purpose to mislead, disguise, or confuse. (Knoll & Dick, 2013, p. 351). |

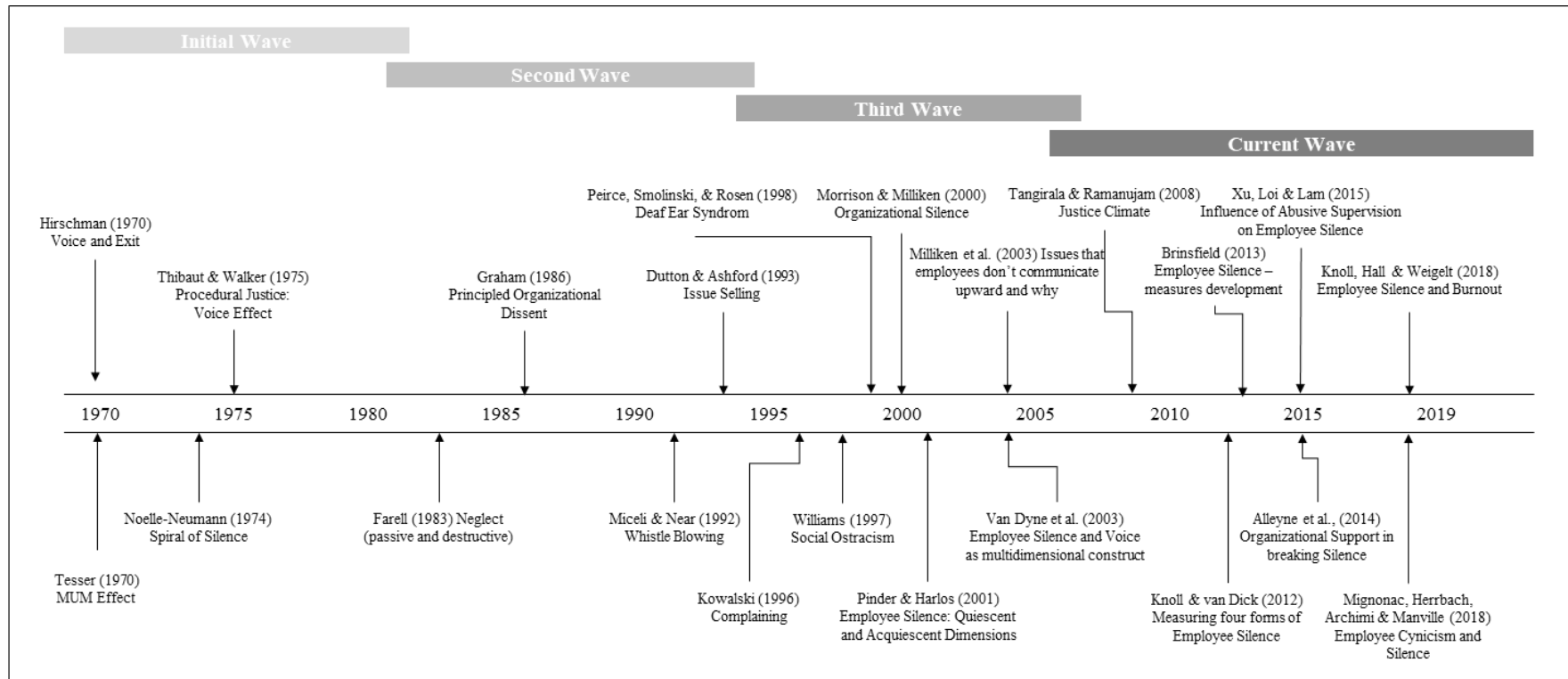
Source: own creation

I.3.2 Foundations and Waves of Voice and Silence

The next chapter outlines the key concepts of voice and silence into more detail. As illustrated in the previous chapter, both phenomena can be traced back for more than 50 years, owning a quite comprehensive research body. The concepts themselves can be assigned to different historical waves in which they appeared or from which they vanished due to different research foci and development processes. The results of this literature review are categorized in a chronological manner (see Figure I-18), which includes four distinct waves, covering the time span from 1970 up to 2019. The (1) *initial wave* is covering research conducted from 1970 until the mid-1980s, followed by the (2) *second wave* focusing on research from the mid-1980s until 2000. The (3) *third wave* is heralding the actual *research spring* of the silence concept by yielding central publications between 2000 and 2005. The (4) *current (fourth) wave* captures the latest research achievements conducted between 2006 and 2019. As outlined, the review of the first three waves (1970-2005) is based on and adjusted to the prework of Brinsfield et al. (2009). However, their review considers only research from 1970 to 2005. To date, there exists no literature review filling the gap of the last 15 years, in which research efforts and publications around silence continuously increased. This literature review aims at filling this relevant gap and contributing to the work of Brinsfield et al. (2009) by adding fruitful insights from a contemporary perspective. The wave metaphor should reflect the beginning and end of all four waves on a timeline, consistent with the introduction of certain voice and silence concepts. It should be mentioned in this context that no clear temporal boundary can be drawn between the waves as the transition from one to another is rather fluent than abrupt. The fact that all concepts appear in a certain period and are assigned to one wave does not imply that they are independent from all the other concepts and that their relevance is bound to just one instant of time. Quite the contrary, certain concepts are building up upon each other and could not exist without the preliminary work. Hence, different

foci can be found in each wave as the wave metaphor is just a beneficial way of clustering literature reviewed and to put it into a logical time context.

Fig. I-18: Relevant voice and silence concepts in organizations – chronical overview



Source: adapted from Brinsfield et al. (2009)

(a) *Initial Wave*

The initial wave covers research conducted in the time frame from the 1970s to the mid -1980s. Within that period, multiple different forms of voice and silence have been rather acknowledged than fundamentally examined by social researchers. Studies focused on individual's behavior in the context of organizational change (e.g. exit and voice), but also on the concept of loyalty, the MUM effect as well as the spiral of silence and organizational learning.

Organizational change and loyalty

Much of the existing research on voice and silence is based on the *exit, voice, and loyalty (EVL) model* of Hirschman (1970). The model suggests that exit, voice, and loyalty can be considered as responses to organizational dissatisfaction. Hirschman (1970) describes how individuals in formal organizations react to a decline in organizational performance. In that context, individuals can respond to the dissatisfaction in primarily two different ways. On the one hand, they can use the option of *exit* (permanent leaving of the organization) or *voice* (complaining and trying to improve the situation by initiating change). Hirschman (1970) defined *voice* more precisely as

“any attempt at all to change rather escape from an objectionable state of affairs, whether through individual or collective petition to the management directly in charge, through appeal to a higher authority with the intention of forcing a change in management, or through various types of actions and protests, including those that are meant to mobilize public opinions” (p.30).

The second choice, *exit* has been defined as

“some customers stop buying the firm's products or some members leave the organization” (p.4).

The third reaction of individuals introduced is *loyalty* (supporting the organization by using voice when exit is available), which has a mediating or conditioning effect on exit and voice. With regards to voice, loyal members of the organizations are more likely to raise their voice to improve the situation of dissatisfaction, whereas disloyal employees leave the organization and do not attempt to improve the situation given. Additionally, Rusbult et al. (1982) and Farrell (1983) introduced *neglect* (passive disengagement and lethargy) as a further variable to react to discontent in organizations and define it as “lax and disregardful behavior among workers” (Farrell, 1983, p. 598). Based on the typology developed by Farrell and Rusbult (1992, p. 203), *voice* (active reaction) and *loyalty* (passive reaction) are considered constructive reactions, whereas *exit* (active reaction) and *neglect* (passive reaction) are more destructive. Subsequently, Boroff and Lewin (1997) drew a conceptual and empirical analysis on the EVL model to develop a model of employee voice defined as the frequency of grievance filing as well as the intention of employees to leave the organization. They were able to show that especially unfairly treated and therefore less loyal employees rather tended to exercise their voice or intended to quit the organization. In contrast, loyal employees experiencing unfair treatment at the workplace rather suffered in silence. The results provided are in line with the definition of loyalty (passive/constructive) by Hirschman (1970) and Farrell and Rusbult (1992). With respect to the phenomenon of silence, Bruneau (1973) was the first researcher defining three distinct forms of silence: *psycholinguistic silence*, *interactive silence* and *sociocultural silence*. These types of silence were discussed from an psycholinguistic point of view and referred to the later developed concept of ostracism, where silence is defined as the *silent treatment* by Williams (2001). To summarize, already in the 1970s, while Hirschman (1970) and Bruneau (1973) focused mainly on describing voice behavior in organizations, they also examined profound forms of silence (e.g. loyalty as passive behavior). This opened triggered further mainly conceptually-based studies on voice and silence. However, multiple recent publications examining voice and silence are using these first developments in their research rational (e.g.

MacGregor & Stuebs, 2014; Monzani et al., 2016; Tangirala, S., & Ramanujam, R., 2008; Whiteside & Barclay, 2013) and hence opened the stage for further examinations.

The MUM Effect

At the same time of the emergence of Hirschman's study (exit, voice, loyalty) in the field of organizational science, other researchers contributed to the investigation of voice and silence from a more social psychological perspective. Most prominently, Rosen and Tesser (1970) investigated reasons for individuals remaining silent or speaking out about certain issues or concerns and termed the rationale behind this behavioral observation the *MUM effect*. The acronym stands for "keeping Mum about Undesirable Messages to the recipient" (Rosen & Tesser, 1970, p. 254). Within their studies, researchers argued that people are more reluctant to express negative than positive information as it is linked to discomfort associated with being the conveyer of bad news (Conlee & Tesser, 1973b; Milliken et al., 2003; Tesser, 1988). This common sense notion has been supported by several studies (e.g. Athanassiades, 1973; Read, 1962; Roberts & O'Reilly, 1974) showing that employees feel uncomfortable communicating negative information (e.g. problems, issues, concerns) to their supervisors and distort the information to reduce the implicit level of negative information. Additionally, the hierarchical relationship between the supervisor and follower proved to increase the MUM effect, especially depending on status and power (Milliken et al., 2003). These observations provided support to the explanation around why individuals do not speak up and rather stay silent about concerns and issues within the working context. The reasons for the perceived discomfort can be explained inter alia by fear of compromising the recipient's relationship (Morran et al., 1991) and to be disadvantaged by potential punishments resulting from the communication of negative information (Tesser & Rosen, 1972). It is important to mention that the MUM effect does not merely apply to upward communication only. Researchers such as

Benedict and Levine (1988) and Ilgen and Knowlton (1980) showed within their studies that especially low performers received their feedback later as supervisors inclined to delay or to distort the information given, or even tried to avoid the feedback sessions. Moreover, leaders also tend to delegate sharing bad news, while providing good news themselves (Rosen & Tesser, 1970). In recent years, the MUM effect as a self-protective behavior also helped explaining the existence of silence in the organizational context and supported the development of scales for measuring sub-constructs of silence such as quiescent (defensive) and prosocial silence (e.g. Knoll & Dick, 2013; van Dyne et al., 2003). Researchers of information systems (IS) could also benefit from the MUM effect to better understand the factors (personal and situational) influencing negative information reporting (e.g. ChongWoo Park et al., 2008; Park & Keil, 2009).

The Spiral of Silence

In 1974, Noelle-Neumann (1974) provided evidence with her concept of the *spiral of silence* (a theory of public opinion) to the statement of Tocqueville (1866) analyzing the French revolution and the church:

“more frightened of isolation than of committing an error, they joined the masses even though they did not agree with them” (Tocqueville, 1866).

Within her research on the theory of public opinion, Noelle-Neumann (1974, p. 43) empirically investigated the process of public opinion development which evolves from the interaction of individuals with their social environment. Thereby, her research contributed to the voice and silence literature. According to the spiral of silence concept, the individual’s perception of the distribution of public opinion has an impact on one’s willingness to express information in a public setting by constantly monitoring their environment (using a quasi-statistical sense) (Salmon & Oshagan, 1990, p. 567). This reasoning suggests that in certain situations in which the current or future climate of opinion is perceived as hostile to their own

opinions, individuals tend to remain silent and avoid speaking out (Glynn et al., 1997; Noelle-Neumann, 1974). This is often caused by the fear of being isolated and by self-doubt. Therefore, being not isolated from the majority or a certain group is more important than standing for the own opinion (Salmon & Kline, 1983). The spiral of silence gains more momentum as individuals in these situations are more reluctant of speaking their own opinion and hence reinforce the perception of the weak support of their own opinion.

The theory was tested in different ways and applied to various situations to investigate the impact of fear of isolation on one's willingness to speak out their own opinion (e.g. Clemente, M., & Roulet, T. J., 2015; Glynn & McLeod, 1984; Neuwirth et al., 2007; Salmon & Neuwirth, 1990). Interestingly, within their meta-analysis, Glynn et al. (1997) reported that existing literature only provides little support for the assertion that perceived support for one's opinions has an influence on the willingness to also express those opinions. A reason for this contradiction might be the fact that the survey-based studies relied on survey instruments that were not capable of measuring the spiral of silence concept. According to Neuwirth et al. (2007), the small effect is due to the fact that most studies focused on measuring speaking out behavior, whereas the inherent logic of the spiral of silence concept is based on not-speaking-out-behavior. This highlights again the fact that not-speaking-out-behavior (silence) is not just simply the opposite of voice behavior but holds its own antecedents and is multidimensional. In addition, Bowen and Blackmon (2003) stated that there might arise a second, vertical spiral of silence on a rather micro level within workgroups and the organization. They argued that due to a negative climate of opinion, employees are afraid of expressing their own opinions and remain silent, which can become contagious in organizations and cause a toxic environment of silence. To avoid silence on an organizational level, creating social cohesion, building trust and creating attachment towards the workgroups is necessary (Bowen & Blackmon, 2003, p. 1394).

Organizational learning and sharing of knowledge

The ability to *learn* is central for organizations as the company's environment is characterized by high levels of uncertainty and change with effects on the macro and micro level of organizations (Edmondson & Moingeon, 1998, p. 5). However, these change processes can cause resistance among employees due to various psychological and organizational reasons. Identifying the sources of resistance and their manifestations (e.g. withholding relevant information required in the change process) is central for scholars in the research area of organizational learning and knowledge sharing. In that sense, Edmondson and Moingeon (1998, p. 12) defined organizational learning as

“a process in which an organization's member actively use data to guide behavior in such a way as to promote the ongoing adaptation of the organization” (Edmondson & Moingeon, 1998, p. 12).

They also highlighted that organizational learning is not static but can be initiated, developed and practiced. Still, this requires that existing knowledge and information are shared vertically but also horizontally within organizations.

However, Argyris (1977) already outlined almost ten years before within their publication about double loop learning in organizations that employees are reluctant to share information with their supervisors especially concerning problems or issues. They argued that powerful norms and defensive routines often prevent employees to communicate what they know (Milliken et al., 2003, p. 1455). This results in silence behavior driven by fear (e.g. of receiving bad feedback) and prevents the entire organization and its employees from learning opportunities (see also Morrison & Milliken, 2000). Edmondson (2003) provided support for this claim by examining learning in interdisciplinary action teams. The results of the empirical study conducted in 16 operating rooms revealed that speaking up behavior enabled by the leader and boundary spanning were associated with the adaption of new practices in teams. Additionally, teams that felt more comfortable about

speaking out their questions, concerns, or observations were able to adopt new routines more efficiently (Edmondson, 2003, p. 1446). In 2009, Blackman and Sadler-Smith (2009) contributed to the field of organizational learning by providing a taxonomy of silence comprised of multiple ways of knowing (tacit, intuitive, insightful, pre-conscious) and voice based on a review of the concept of Polanyian notion of tacitness and its relation to silence. They concluded that most organizations own an untapped reserve of potential tacit knowledge that represents an invisible dimension of human capital and this

“vein of potential source of competitive advantage may be accessed and leveraged and used to imagine a more desirable future and collectively “invent” ways of achieving it” (Blackman & Sadler-Smith, 2009, p. 581).

To summarize, multiple concepts investigating voice and silence emerged in the 1970s and were discussed in this chapter (organizational change, loyalty, MUM effect, spiral of silence, and organizational learning and knowledge sharing). These very early research efforts can be considered as pioneering and the foundation for further concept developments in decades after. These concepts provided important insights in the manifestations of voice and silence but also remained very limited. The EVLN construct by Hirschman (1970) and Rusbult et al. (1982), or the spiral of silence theory revealed that the underlying concepts of silence and their distinct parameters are way more complex and multidimensional than previously thought. Studies in this period were only able to create a sense for this complexity but could not yet clearly describe or even demonstrate it in a differentiated manner. However, the second wave (mid-1980s till 2000) aimed at exactly expanding this perspective.

(b) Second Wave

Building up on the developments and achievements of the initial phase (1970s until mid-1980), the *second wave* from the mid-1980s until the year of 2000 sub-

stantially extended the knowledge and insights of voice and silence with new concepts. In this phase, concepts such as whistle-blowing, principled organizational dissent, issue-selling, social ostracism, or the deaf ear syndrome emerged. Analyzing the focus of those concepts, especially the deaf ear syndrome and social ostracism, contributed considerably to the silence research body. However, other concepts such as organizational justice and organizational citizenship behavior were also explored at the end of the 1990s, as they are very relevant in the scope of voice and silence behavior due to their pre-existing conceptualization. Overall, the achievements of this period provided the necessary foundations for the groundbreaking research that has been done in the time period after, especially on the silence phenomena.

Whistle-Blowing

Motivated by a lack of sound theoretical and empirical support, Near and Miceli (1985) proposed a model of *whistle-blowing* process based on theories and motivation and power relationships. The theory development process of Near and Miceli (1985) was accompanied by several corporate and governmental scandals in the United States and aimed at investigating under which conditions and for which reasons individuals would bring unethical behavior in organizations to word. In that context, whistle-blowing is defined as

“the disclosure by organization members (former or current) of illegal, immoral or illegitimate practices under the control of their employers, to persons or organizations that may be able to affect action” (Near & Miceli, 1985, p. 4).

This definition was also used in further studies examining the concept of whistle-blowing (e.g. Barry, 2007; Miceli & Near, 1992; Perry, 1992). Researcher such as LePine and van Dyne (1998) also showed that prohibitive behavior such as whistle-blowing is distinct from voice behavior. Voice behavior intends to be construc-

tive and aims at improving situations whereas whistle-blowing involves criticism and focus on stopping activities (Miceli & Near, 1992). Additionally, whistle-blowing refers to ethical aspects, whereas voice behaviors concerns mainly expressing ideas and opinions in the working context. The concept of whistle-blowing was widely researched empirically. Several studies examined the relationship between the employee decision expressing (voicing) observed wrongdoing in the organization and certain organizational variables (e.g. reaction of organization authorities, punishment, costs associated with inaction) (Miceli & Near, 1985, 1992). Other researchers focused on other aspects related to whistle-blowing, such as the development of a conceptual framework showing that whistle-blowing is a form of prosocial behavior (Dozier & Miceli, 1985, p. 823), investigating the fact that whistle-blowers receive seldom rewards but rather discharge and retaliation for their behavior (MacNamara, 1991; Miceli & Near, 1989), the situational and organizational variables associated with whistle blowing (Brabeck, 1984; Near & Miceli, 1996), and the formation process of the concept of whistle-blowing itself (Near & Miceli, 1995). More recently, literature revealed that situational characteristics (e.g. nature of perceived wrongdoing, organizational culture) have a higher impact on whistle-blowing than personal characteristics (e.g. age, gender, tenure) (Brinsfield et al., 2009; Miceli & Near, 2005). Moreover, the likelihood of not remaining silent about the wrongdoing correlates with the sobriety of the wrongdoing itself and with the likelihood that the wrongdoing is being terminated (Miceli & Near, 2005). Therefore, whistle-blowers carefully weigh associated costs when deciding to speak up or remaining silent about concerns or issues (Miceli & Near, 1992; Milliken et al., 2003).

In 2009, Park and Keil (2009) merged the theoretical work in the field of organizational silence from Morrison and Milliken (2000) with the whistle-blowing model adopted from Dozier and Miceli (1985) to gain a new promising conceptual lens. Using a payroll experiment, the researchers showed that all three factors investigated (organizational structures/policies, managerial practices, degree of demo-

graphic dissimilarities between employees and supervisors) contributed to a climate of silence, and hence directly and indirectly impacted the willingness of employees to report wrongdoing behavior (Park & Keil, 2009, p. 901). In addition, MacGregor and Stuebs (2014) linked blowing the whistle with the concept of fallacious silence. Using the fraud triangle and models of moral behavior, the empirical results of MacGregor and Stuebs (2014) showed evidence that certain factors motivate individuals to rationalize fallacious silence, which is related to community influence and personal traits (e.g. awareness, moral competence). These studies confirmed the claim of Hewlin (2003) that silence contains a subset of class behaviors, including expressive (e.g. whistle-blowing, issue selling, principled organizational dissent) and suppressive (e.g. employee silence, exit) choices of employees' communication and stresses the distinction between voice behavior and whistle-blowing.

Principled organizational Dissent

In the mid-1980s, the concept of *principled organizational dissent (POD)* emerged as another concept in the field of expressive communicative choices of employees (Graham, 1986). POD can be described as the protests of employees against unethical or immoral actions of the workgroup (Graham, 1986; Tangirala, S., & Ramanujam, R., 2008). In his primary work, Graham (1986) provided a typology of different types of POD that included six unique forms. Four of these six forms are based on voice behavior:

- (1) *internal stay* – protesting and initiating internal change by applying only internal channels.
- (2) *internal leave* – communication the reasons for leaving the organization.
- (3) *external stay* – protesting or initiating internal change by exerting external pressure.
- (4) *external leave* – leaving the organization by applying public protest.

Following Graham (1986), external stay and external leave both represent forms of whistle-blowing. More interestingly, two of the six types of POD constitute silence behavior, with a result that employees either remain silently in the organization or leave quietly. The latter two forms of POD can be rather assigned to suppressive communicative choices than expressive.

Organizational Justice

The term *organizational justice* was first introduced by Greenberg (1987) and referred to the perception of fairness of employees in organizations. In this context, Greenberg (1987) developed a taxonomy of organizational justice theories by categorizing them with respect to a reactive-proactive and a process-content dimension. Already in the mid-1980s but also in present time, organizational justice and its subset of four distinct dimensions – distributive justice, procedural justice, interpersonal justice, informational justice (Greenberg & Colquitt, 2005) – play an important role in understanding the phenomenon of voice and silence in organizations. With regards to voice literature, Greenberg (2000) provided some findings that being heard (voice effect) in organizations has a positive impact on the individual's perception of procedural fairness as the speaking out opportunity allows employees to impact the outcome (instrumental explanation) (Greenberg & Folger, 1983). Lind and Tyler (1988) further stated that offering employees the chance to express their voice also reflects the organization's trust and value for them. In addition to voice, organizational justice is also associated with silence.

In similar vein, Morrison and Milliken (2000, p. 720) highlighted that fair procedures that allow for employee voice are perceived more positively. Just one year later, Pinder and Harlos (2001) investigated employee silence (quiescent and acquiescent silence) as a response to perceived injustice. Within their developed model, they aimed at explaining (a) why employees that have been mistreated become silent (interpersonal mistreatment), (b) by which measures silence can be broken, and (c) how organizational factors (e.g. power differences between victims

and causer) produce a climate of injustice and hence even reinforce silence behavior. Results show that workplace injustice provokes quiescent and acquiescent silence because employees disagree with their circumstances and therefore decide to suffer in silence (Pinder & Harlos, 2001, p. 348).

In subsequent years, several researchers set out to provide empirical evidence for the potential link between silence and organizational justice. However, over the last decade, the topic of organizational justice became more prominent and popular within the silence research. Tangirala, S., & Ramanujam, R. (2008) investigated through empirical research the impact of cross-level effects of procedural justice climate on employee silence. They found out that procedural justice climate was moderating the effect of individual antecedents of employee silence (workgroup identification, professional commitment, individual procedural justice perceptions, perceived supervisory status). Moreover, effects of antecedents that included employee silence were stronger when procedural justice climate was higher (Tangirala, S., & Ramanujam, R., 2008, p. 37). Just two years later, Walumbwa et al. (2010) also built up their research on justice climate on the outcomes of Tangirala, S., & Ramanujam, R. (2008), outlining that procedural justice climate has an impact on the decisions of employees to withhold critical work information (i.e. employee silence) than rather expressing them.

As one of the first empirical studies, Whiteside and Barclay (2013) investigated employee silence (acquiescent silence, quiescent silence) as a mediator between overall justice and employee outcomes (e.g. emotional exhaustion, physical withdrawal, performance). The researchers focused on filling the gaps in the understanding of the antecedents of employee silence as well as the implications of engaging in silence for employees (Whiteside & Barclay, 2013, p. 251). Both experimental studies and a field survey indicated that overall justice is a significant predictor of quiescent and acquiescent silence in organizations. In addition, employee silence also had an impact on employee outcomes such as emotional exhaustion, psychological and physical withdrawal, and performance (except quiescent si-

lence) – beyond just merely withholding relevant information (Whiteside & Barclay, 2013, p. 251).

One of the latest research performed dealt with the mediating role of silence motivation on employee silence behavior, perceived supervisor support and perceived procedural justice (Jo & Yoo, 2014). In the context of organizational justice, the results of a survey conducted among Korean companies revealed that perceived procedural justice is negatively related with employee silence behavior. Consequently, recent scholars also demonstrated that organizational justice (especially procedural justice) plays a central role when aiming at preventing silence in organizations or dealing with breaking an already existing climate of silence.

Issue Selling

Next to organizational justice, the concept of *issue selling* to the top management is equally relevant in the context of voice and silence. Dutton and Ashford (1993) stated that issue selling

“refers to individual’s behaviors that are directed toward affecting others’ attention to and understanding of issues” (p. 398).

The concept itself is especially relevant in early stages of decision-making processes in organizations and can be categorized the following: (1) issue selling as upward influence (Kipnis et al., 1980; Mowday, 1978), (2) issue selling as claiming behaviors – following the social problem theory (Schneider, 1985; Spector & Kitsuse, 2017), and (3) issue selling as impression management (Schlenker, 1980; Tedeschi, 2013). All three different perspectives were integrated into a central framework provided by Dutton and Ashford (1993) and were examined by focusing particularly on the issue selling of middle managers in organizations, meaning that they are supervising other employees but are also supervised themselves. According to Dutton and Ashford (1993) this leads to the conclusion that

“middle managers can attempt to direct top management’s attention by providing or concealing important information about issues, by fram-

ing the issues in particular ways, and by mobilizing resources and routines that direct to managers' attention to some issues and not others" (1993, p. 398).

The fact that middle managers are operating at the intermediate of the corporate hierarchy and fear the damage of their image by raising certain issues (Ashford et al., 1998) could explain why some decide to remain silent. In a favorable context in which a culture of support and *listening* (management openness) as well as a *climate of psychological safety* is prevailing, the likelihood of issue selling is much less pronounced (Dutton & Ashford, 1993). On the other side, the decision of remaining silent is influenced by the perceived organizational support, norms and the relationship quality with the supervisor (Ashford et al., 1998; Milliken et al., 2003). In this context, the conceptualizations of underlying motives of employee silence (such as defensive, acquiescent, quiescent, prosocial or opportunistic silence (Knoll & Dick, 2013; van Dyne et al., 2003) can contribute to explain the complex psychological process associated with the concept of issue selling and its shaping. The relevance and importance of the concept of issue selling was raised multiple times in the silence literature (Detert & Burris, 2007; Milliken et al., 2003; Morrison & Milliken, 2003; Tangirala, S., & Ramanujam, R., 2008) but has received very little attention so far.

Organizational Citizenship Behavior (OCB)

All concepts introduced so far showed a negative connotation with speaking or non-speaking up behavior (e.g. complaining, whistle-blowing). In contrast to raising voice about critical work issues, wrongdoing or organizational problems, other concepts were examined by researchers in a more positive manner, such as organizational citizenship behavior (OCB). According to Organ (1988, p. 295), OCB is defined as

“individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system” (Organ, 1988, p. 295).

Therefore, it is characterized by altruism (e.g. helping others in organizations), conscientiousness (e.g. extra-role behavior beyond the minimum required levels), sportsmanship (e.g. refraining from complaints or petty grievances) and courtesy (e.g. making efforts to prevent or to mitigate problems) (Organ, 1988, p. 295). Additionally, van Dyne and LePine (1998, p. 108) stated that extra-role-behavior (OCB) is positive and discretionary and is “not a source of punitive consequences when not performed by job incumbents”. Consequently, OCB does not involve negative consequences when individuals fail to perform them.

In a similar vein, Smith et al. (1983) argued that OCB also includes making “innovative suggestions to improve the department” and Moorman and Blakely (1995) complemented that an employee performing OCB “frequently communicates to co-workers suggestions on how the group can improve”. These definitions are very relevant as they have clear parallels to the definition of voice as a promotive and distinct form of prosocial behavior according to van Dyne and LePine (1998). Results of their study revealed that supervisors, peers, and employees differentiated in-role from extra-role behavior, but more interestingly in two related forms of promotive extra-role behavior: helping and voice.

In contrast to voice behavior, OCB was also discussed in the context of employee silence and in reference to prosocial forms of employee behavior. In that sense, prosocial silence is defined as

“withholding work-related ideas, information, or opinions with the goal of benefiting other people or the organization – based on altruism or cooperative motives” van Dyne et al. (2003, p. 1368).

Like OCB, prosocial silence is intentional, proactive, and as a discretionary behavior (i.e. not mandated by the organization) focused on others. In contrast to defensive silence, prosocial silence is driven by awareness, consideration, and by con-

cerns for others, rather than by fear of negative consequences resulting from speaking up (van Dyne et al., 2003, p. 1368). Hence, prosocial motives and certain conditions affect employees to remain silent to benefit co-employees or their organization. To that date, OCB was not investigated much in the study of voice, and especially in silence.

Social ostracism

In the previous section, OCB was discussed as a prosocial behavior which can explain why employees decide to remain silent for prosocial motives. Conversely, silence can also be applied as a “silent treatment”, one of many social behaviors that were subsumed under the category of ostracism which is defined as

“any act by one or more source individuals that is intended or perceived as ignoring and rejecting one or more target individuals (...) and is a historically ubiquitous phenomenon found across cultures, species, groups sizes, and age groups” (Williams et al., 1998, p. 119).

Social ostracism has a rich research past (Williams, 2007) but has been quite ignored for a long time within the organizational science. With respect to the silence context, Williams et al. (1998) conducted two studies investigating social ostracism as silent treatment. Both studies aimed at listing behaviors and feelings when giving the silent treatment, as well as posing behaviors when receiving the silent treatment. The study comprised 48 undergraduate students and revealed a total amount of 152 unique listed behaviors. The five most frequently listed behaviors included not making eye contact (73%), not talking (54%), making a definite effort to ignore (42%), trying to avoid all contact (40%), and not responding to any questions or comments (40%) (Williams et al., 1998, p. 129). Other studies conducted by Williams et al. (2000) and Sommer et al. (2001) examined the effects resulting from social ostracism and the silent treatment. Next to poor psychological func-

tioning, the effects also included threats to belongingness and self-esteem, withdrawal and resentment.

Referring to the concept of silence, social ostracism can be considered as an example of organizational silence or as a certain behavior that induces silence. Following Brinsfield et al. (2009), social ostracism can also include a strategic component where employees decide to intentionally withhold relevant information about critical work issues. Although this follows the definition of employee silence, it also differs from it in concrete ways. Compared to the underlying motives of silence (being purposefully and constructive), motives of the *silent treatment* (social ostracism) rather focus on ignoring and excluding other individuals. However, this also shows that silence appears in multiple facets and can be used as a tool to assert power and for causing distress in a socially unacceptable manner (Brinsfield et al., 2009).

Deaf Ear Syndrome

In contrast to social ostracism, researchers such as Peirce et al. (1998) investigated why organizations are slow or fail in responding to internal complaints of employees to multiple incidents, such as sexual harassment. The failures of organizations to respond to complaints was defined as the *deaf ear syndrome*. This concept helps understand why employees do not engage in speaking up behavior and remain silent under certain circumstances. The review of Peirce et al. (1998, p. 41) revealed that three themes are linked to the deaf ear syndrome which prevents employees to engage in speaking up and in expressing dissatisfactions:

- (1) inadequate organizational policies and procedures for managing complaints,
- (2) managerial reactions and rationalizations to act in the face of complaints,
and
- (3) inertial tendencies or deafness.

Harlos (2001) examined within a study whether organizational voice systems (e.g. open door policies, suggestion boxes, grievance procedures) are causing what they actually try to prevent: exacerbating the employees' perception of unfairness, discontent and frustration. The results of the qualitative study showed that especially the experiences of workplace injustice provided evidence for the deaf ear syndrome and frustration effects. Harlos (2001) also stated that many discrepancies between the system policies implemented and the actual practice are existing in organizations. Employees expect certain concrete reactions when using these formal systems and raising their voice. In addition, employees even considered the effectiveness of voice systems as a part of their psychological contract with the organization (Rousseau, 1995). Therefore, when implicit promises of taking complaints seriously get violated, employees rethink their employment relationship critically and tend to do not use the systems available – and rather remain silent and refrain from communicating their complaints. To fulfill the expectations of the employees, key attributes such as safety (i.e. protection from retribution), credibility (i.e. objectivity, neutrality), accessibility (i.e. variety and ease of use), and timeliness of outcomes of voice systems are crucial (Harlos, 2001, p. 335).

To summarize, the chapter presented concepts mainly dealing with speaking up behavior such as whistle-blowing (Miceli & Near, 1985), principle organizational dissent (POD) (Graham, 1986) and issue selling (Dutton & Ashford, 1993) as expressive communication choices of employees within the time frame from the mid-1980s until 2000. In addition, the fact of being heard and not receiving negative consequences for one's voicing behavior were discussed and are very central to the concepts of organizational justice (Greenberg, 1987), organizational citizenship behavior (OCB) (Organ, 1988) and the deaf ear syndrome (Peirce et al., 1998). All these concepts can increase or decrease speaking up behavior among employees. Especially the concept of social ostracism (Williams et al., 1998) pointed out that voice behavior needs to be clearly separated from silence behavior as they are based on different underlying motives. The concepts of the *silent treatment* (social

ostracism) and the deaf ear syndrome opened the door for more concrete research in the field of silence, as both concepts are built on the hypothesis that individuals choose silence consciously and use it as a tool to assert power for excluding other individuals (social ostracism) or ignoring complaints within the organization (deaf ear syndrome). These developments have encouraged scholars to conduct more research to find out under which conditions (antecedents and effects) employees decide to remain silent about organizational issues and how silence can be broken.

(c) Third Wave

The next chapter focuses on recording the research efforts that have been made to create a better understanding of voice and silence and the associated challenges. Starting 2000, the topic of voice and especially silence has received way more attention, initiated by the groundbreaking publications of Morrison and Milliken (2000) on organizational silence as a barrier to change and development in a pluralistic world and the publication of Pinder and Harlos (2001) on the concept of employee silence. As the popularity and research interest on silence was growing, a special issue on silence was published by the *Journal of Management Studies* (Volume 40, Issue 6, 2003), comprising multiple studies examining silence behavior. As shown in the descriptive part of this literature review, multiple publications on silence were printed in high ranked journals such as *Academy of Management Review*, *Health Service Research* and *Personal Psychology*. According to Brinsfield et al. (2009), most of the research conducted in the third wave considers the phenomenon of silence meaningful and clearly distinguishes silence from voice behavior as more than just the absence of voice due to different underlying motives. However, up to this point, just little research had been performed investigating the antecedents, dependent variables, or moderating effects of silence. Additionally, a clear construct development and operationalization as well as empirical research was still missing. Therefore, the next chapter aims at reviewing major developments of silence between 2000 and 2005. This includes the work of

Morrison and Milliken (2000) introducing organizational silence and Pinder and Harlos (2001) focusing rather on the individual level of silence (employee silence). Based on the concept clarification other concepts such as job withdrawal and employee voice will also be outlined.

Organizational Silence

In contrast to the phenomenon of silence, speaking up or voice behavior has been researched over the last decades comprehensively and from multiple perspectives. Concepts such as social ostracism or the deaf ear syndrome (see last chapter) indicated that silence is more than just the contrary or the absence of voice. Up to this point, however, there has been a lack of scientific research to clearly delineate both concepts – voice and silence – from one another. This also would require a profound understanding of the phenomenon of silence, which was inexistant until that point. In this context, the groundbreaking work of Morrison and Milliken (2000) can be considered as a key turning point and features the acknowledgement of silence that was not existing in the field of organizational science so far. The researchers argued

“that there are powerful forces in many organizations that cause widespread withholding of information about potential problems or issues by employees” (Morrison & Milliken, 2000, p. 706).

This collective-level phenomenon was defined as *organizational silence* and differs substantially from other existing bodies of research such as employee voice, issue selling, and whistle blowing as these concepts focus on the individual-level dynamics and focus on explaining why employees violate the norm of silence in organizations (Morrison & Milliken, 2000, p. 707). In addition, the motivations, and forces for employees to speak up are different from the ones that compel employees to remain silent. Within their research work, Morrison and Milliken (2000) created a model by identifying organizational and contextual variables inducing a

climate of silence on the one hand, and also exploring the collective sensemaking dynamics leading to the perception that speaking up is (a) not worth the effort and (b) associated with negative consequences. These variables are located outside of the individual actor, such as organization-wide norms, structures and policies, top management, team characteristics, managerial practices, or the managers' fear of negative feedback. Finally, also negative consequences resulting from systemic silence such as reduced job satisfaction, turnover, and other more long-lasting personal consequences were discussed (Milliken & Morrison, 2003; Morrison & Milliken, 2000).

Building on the work of Morrison and Milliken (2000) and on the exit, voice, and loyalty concept of Hirschman (1970), Premeaux and Bedeian (2003) conducted an empirical study just three years later on how silence can be broken in organizations. Their study among 118 telecommunications employees and their co-workers revealed that by increasing internal locus of control, self-esteem, top management openness, and trust in supervisor, speaking up behavior can be triggered. This effect of breaking the silence especially applies for low-self monitors compared to high-self monitors (Premeaux & Bedeian, 2003, p. 1537). Another study by Edmondson (2003) examined learning in interdisciplinary action teams drawing on research on team effectiveness, speaking up behavior and silence. The qualitative and quantitative data from 16 operating room teams showed that team leader coaching, ease of speaking up, and boundary spanning were linked to successful technology implementation. The most effective leaders managed minimizing concerns about power and status differences and thereby promoted speaking up behavior (Edmondson, 2003, p. 1419).

In the same year, Bowen and Blackmon (2003) published an article arguing that the individuals' perception of the attitude towards an issue within their workgroup had a significant influence on organizational voice or silence behavior. By applying the spiral of silence of NoelleNeumann (1974), the researchers assumed that individuals would rather speak up when their position is supported by others, while

a non-supported climate of opinion in the workgroup would lead to organizational silence (Bowen & Blackmon, 2003, p. 1409). Within their conceptual work, Bowen and Blackmon (2003) introduced a second, vertical spiral of silence that develops through processes rather on the micro level within workgroups based on fear and threat of being isolated when expressing opinions that are not supported by others. These three studies were modeled on the preliminary work of Morrison and Milliken (2000) in an argumentative manner.

Vakola and Bouradas (2005) were the first researchers, investigating the model of Morrison and Milliken (2000) and its antecedents and effects of organizational silence empirically. In this context, Vakola and Bouradas (2005, p. 441) highlighted that while

“the phenomenon of organizational silence is widely seen in organizations, there is little empirical evidence regarding its nature and main components” (Vakola & Bouradas, 2005, p. 441).

Three dimensions of silence climate (i.e. top management attitudes to silence, supervisor’s attitudes to silence, communication opportunities) were constructed and measured to investigate their effects on employee silence behavior, organizational commitment and job satisfaction. The study’s results revealed that all three dimensions of silence climate are associated with and predict the silence behavior of employees as well as organizational commitment and job satisfaction. These outcomes provided the first support for the assumption of Morrison and Milliken (2000) that the perceptions of employees with regards to the attitudes of managers about silence had an impact on the employees’ decision to hold back negative feedback from supervisors. Hence, silence climate negatively affects the organization’s ability to detect errors and to learn as well as ultimately its organizational effectiveness (Vakola & Bouradas, 2005, p. 441). Taking the limitations of this study into consideration, the results offered evidence for the predictive validity of the initial model of Morrison and Milliken (2000) and provided the basis for further promising empirical investigations on silence behavior.

Employee Silence

With the increasing research attention on silence behavior, multiple authors were referring to the phenomenon of silence by using the terms of *employee silence* and *organizational silence* in literature interchangeably (Brinsfield et al., 2009, p. 19). With their paper, examining *employee silence* and its sub-constructs *quiescent* and *acquiescent silence* as a respond to perceived injustice, Pinder and Harlos (2001) provided a clear definition and conceptualization of employee silence at the individual level of analysis. Compared to organizational silence as a collective-level phenomenon, employee silence is defined as

“the withholding of any form of genuine expression about the individual’s behavioral, cognitive and/or affective evaluations of his or her organizational circumstances to persons who are perceived to be capable of effecting change or redress” (Pinder & Harlos, 2001, p. 334).

In this regard it should be mentioned, that silence can also appear on the team (meso) level, and even be contagious and grow from the individual level throughout the team level and become an organization-wide phenomenon: a climate of silence (Brinsfield et al., 2009, p. 19).

The publication of Pinder and Harlos (2001) focused on exploring antecedents, forms, and meanings of employee silence as a multifaceted concepts which is not just limited to lack of speech or formal voice. They also outlined that silence behavior is more than just the absence of voice and as a form of communication it entails a wide range of cognitions, emotions, and intentions. Along their study, Pinder and Harlos (2001, pp. 348–350) defined two different forms of employee silence: (1) *quiescent silence (apprehension and cognitive dissonance)* as deliberate omission which refers to suffering in silence resulting from disagreeing with one’s circumstances and being aware of alternatives while not being willing to apply them to change the status quo, and (2) *acquiescent silence (indifference and hopelessness)*, which involves a deeply-felt acceptance of one’s circumstances,

while having limited awareness of existing alternatives. Employees suffering from quiescent silence are typically ready to break the silence, whereas acquiescent silence is a way deeper state of silence which requires more motivation for action.

Both groundbreaking research publications on organizational silence (Morrison & Milliken, 2000) and employee silence (Pinder & Harlos, 2001) motivated other scholars to investigate silence as a response to a broader range of situations and circumstances. In 2003, van Dyne et al. (2003) further developed employee silence and employee voice as multidimensional concepts and provided a clear distinction between both concepts (see chapter I.1.2). Furthermore, the actual definition of employee silence from Pinder and Harlos (2001) was revised as the purposeful withholding of ideas, questions, concerns, information, or opinions by employees about issues relating to their jobs and organizations (Brinsfield et al., 2009; Morrison & Milliken, 2003; van Dyne et al., 2003).

In addition to the conceptualization of voice and silence as separate, multidimensional constructs, van Dyne et al. (2003) introduced, next to quiescent and acquiescent silence, a third type of silence based on employee motives: *prosocial silence*. Drawing on organizational citizenship behavior (OCB), prosocial silence was defined as

“withholding work related ideas, information, or opinions with the goal of benefiting other people or the organization – based on altruism or cooperative motives” (van Dyne et al., 2003, p. 1368).

In line with OCB, prosocial silence can be understood as intentional and proactive behavior arising from underlying prosocial motives. Employees can choose prosocial silence in order to withhold confidential information based on cooperation or protecting proprietary knowledge to benefit the organization (van Dyne et al., 2003, p. 1363). Based on that, the researchers could show that silence is more ambiguous than voice and that both concepts have differential consequences for employees in organizations (van Dyne et al., 2003).

It is important to note that until the empirical quantitative study of Vakola and Bouradas (2005), only Milliken et al. (2003) made the attempt to investigate the construct validity of acquiescent and quiescent silence. The exploratory study of Milliken et al. (2003) comprised 40 interviews with employees and revealed that 35 out of 40 (85%) of participants could name at least one occasion in which they felt unable to communicate an issue or concern to their supervisors even though the issue was considered to be important. In addition, only 51% of respondents indicated that they felt comfortable speaking up about issues in their current organization (Milliken et al., 2003, p. 1459). The issues interviewees felt unable to communicate to their bosses were (1) concerns about a colleague's or supervisor's competence or performance (37.5%), followed by (2) problems with organizational processes or performance and/or suggestions for improvement (35%). In this context, respondents provided many different reasons for not speaking up regarding those issues. The most cited issues related to (1) fear of being labelled or viewed negatively – as a troublemaker, complainer, or tattletale (30%), followed by (2) the fear of damaging a relationship – by losing trust, respect, acceptance, or support (27.5%) and (3) driven by feelings of futility, as speaking up will not make a difference and recipient will not respond (25%). Moreover, interviewees also reported that they decided to remain silent to not bring other colleagues into trouble and by fear of retribution (Milliken et al., 2003). The study also highlights the contagious facet of silence as employees can learn to be silent: 74% of interviewees reported to feel uncomfortable to speak up about critical work issues and also suggested that other employees were aware of this issue as well. This observation and behavior of the employees support the assumption that employee silence holds a collective aspect and can grow to an organizational-wide phenomenon: organizational silence (Milliken et al., 2003, p. 1465).

As already mentioned, in 2005 Vakola and Bouradas (2005) constructed three dimensions of silence climate to measure the effects on employee silence, organizational commitment and job satisfaction. The results of the quantitative study (n =

677) showed that all three forms of silence climate, such as top management attitudes to silence, supervisor's attitudes to silence, communication opportunities are associated and predict employee silence behavior. All three dimensions were also associated to organizational commitment and job satisfaction (Vakola & Bouradas, 2005, p. 441). It is worth noting that Vakola and Bouradas (2005, pp. 447–448) were the first researchers developing a seven-item scale to measure employee's behavior to silence for their study. These items as well as the ones applied for measuring climate of silence were drawn from the theoretical framework of organizational silence (Morrison & Milliken, 2000) and empirical evidence based on the model of exit-voice-neglect-loyalty (Rusbult et al., 1988). However, the study was only focusing on measuring the effects of climate silence (independent variable) on employee silence as a dependent variable. However, from an empirical point of view, the effects of employee silence on other constructs remained unresearched. Nevertheless, compared to all conceptual and qualitative based studies conducted in the period from 2000 to 2005, the empirical study of Vakola and Bouradas (2005) initiated the *empirical wave (fourth wave)* resulting from the third chronological wave of studies on voice and silence behavior.

Job Withdrawal

With their paper, Blau (1998) aimed at aggregating individual withdrawal behaviors and intentions, such as employee turnover intent (Cotton & Tuttle, 1986), desire to retire (Feldman, 1994), absenteeism (Mowday & Spencer, 1981; D. K. Scott & Taylor, 1985), lateness (Hanisch & Hulin, 1990, 1991), neglect (Farrell, 1983), and disengagement (Molseed, 1989; Swindall, 2007) into larger multi-item constructs. Interestingly, even though employee silence is rather uninvestigated from a job withdrawal perspective, it was conceptualized as a type of job withdrawal (Conlon et al., 2005; Pinder & Harlos, 2001; van Dyne et al., 2003). In this context, (job) withdrawal resulting from employee silence behavior can be considered as one potential form of silence expression. However, as outlined by van Dyne et

al. (2003), silence behavior can – compared to acquiescent and quiescent silence – also be driven by non-withdrawal related reasons such as prosocial silence (Brinsfield et al., 2009, p. 21). Furthermore, based on the underlying motives of silence behavior (van Dyne et al., 2003), employee silence might be a particular form of withdrawal, but also an antecedent of employee withdrawal forms such as turnover intention and absenteeism (Morrison & Milliken, 2000). Consequently, employees suffering from silence (acquiescent silence) may experience a higher level of disengagement and in turn participate to a higher rate of turnover intention and higher rate of absenteeism. In certain cases, employee silence may even result in principled turnover, a state where dissatisfied employees connect remain silent with quitting the job (L. E. Parker & August). However, others studies demonstrated that especially employees showing high levels of loyalty prefer and apply less formal methods to communicate their discontent (Olson-Buchanan & Boswell, 2002).

One of the most recent research paper dealing with employee withdrawal in the context of employee silence was conducted by Whiteside and Barclay (2013). Within their two-steps empirically-based exploratory study, they explored the mediating role of acquiescent and quiescent silence in the relationship between overall justice and four employee outcomes: emotional exhaustion, psychological and physical withdrawal, and performance. Results revealed that acquiescent silence fully mediated the relationship between overall justice and physical withdrawal, but only partially with respect to psychological withdrawal. Compared to acquiescent silence, quiescent silence partially mediated the relationship between overall justice perceptions and psychological and physical withdrawal (Whiteside & Barclay, 2013, pp. 259–260). These results indicate that the implications of employee silence go beyond the pure restriction of information flow in organizations, and also comprise relevant effects for employees too. Thus, quiescent and acquiescent silence may impact organizations through two different effects, the (1) direct effects (e.g. decreasing the availability of relevant information) and (2) indirect

effects (e.g. negative impacts on employees). To summarize, even though employee silence was quite neglected in the scope of job withdrawal, it is quite obvious that remaining silent can be an effect or expression of disengagement. Nevertheless, individuals remaining silent due to continuance dissatisfaction and disengagement may also end in employees leaving the organization (Brinsfield et al., 2009, p. 21).

To summarize, the understanding of both concepts voice and silence has grown in the period of 2000 to 2005, especially from a conceptual and empirical point of view. Researchers such as Morrison and Milliken (2000), Pinder and Harlos (2001), and van Dyne et al. (2003) have shown that organizational and employee silence are based on certain underlying motives and therefore go way beyond the pure absence of voice. Also first empirical studies (e.g. Milliken et al., 2003; Vakola & Bouradas, 2005) provided evidence of the elements of the model of Morrison and Milliken (2000) for its predictive validity and contributed to the understanding of antecedents and effects of silence behavior. In addition, it was demonstrated that silence behavior driven by fear and apathy (acquiescent and quiescent silence) has a negative impact on organizations, whereas prosocial silence acts as a protective form of silence which can lead to beneficial outcomes (van Dyne et al., 2003).

(d) Current Wave (Fourth Wave)

The third wave (2000 - 2005) was characterized by a clear conceptualizations of *organizational* and *employee silence* as well as first initiatives to develop measures to detect different forms of this phenomenon. In comparison, the *fourth* and *current* wave (2006-2019) focuses on the introduction of new concepts (e.g. climate of silence, subordinate improvement-oriented voice, sub-forms of silence), but also on the development of appropriate scales and items together with their application in forms of empirical studies in organizations. Latest from this time onward, research about silence behavior established itself as a highly relevant and reputable

discipline in the field of organizational science. Nevertheless, despite the growing interest and knowledge creation in employee and organizational silence, there are still significant gaps in the understanding of the actual concepts as well as its antecedents and effects for employees and organizations. Many aspects and perspectives have not been explored yet and the call for further publication contributions is still loud.

Climate of Silence

The concept of *climate of silence* appeared the first time in the publication of Morrison and Milliken (2000) theorizing organizational silence. In this regards, climate of silence is defined as

“widely shared perceptions among employees that speaking up about problems or issues is futile and/or dangerous (...) and not worth the effort. When such climate exists, the dominant response within an organization will be silence, rather than voice” (Morrison & Milliken, 2000, p. 708).

Hence, a climate of silence as an organizational widespread phenomenon of organizational silence is caused by (1) managerial implicit beliefs, (2) managers’ fear of negative feedback and (3) certain types of organizational structures, policies and managerial practices impeding the upward flow of information (Morrison & Milliken, 2000, p. 708). The mere or just isolated occurrence of silence in organizations – such as employee silence (Pinder & Harlos, 2001) – does not necessarily lead directly to widespread withholding of information and a climate of silence. However, the likelihood of such a climate emerging and its associated strength and pervasiveness is highly connected to the collective sensemaking activities of employees (Morrison & Milliken, 2000; Weick, 1995). Within these sensemaking processes, employees derive collectively meaning about their workplace, such as its demands, constraints, and outcomes contingencies (Weick, 1995).

Pinder and Harlos (2001) also drew within their conceptualization of employee silence on the concept of climates of silence and argued that those climates can be considered as risk factors and may predispose employees to silence in the context of mistreatment – either directly or indirectly through individual predispositions. Additionally, they argued that employees rather tend to employee quiescence and exit in response to injustice when organizations are characterized by strong climates of silence (Pinder & Harlos, 2001, p. 356).

Up to this point, the concept of climate of silence was just discussed from a conceptual point of view and was not yet investigated empirically. In this regard, first attempts were made starting 2005 (e.g. Henriksen & Dayton, 2006; Knoll & Dick, 2013; Park & Keil, 2009; Vakola & Bouradas, 2005). It is for this reason that, although the concept of climate of silence was introduced within the third wave, it is attributed to the fourth historical wave.

In 2005, Vakola and Bouradas (2005) published the first empirical study (n = 677 employees) conceptualizing three concrete dimensions of silence climate following the definition of Morrison and Milliken (2000). In addition, the authors developed measures and thereby examined the relationships between climate of silence and silence behavior as well as the effects of these dimensions on job attitudes (organizational commitment and job satisfaction) in an organizational change context. The empirical research approach used the individual as a unit of analysis since climate dimensions are perceived by the individuals (Vakola & Bouradas, 2005, p. 442). The study assumed that silence climate negatively impacts the ability of organizations to detect errors and to learn, and, hence has a negative influence on the overall organizational effectiveness. The study revealed a negative correlation among silence climate, employee silence, organizational commitment, and job satisfaction. Furthermore, supervisors' attitudes to silence were the strongest predictor for silence behavior, which in turn indicated that employees were more influenced by the micro silence climate (created by the supervisors' attitudes to silence) than the macro silence climate (created by the top management or

communication opportunities) (Vakola & Bouradas, 2005, p. 451). Consequently, employees decided to remain silent or speaking up depending on their perception of the supervisors' attitudes to voice expression. However, supervisors' attitudes to silence have a stronger impact on employees because of the directness of the relationship and the contact frequency. Therefore, the relationship between silence climate and organizational commitment and job satisfaction indicates that supervisors need to provide a space for open discussion and negative feedback (Vakola & Bouradas, 2005, p. 454). Therefore, the study of Vakola and Bouradas (2005) empirically demonstrated how a climate of silence evolves and by which negative consequences it affects the effectiveness of organizations.

Just one year later, within their paper converging research areas of cognitive, social, and organizational science as well as sociotechnical systems, Henriksen and Dayton (2006) conducted further research on the concept of silence climate by identifying underlying factors shaping and sustaining organizational silence. Focusing on the health care sector, they stated that organizations as social environments are characterized by units that own their own microclimates based on different underlying assumptions or beliefs (e.g. climates of distrust or climates of silence). Especially in a change context, organizations tend to operate in a silo mentality (Senge et al., 1999) and those microsystem climates within silo units are mainly influenced and shaped by the management leadership style at the local level, with potential effects on error reporting and speaking up behavior (e.g. punitive-low error reporting versus open-high error reporting) (Henriksen & Dayton, 2006, pp. 1547–1548). As a consequence, silence can start as a single employee silence behavior, emerge in local units as a microclimate, grow within this milieu, and spill over to other units through its contagious characteristics. Therefore, it can grow into an organizational phenomenon with massive negative effects for employees but also for the entire organization and its performance.

Another study that empirically explored the antecedents and effects of the concept climate of silence was conducted by Park and Keil (2009). The study integrated

key elements of the model of organizational silence (Morrison & Milliken, 2000) with the whistle-blowing model adapted from Dozier and Miceli (1985). By performing a role-play experiment with students, Park and Keil (2009) explored how organizational structures and policies, managerial practices, and the degree of demographic similarity between employees and top managers would create a climate of silence. Additionally, the researchers focused on the effects of the climate of silence, such as the willingness of employees to report bad news. Within their study, Park and Keil (2009, p. 907) developed a non-reflective multi-item measure for climate of silence taking the notions of the two shared beliefs (i.e. speaking up is not worth the effort and voicing can be dangerous) of Morrison and Milliken (2000) into account, since until that point no other scales were existing and available. The results of the study revealed that (1) climate of silence showed negative influences on the assessment and willingness to report bad news and (2) all three factors proposed by Morrison and Milliken (2000) had a significant impact on a climate of silence (Park & Keil, 2009, p. 910). Among the three factors, managerial practices had the strongest effect as employees perceive a greater climate of silence when their supervisors respond negatively to bad news and do not informally reach out for negative feedback from the followers (Park & Keil, 2009, p. 910). Overall, the outcomes of the study provided solid empirical support for the theoretical model of Morrison and Milliken (2000). Moreover, through the development and validation of appropriate items and scales to measure the climate of silence construct grounded in the organizational silence literature, this study was the first to empirically show that certain causes (i.e. organizational structures/policies, managerial practices, degree of demographic dissimilarity between employees and top management) can contribute to a climate of silence, which in turn affects all three steps on the individual reporting model (Miceli & Near, 1992).

The most recent publication that takes the concept of climate of silence into their research focus is the one of Knoll and Dick (2013). Their study aimed at conceptu-

alizing and measuring four distinct forms of employee silence and their correlates. Drawing on the definition and assumptions proposed by Morrison and Milliken (2000), Knoll and Dick (2013) argued that organizational structures and policies as well as implicit beliefs of the top management create a climate of silence. Hence, they suggested that a climate of silence is positively related to quiescent and acquiescent silence caused by fear and resignation. Compared to those forms of silence, the expected relation to prosocial and opportunistic silence was expected to be positive as well, but less strong in their relationship. To assess the climate of silence, (Knoll & Dick, 2013, p. 355) developed an own multi-item measure building on the conceptualization of Morrison and Milliken (2000). Findings did support the positive correlation between organizational climate partially for three forms of silence. Prosocial silence was not significantly related to an organizational climate of silence. This indicates that the provision of a safe context for speaking up is not able to prevent all employee silence forms (Knoll & Dick, 2013, p. 356). It can be suggested that the climate of silence is just one potential source of organizational threat.

The initial conceptualizations of silence climate (Morrison & Milliken, 2000; Pinder & Harlos, 2001) and multiple empirical investigations (e.g. Henriksen & Dayton, 2006; Knoll & Dick, 2013; Park & Keil, 2009; Vakola & Bouradas, 2005) underlined the importance of this concept, but also its evolvement and consequences for organizations. All studies demonstrated that a climate of silence starts with the individual and its perception, and can grow from a micro climate (unit or department based) up to a macro climate, contaminating the entire organization in the worst manifestation. As soon as silence infused organizations with its vehemence and dissemination as a widespread phenomenon, it is very difficult for organizations to break the silence and repress the contagiousness of silence as a climate.

Subordinate improvement-oriented Voice

As already addressed within the section above, supervisors and managers have a huge impact on the voice and silence behavior of employees. Following this, Detert and Burris (2007) investigated the relationship between transformational leadership and managerial openness as change-oriented leadership and *subordinate improvement-oriented voice* within a two-phase study. The concept of subordinate improvement-oriented voice behavior refers

“to speaking up in ways that seek to challenge or replace the established practices, policies, or strategic directions that comprise the status quo among those individuals who created or otherwise stain those aspects of the organization” (Burris, 2012).

In most cases, employees direct their improvement-oriented ideas to their managers. However, the managers' openness to or appreciation for those change-related ideas can be considered as a critical contextual influence on the willingness of employees to speak up. Therefore, management openness and transformational leadership as perceived leader-behaviors have a positive impact on the employees' belief that speaking up is safe and their willingness to do so (Detert & Burris, 2007, p. 871). Drawing from existent leadership theory and voice research, the results of the study demonstrated that management openness is consistently related to voice. The relationship also showed to be mediated by the perception of subordinates regarding psychological safety. Therefore, leaders play a very important role in preventing silence behavior and promoting speaking up since subordinates constantly assess the risks of speaking up. The study of Detert and Burris (2007) also stated that in particular the voice behavior of the best-performing employees is most affected by the leaders' behaviors. This implies that especially employees with a high tendency of improvement-oriented attitude/behavior decide very deliberately whether to speak up and are skilled in monitoring their external environment and adapting their tactics of communication accordingly (Detert & Burris, 2007, p. 872). More interestingly, the fact that these best-performing employees

inhibit the most improvement-oriented ideas and tend to be very careful in communicating them contributes to the discussion that silence is more than just merely the absence of voice.

Distinctive Forms of Silence Behavior

The current wave of voice and silence behavior is mainly characterized by the development of scales and items to measure organizational and employee silence as well as their application in empirical study setups. The most remarkable efforts in developing measures to detect and locate silence in organizations were realized by Knoll and Dick (2013), Brinsfield (2013) and MacGregor and Stuebs (2014). Their contribution to the silence literature opened the door to a variety of further empirical studies investigating antecedents and effects of silence behavior in the organizational context from multiple diverse perspectives and underlying theories.

Within their study in 2013, Knoll and Dick (2013) outlined that, compared to organizational silence as at top-down organizational level phenomenon causing employee silence, the investigation of a bottom-up perspective had been neglected so far. In order to understand employee motives that contribute within this perspective to the evolvment and maintenance of silence in organizations, the conceptualization of distinct forms of employee silence based on Pinder and Harlos (2001) is useful to consider. Based on conceptual suggestions (Morrison & Milliken, 2000; Pinder & Harlos, 2001; van Dyne et al., 2003) and pilot studies (Brinsfield, 2013; Morrison & Milliken, 2003), as well as different theories, Knoll and Dick (2013) conceptualized scales and items of four forms of employee silence: (1) *acquiescent*, (2) *quiescent*, (3) *prosocial*, and (4) *opportunistic silence*.

- (1) *Acquiescent silence* can be characterized as disengaged behavior which is represented by employees who are not inclined to take the effort to speak up, get engaged, or making any attempts to change the situation given. Therefore, acquiescent silence is defined as “passive withholding of relevant ideas, based on submission and resignation” (Knoll & Dick, 2013, pp. 350–351). Morrison

and Milliken (2000) stated that this behavior is caused by the belief that the opinion of employees is not valued and sought by the supervisors. Compared to quiescent silence, acquiescent silence is much harder to break as the motivational capacity is weaker and deep resignation is prevalent.

(2) Originally, *quiescent silence* represents deliberate omission, and

“connotes disagreement with one’s circumstances, in effect suffering in silence while being aware of existing alternatives to change the status quo, yet willing to explore them” (Pinder & Harlos, 2001, p. 348).

The main driver for this type of silence is fear as withholding of relevant information is a self-protective mechanism since the consequences of speaking up is more dangerous than remaining silent (Knoll & Dick, 2013, p. 351). Withholding relevant ideas and information caused by fear as a key motivator, was already raised by Morrison and Milliken (2000), conceptualized as defensive silence by van Dyne et al. (2003) and Rosen and Tesser (1970) in relation to the MUM effect, and in the context of psychological safety (Detert & Edmondson, 2005). However, compared to acquiescent silence, employees are ready to break the silence under certain conditions.

(3) Drawing on the OCB literature, *prosocial silence* is defined as

“withholding work-related ideas, information, or opinions with the goal of benefiting other people or the organization – based on altruism or cooperative motives” (van Dyne et al., 2003, pp. 1367–1368).

Hence, under certain circumstances, prosocial silence can be beneficial and appropriate. The reasons for employees engaging in prosocial silence are various: owning a general altruistic personality, high sense of belonging, interest in maintaining social capital, or the protection of the own identity (Knoll & Dick, 2013, p. 351). Researchers argued that prosocial silence also inheres a

dark side and is not only about withholding confidential information and protecting proprietary knowledge to benefit the organization or certain members of the organization. In certain situations, employees can engage in unethical pro-organizational behavior to benefit the organization, colleagues, or customers. Evidence for such prosocial behavior was provided in the health care sector (e.g. Gibson & Singh, 2003), the police (e.g. Trautman, 2000) or the government (e.g. Maria, 2006). The main motives for remaining silent was dealing with observed failures or misconduct in those domains (Knoll & Dick, 2013, p. 351).

- (4) Compared to other-oriented forms of silence, Knoll and Dick (2013, pp. 351–352) introduced *opportunistic silence* as employees use withholding information to achieve advantages for themselves. This form is based on the concept of opportunism as “self-interest seeking with guile” (Baumol, 1986). Knoll and Dick (2013, p. 351) defined opportunistic silence as

“withholding of or provision of incomplete or distorted information, with the purpose to mislead, disguise, or confuse.”

Withholding of information by opportunism is closely related to the concept of counter-productive work behavior. Greenberg et al. (2007) and Brinsfield (2009) addressed this behavior of remaining silent as deviant silence. However, compared to opportunistic silence, deviant silence focuses on remaining silent to harm the organization or colleagues as one potential way. Knoll and Dick (2013, p. 351) broadened the scope as withholding information can also be useful to not give away power and status, or just to avoid extra workload. However, just little research attention has been given to this type of silence behavior so far.

The distinctiveness of these forms as well as patterns of relationships to various correlates and potential antecedents and consequences was shown by empirical tests. The conceptual elaboration of Knoll and Dick (2013) regarding the four

forms of employee silence was achieved by two studies. Study 1 focused on the development of scales, which were developed by creating an item pool consisting of 20 statements to be completed by the sample ($n = 373$). The formulation of the statements was inspired by the prework of Brinsfield (2009) and Milliken et al. (2003), and by the conceptual suggestions of van Dyne et al. (2003). The general response patterns were examined by an exploratory factor analysis (EFA) and the model fit by a confirmatory factor analysis (CFA) (Knoll & Dick, 2013, p. 354). The conduction of series of CFAs showed that the four forms of employee silence were empirically distinct concepts and showed a good model fit. The second study aimed at the construct validation of the four forms of employee silence, integrating several antecedents (climate of silence), correlates (job satisfaction, organizational identification) and consequences (well-being, strain, turnover intentions) into the empirical model.

Regarding the antecedents, results indicated positive correlations between organizational climate of silence and all four forms of employee silence. Acquiescent, quiescent, and opportunistic silence were negatively related to silent climate. However, prosocial silence was not significantly related, indicating that a safe context does not prevent all forms of silence. Additionally, acquiescent silence showed the strongest relation to climate of silence. In contrast, quiescent silence correlated weaker to silence climate as expected. In this context, Knoll and Dick (2013) stated that next to climate of silence as one source of threat, other related topics such as innovation management indicated that supervisor-subordinate relationships (Detert & Burris, 2007) and team characteristics (Bowen & Blackmon, 2003) are also promising constructs to gain a better understanding of quiescent silence. In this regard, Knoll and Dick (2013, pp. 356–357) recommended to conduct further research to examine influences that have an impact on the behavior in organizations but are not organization-specific, such as professional codes and cultural specifics.

The results of the investigation of the study's correlates revealed that job satisfaction is negatively related to acquiescent and quiescent silence. However, employees who scored high in prosocial and opportunistic silence showed lower level of job satisfaction. Knoll and Dick (2013, p. 357) argued that despite the underlying motives, withholding information and opinions appears to be dissatisfying. The highest level of dissatisfaction was stated in relation to acquiescent silence because of being not able at all to affect the change. With respect to organizational identification, only acquiescent silence showed a negative relationship to organizational identification. In contrast to previous findings (e.g. Burriss et al., 2008), the study of Knoll and Dick (2013) revealed that demonstrating quiescent, prosocial or opportunistic silence does not automatically mean losing the identification with one's organization. In addition, the study also did not show any correlation between prosocial silence and organizational identification from employees that aimed at supporting the organization or colleagues by remaining silent.

Focusing on the consequences of all four forms of silence, the study of (Knoll & Dick, 2013, p. 357) reported a negative relationship between acquiescent and quiescent silence and well-being and a positive relationship to strain. The relationship for strain was weaker for acquiescent silence than for quiescent silence. Those results are in line with the findings of Pinder (2008): fear and resignation as motives are both associated with lower well-being and higher levels of perceived work-related stress. This indicates that on the one hand, silence behavior might help reducing strain, but that on the other hand it does not inhibit the weakening effect of unintentional silence on well-being (Knoll & Dick, 2013, p. 357). Compared to the assumption formulated within the hypothesis, prosocial silence was unexpectedly negatively related to well-being. This leads to the assumption that the buffering effect of prosocial silence is not efficient enough. However, the study reported the lowest scores for the relationship between opportunistic silence and well-being and strain. In this context, Knoll and Dick (2013, p. 357) pointed out that this counterintuitive result requires further investigation to gain a better under-

standing of the nature of this form of silence. Lastly, the study was examining the relationship between acquiescent and quiescent silence and turnover intention and reported a positive relationship. To the researchers' surprise, prosocial and opportunistic silence were also positively related to the turnover intention of employees. With regards to prosocial silence, prosocial motives might weaken the attachment of the employee to its organization. Based on the data provided, no sufficient explanation for the positive relationship between opportunistic silence and turnover intention could be made by Knoll and Dick (2013, p. 357).

Nearly at the same time, Brinsfield (2013) also examined motives for employees based on four studies. These studies included (1) the determination of the nature and scope of motives regarding silence through an open-end-survey with students (n = 438), (2) the development of measures of these motives and analysis of their factor structure, (3) refinement of the measures and proving confirmatory evidence, and (4) investigation of the measures relationships to other related factors. These factors included employee voice, psychological safety, neuroticism, and extraversion. The outcomes of the research study of Brinsfield (2009) revealed six distinctive dimensions of silence motives which helped measuring and understanding the phenomenon of silence: *ineffectual*, *relational*, *defensive*, *diffident*, *disengaged*, and *deviant silence*. The underlying motives and targets of silence of Brinsfield (2009, pp. 675–676) were in line with former studies on employee silence and highlighted the relevance of fear: 21% of the respondents stated that they remained silent due to the experience of unfair treatment, followed by observed unethically behavior (17.6%), concerns about the competencies and performance of co-workers (16.8%), and operational process concern and/or idea for improvement (13.3%). Participants also indicated with a great agreement that silence behavior is directed mainly to the upper management (40.6%) and to the direct supervisor (27.9%). Co-Workers (17.0%) and team members (3.1%) followed with a relatively large gap. The results are in line with findings from prior conceptual work regarding employee silence motives (Pinder & Harlos, 2001; van Dyne et al.,

2003) and highlight again the central role of fear and leadership as an important role in preventing and dealing with silence behavior in organizations.

Based on their pre-studies, Brinsfield (2009, pp. 681–682) presented six different forms of employee silence which will be discussed shortly.

- (1) *Deviant silence* is defined as intentionally withholding relevant information as a counterproductive work behavior in terms of misuse of information (e.g. intentionally failing to provide important information to the supervisor or co-worker). However, the studies of Brinsfield (2009) provided just scarce empirical evidence as participants might be reluctant to report such deviant behavior. Therefore, deviant silence could be more persuasive than constituted in the study and therefore requires further investigations. Potential parallels to opportunistic silence have not been investigated yet.
- (2) The second form of silence, *relational silence*, is driven by the motive of not harming a relationship or relational oriented reasons and concerns. The definition is in line with the findings of Milliken et al. (2003) and van Dyne et al. (2003). They argued that employees remain silent due to fear of damaging relationships in the work context and provided prosocial motives such as altruism and cooperation as potential explanations. However, Brinsfield (2009) argued that prosocial silence is based on far deeper motives (e.g. self-interest) than just altruism. The cross-loadings of these items supported the assumption that individuals differentiate between prosocial motives and rather self-interested silence motives. In contrast to prosocial silence (van Dyne et al., 2003), relational silence does not take the withholding of confidential information based on cooperation reasons or to benefitting the organization into account.
- (3) The third form of silence proposed by Brinsfield (2009), *defensive silence*, is closely related to quiescent silence, which Pinder and Harlos (2001, pp. 348–349) defined as a “deliberate omission” and “suffering in silence” due to workplace injustice and the fear of consequences when speaking up (e.g. pun-

ishment, negative feedback). Fear as a key motivator is also supported by Morrison and Milliken (2000) and consistent with the concept of psychological safety (Edmondson, 1999) as a central precondition for speaking up behavior. Hence, Brinsfield (2009, p. 682) highlighted fear of extrinsic consequences as central for this type of silence.

- (4) Compared to defensive silence, *diffident silence* is characterized by fear of intrinsic consequences and is related to “one’s insecurities, self-doubt, or uncertainties regarding the situation or what to say” (Brinsfield, 2009, p. 682). Therefore, employees show diffident silence to avoid negative consequences (e.g. embarrassing oneself) in contrast to defensive silence (e.g. being afraid of losing one’s job). In this context, NoelleNeumann (1974) attributed self-doubt as a reason for not speaking up and introduced the concept of *spiral of silence*. Other researchers such as LePine and van Dyne (1998) showed that self-esteem positively influenced voice behavior, whereas neuroticism demonstrated a negative effect (LePine & van Dyne, 2001). However, this confirms that further research is required to achieve discriminant validity of diffident silence.
- (5) Brinsfield (2009) labeled the fifth type of silence *ineffectual silence*, which is based on the belief that speaking up would just have a very limited impact on changing certain issues, situations, or concerns. Related concepts were already introduced by other researchers. For instance, Morrison and Milliken (2000) introduced the concept of climate of silence which reflects the shared belief that speaking up about organizational issues is not worth the effort. Additionally, Pinder and Harlos (2001, pp. 349–350) defined in this regard acquiescent silence as the deeply-felt acceptance of specific organizational circumstances, a very limited awareness of the existence of potential alternatives, and the feeling of resignation and hopelessness. Also van Dyne et al. (2003, p. 1366) defined acquiescent silence as “withholding relevant ideas, information, or opinions, based on resignation”. Despite of all these former and related defini-

tions, Brinsfield (2009) argued that *ineffectual* provides a better distinction as it is more focused on the belief that speaking up behavior does not have a positive effect on the situation, whereas acquiescent silence is rather associated with feelings of resignation.

- (6) The last type of silence has been described by Brinsfield (2009) as *disengaged silence* as it according to R. L. Kahn and Byosiere (1992) reflects the uncoupling process from work roles. In this context, previous research identified a relationship between voice behavior and engagement-related constructs. For instance, Graham and van Dyne (2006) identified experienced significance of work as a predictor of voice behavior among employees. In addition, further researchers found evidence that organization-based psychological ownership (O’driscoll et al., 2006) as well as organizational identification (Tyler & Blader, 2003) were positively related to voice behavior in organizations. In this context, Brinsfield (2009) also stated that disengaged silence shows overlaps with the conceptualization of acquiescent silence outlined by van Dyne et al. (2003) as it also inherits feelings of low self-efficacy to make a difference. However, the empirical distinction proposed by Brinsfield (2009) indicated that there is a difference between remaining silent because of the feeling of being unable to make a difference, and the silence due to disengagement.

About one year later, the concept of *fallacious silence* was additionally introduced and refers to the state

“in which individuals refrain from any form of genuine expression that calls attention to illegal or immoral issues that violate personal, moral or legal standards” (MacGregor & Stuebs, 2014, p. 150).

Within the context of whistle-blowing and by using the fraud triangle as well as models of moral behavior, MacGregor and Stuebs (2014) analyzed fallacious silence and motives that might lead to this passive behavior. The research approach focused on three different incentives (economic, social, moral) that have an influ-

ence on fallacious silence. MacGregor and Stuebs (2014, p. 152) assigned the sub forms of employee silence provided by Knoll and Dick (2013) to each incentive cluster:

- (1) Economic incentives motivate quiescent, opportunistic, and prosocial silence
- (2) Social incentives motivate acquiescent and prosocial silence
- (3) Moral incentives motivate prosocial silence

The examination of factors influencing the rationalization of individuals to show fallacious silence revealed that this behavior is related to community, cultural influences and personal traits, such as awareness, professional standards, and moral competence (MacGregor & Stuebs, 2014, p. 161). Further statistical analyses showed that especially awareness, community, and moral competence dimensions have the highest impact on the decision of individuals remaining silent. Taking these results into consideration, the researchers highlighted the importance of the development of organizational loyalty and supportive corporate culture, as well as the implementation of whistle-blowing programs. Overall, the study of MacGregor and Stuebs (2014) offered support for the validity of the different forms of employee silence constructed by Knoll and Dick (2013) in the empirical investigation of fallacious silence as the individual's willingness to remain silent.

I.4 Interim Conclusion

The systematic literature review of this thesis aimed at presenting the current state of literature in the field of organizational and employee silence. The results of the review have clearly shown how deeply voice and silence as interlinked concepts are rooted in a wide variety of research areas (e.g. organizational behavior, industrial-organizational psychology, or communication). However, it took more than 30 years – starting with Hirschman (1970) – until the concept of silence emanated from the voice literature through the groundbreaking works of Morrison and

Milliken (2000) and Pinder and Harlos (2001), introducing organizational and employee silence. Nevertheless, organizational and employee silence faced difficulties in establishing themselves as more than just the opposite or the absence of voice over many years.

Building on existing research efforts regarding both concepts, a clear distinction between voice and silence as well as corresponding definitions were provided within this literature review. Comparing both concepts precisely was very key since voice has received far more academic attention over the past decades and therefore no clear differentiation between both concepts was made. Furthermore, based on the systematic literature review methodology applied, which included a compelling process of data collection, sampling process, data evaluation and coding process, research regarding silence and voice was reviewed. More specific, within their historical review on voice and silence covering the period from 1970 to 2005, Brinsfield et al. (2009) were tracing back both phenomena by identifying three essential chronological waves (initial wave, second wave, third wave). Though, research on silence is steadily receiving a growing attention since this time, especially driven by empirical investigations. However, no literature review has been conducted subsequent to the efforts of Brinsfield et al. (2009) until the year 2005, that fully covers the literature on silence and partially voice. Therefore, the present literature review aimed at filling this gap of 15 years by providing a current (fourth) wave that covers the research efforts conducted from 2006–2019. The results of reviewing the latest publications and papers have underlined the importance and relevance of the existing literature on organizational and employee silence, but also highlighted the tremendous negative effects of silence behavior on organizations and employees. However, the overview of the current state of literature also revealed, that many unresolved questions have not been answered yet and many calls for research contributions still go unheard.

II. Pre-Studies – Exploring the Silence Phenomena

As outlined, many perspectives as well as antecedents and effects of the multi-faceted construct of employee silence have not been sufficiently addressed so far. In addition to the comprehensive literature review, the following two preliminary qualitative studies were conducted aiming at ensuring a more advanced understanding of the concept of silence, but also at identifying and validating potentially further relevant antecedents and effects of silence as a basis for the quantitative investigation of this thesis. This is in alignment with Gläser and Laudel (2009, pp. 107–109) who define preliminary studies as

“empirical investigations that are limited in scope and are intended to obtain knowledge necessary for the actual investigation”.

They also stated that those pre-studies should be performed as early as possible within the overall research project. Hence, pre-studies are supposed to (a) gain relevant information about the subject of the study, (b) the organization of prior knowledge into hypotheses, variables, or influencing factors, and (c) the formulation of an investigation strategy (Gläser & Laudel, 2009, p. 107). Constructs that were selected for validation and not exploratory purposes were derived from the literature review. Using a qualitative approach (16 interviews) in form of guided expert interviews, both pre-studies aim at describing the individual’s environment from an “inside out perspective” (Flick et al., 1995, p. 14). Hence, this research method reveals findings that are not mainly based on statistical or other forms of quantification (Corbin & Strauss, 2014, p. 17), but rather applicable in exploring phenomena and interrelationships that have been analyzed insufficiently (Flick et al., 1995, p. 25). The results of both studies were designed to contribute to the growing research on employee silence and to gain further insights not merely from a construct but also from a context perspective: the first pre-study was conducted in the context of change management driven by business model transformation, the second pre-study in the healthcare industry. Results of both studies provided beneficial information for a better understanding of the silence concept, but also about

its mechanisms (causes and effects), and specific instances in their organization (contexts) under which this harmful behavior might emerge. Before outlining the studies' objects and empirical approach, the quality criteria for qualitative research will be drawn. Finally, the results of both pre-studies will be presented and critically discussed, and implications and limitations derived. Both pre-studies will close with a conclusion.

Quality criteria for qualitative research

The research design of both pre-studies was constructed to meet the central quality criteria of qualitative research. According to Mayring (2014, p. 107), social science methodology defines three central quality criteria as measures of *objectivity* (research findings are not depending on the researcher), *reliability* (stability and precision of the measurement; consistency of measuring conditions), and *validity* (measuring exactly what is supposed to be measured) in quantitative and qualitative research. Therefore, the quality of research design can be assessed based on the quality criteria outlined in Figure II-1.

Internal validity refers to an appropriate operationalization and valid causality (Wrona, 2006, pp. 202–203). Internal validity is normally not applied within qualitative social research approaches as it has its origin in the quantitative research and usually refers to the development of causal relationships by controlling confounding variables. Thus, it is mainly applied for explanatory and causal studies and less applicable for descriptive and explorative studies (Yin, 2009, p. 42). Consequently, it cannot be simply transferred into the qualitative research due to the assumption of causal relationships (Seale, 1999). However, a certain level of internal validity can be ensured by using different sources (triangulation of data), operationalizing constructs in alignment with existing/reviewed literature and theory, recording of interviews, literal transcription of interviews, or re-discussing of findings with interviewees.

Fig. II-1: Quality criteria of quantitative and qualitative research

| Quality Criteria | Central Statement | Examination in quantitative social research | Application in qualitative social research |
|-------------------|---|---|---|
| Internal Validity | Validity of variables (their measures) in the model | <ul style="list-style-type: none"> • Operationalization • Indicator creation • Ambiguity | <ul style="list-style-type: none"> • Closeness to everyday life and empirical anchoring (in-vivo) • Computer use • Communicative validation • Triangulation • "Falsification logic" (search for counterevidence) |
| External Validity | Generalization | Representative sample | Context reference is provided by <ul style="list-style-type: none"> • Theoretical sampling (max. contrast) • Prototyping • Communicative validation |
| Reliability | Reliability, degree of accuracy of measurement | e.g. re-test, parallel test etc. | Procedural reliability through explication (disclosure of the interpretation performance, traceability) |
| Objectivity | Researcher independence | Use of standardized methods / algorithms | <ul style="list-style-type: none"> • Documentation of the research process • Disclosure of subjectivity • Standardized methods |

Source: adapted from Wrona (2006)

External validity refers to the generalizability of scientific statements and results (Wrona, 2006, p. 204). The possibility to transfer results from a specific research situation to other spatio-temporal situations is linked to the representativeness of the empirical source material. If a sample is representative with respect to individual characteristics, findings can be generalized to the population with a certain degree of probability (Wrona, 2006, p. 204). However, external validity is just compatible with qualitative research to a certain extent: (1) the replicability of research situations is very limited as it is derived from fundamental assumptions. Furthermore, (2) qualitative research aims mainly at specifying certain action conditions. However, generalizability is not necessarily intended from a qualitative research perspective. Despite all critics, the basic idea of generalization can be transferred to qualitative research through the framework of theoretical sampling. In this case, generalizability can be achieved through qualitative studies in differ-

ent situations, which normally tend to be more situational in character (Wrona, 2006, p. 204).

Transparency is key to ensure the quality criterion of *reliability*, which refers to the accuracy with which the object of the study was examined (Wrona, 2006, p. 205). Traditional used methods (e.g. re-test, parallel-test, consistency) are characterized by ensuring stability and precision of the measurement as well as consistency regarding the measuring conditions (Mayring, 2014, p. 107). A re-test focuses on performing a research operation repeatedly. In doing so, it can be tested whether it would reveal the same finding results. However, test repetition implies the assumption of stability of the study object, which on the other hand contradicts the assumptions of the interpretive paradigm (Wrona, 2006, p. 205). However, a certain level of transparency in qualitative research can be achieved through (a) good documentation of information (e.g. interview protocols, interview transcripts, interview guidelines, coding sheets, name of interviewees and companies) and (b) the documentation of the researcher's preconception as well as (c) rule-guidance of the research process. This allows to increase the replicability of the study and thereby ensures a sufficient level of reliability.

The last criteria discussed is *objectivity*. According to Mayring (2014, p. 109), it refers to the independence of research results from the researcher. It is argued that objectivity is the most difficult criterion to ensure in qualitative research due to the methodological foundations of qualitative research (Wrona, 2006, p. 205). However, researchers need to be aware of this issue and are recommended to disclose the topic of subjectivity transparently through different measures, such as the documentation of research process or the provision of further information (e.g. interview transcripts) as discussed above (Wrona, 2006, p. 205). Moreover, methods such as the qualitative content analysis provided by Mayring and Fenzl (2019) offers an approach to objectify the research process event within qualitative social research.

II.1 Pre-Study 1 – The Role of Leadership on Silence in the Context of Business Transformations

The first pre-study focuses on the examination of leaders' impact on employee silence behavior (leader-member exchange-relation, or LMX) in the context of change management processes caused by the transformation of the organization's business model. Numerous studies were conducted assuming that employees do not communicate issues, problems, or concerns to their supervisor. Only a few have addressed the causes for such behavior and the context which decreases the decision probability of speaking-up behavior. Although past research provided some fruitful insights in the context of leadership and employee silence (e.g. Guenter et al., 2017; S. Hassan et al., 2019; Monzani et al., 2016), the present pre-study intends to gain a richer appreciation of how the relationship between leaders and followers affects the decision making process of remaining silent. To do so, an interview-based study (8 interviews) was conducted in which leaders and followers shared their feelings and thoughts about certain situations in which they were withholding rather than communicating information. All interview participants were working in organizations that were currently or recently undergoing a radical transformation of their business model. Therefore, it is assumed that managers and followers assessed their cognitive map of organizational communication norms more critically due to this company change process, which therefore impacted their willingness to speak up about issues or concerns. Moreover, the study also aimed at extracting situations, issues and concerns that are most likely to elicit silence behavior in the given context.

Sample description

To investigate the impact of leadership and employee silence on business model transformations, companies of two industries were selected that provided the required change. The first selected industry was the mechanical engineering sector which is confronted with new technology challenges and possibilities (industry

4.0) causing upheaval within the entire industry. The chosen company was a large German company considered as market leader within its particular sector and facing major changes due to industry 4.0. As a second industry, the banking sector was selected, as banks are extensively exposed to new political regulations, persistent low interesting rates, digital disruption and the entry of new competitors (e.g. neobanks). Three different German banks were chosen, all affected by the circumstances of the banking crisis (e.g. increasing pressure of digitization, competition). The transformation of all companies involved occurred on multiple fronts: change in resources and competencies, organizational structure, and re-definition of their value proposition. In each industry, four persons were interviewed, consisting of employees (n = 4) and managers (n = 4). Managers were not just selected due to their interactions with employees and other managers (LMX relations) but also for their frequent and direct contact to the top-level management (LLX relations). The average age of participants was 45 years (min = 28 years; max = 61 years). The average tenure of participants was 12 years (min = 2 years; max = 25 years). Three out of four managers gained leadership experience within their prior work for another organization. All interviewees were informed about the purpose of the study by a cover letter. In this regard, no incentive to participate was given.

Data collection and interview protocol

Two different semi-structured interview guidelines for employees and managers were developed to examine the dyadic relationship. Relevant questions were constructed based on theoretical foundations (LMX- and LLX-theory) and the present literature review. In order to limit bias, the introduction of the study in the interview was focused on the role of communication within the change process and the interrelation of employees and managers, and then stressed the construct of employee silence. The interviews lasted 36 – 66 minutes (average 47 minutes), were conducted in German, and took place with one exception in a face-to-face setting. Additionally, respondents were informed about the anonymity of their person, ex-

act position, and company name (see Appendix 2). All interviews were tape-recorded. The semi-structured interview guidelines for employees and managers appear in Appendix 2. All recordings were listened to twice to capture all relevant data.

At the beginning, both semi-structured interview guidelines addressed the relevance and type of change process, its consequences for the entire organization and the individual's perception (top-management, manager, employees). Interviewees were also asked whether resistance to change behaviors resulting from the change process could be observed. Following these general questions, leaders were asked to describe their role and by which concrete leadership behaviors and measures they were managing employees' concerns, problems and issues emerging from the transformation process. In contrast, employees were asked to describe how they perceived the leadership behavior of their managers within the change process (e.g. communication, engagement of employee participation, empowerment, consideration of opinions and concerns). The next section focused more specifically on the topic of communication, both for leaders and employees. Employees were asked (a) by which specific instances they felt unable to speak up to their manager about a concern or issue related to the ongoing change (e.g. fear of being viewed negatively or damaging a relationship), (b) whether leaders were supporting voice behavior and how they reacted in case of open and honest communication, and lastly (c) what negative or positive consequences they experienced by speaking up. On the other hand, leaders were asked whether they (a) experienced employee silent behavior, (b) by which reasons their employees decided not to speak up, and (c) how they evaluated the impact of leadership style (e.g. measures, actions, communication) on the decision of employees to remain silent. Lastly, both employees and leaders were asked whether (a) they would react the same way in a similar situation based on their past experience, and (b) whether they would classify the transformation of the organization's business model as a disruptive change process with extensive and far-reaching consequences and its specific impact on

employee silence behavior. The overall goal was to learn about possible antecedents and effects of employee silence and the role of leadership behavior in this particular context (change process).

Content coding and data analysis

All interviewees were asked the questions mentioned on the section above, (1) general information about the change process itself, (2) leaders' role and behavior towards speaking-up behavior, (3) the impact of perceived leadership on employee silence, (4) the effects of employee silence on the organization, and (5) the impact of change type (business model transformation) on the employee silence behavior. All interview recordings were transcribed on a computer and the software MAXQDA was used for the coding process. Based on the semi-structured interview guidelines, respondents did not answer the questions with a clear-cut "yes" or "no", so clear judgments about how to appropriately code the interviewee's answers were made. Every communication given was transcribed except conversational particles (e.g. mhhh or ähhh) as they were considered with no significance to the arguments made. With reference to the interview analysis process, a standard practice for qualitative data according to Mayring and Fenzl (2019) and Kuckartz (2014) was employed, performing a deductive process which includes the development and refinement of a coding scheme. This coding scheme included the operationalization of different leadership styles, such as transformational leadership characteristics (Bass et al., 2003), authentic leadership (Walumbwa et al., 2008), and autocratic leadership (Cremer, 2006) as well as LMX (Liden & Maslyn, 1998) and LLX (Venkataramani et al., 2010). Employee silence was defined in the scope of its sub-constructs (acquiescent, quiescent, opportunistic, prosocial silence) according to Knoll and Dick (2013). The definitions of the coding categories were explicitly intended to be rather inclusive than exclusive to not miss any relevant information especially due to the novelty of the construct of employee silence and its research context. Next, the first transcribed interview was analyzed to assign

relevant text elements to the previously defined codes to test their applicability. Based on this first analysis, sub-codes were formulated and standard examples from all transcribed interviews were identified to further facilitate the categorization of relevant text elements to the specific code. One such standard example is provided in the following: “understanding of the employee is an essential prerequisite to properly conduct communications.”

Moreover, further categories such as *communication channels* or *methods to reduce silence* were formulated if individual statements could not be assigned to the existing coding categories. According to Mayring and Fenzl (2019), the coding process applied can be depicted as content-based structuring. After the first coding process, all transcripts were analyzed once more (iterative manner) to identify further relevant information and to reassess the previous allocation of coding. The results of the data analysis are outlined in the chapter after addressing the quality criteria regarding the qualitative research.

Results of pre-study 1

Within the next chapter, the results of the first pre-study will be outlined. First, the organizational context will be described, in which the phenomenon of silence is assumed to appear. Subsequently, results regarding the interrelation between employee silence and the top management as well as the impact of leadership styles on silence behavior will be outlined. In the last part of this sub-chapter, the results of pre-study 1 will be critically discussed and a short conclusion is derived.

Silence context

All respondents were able to report and to specify radical change processes within their organization (e.g. restructuring, outsourcing, liquidation). Hence, the premise of this pre-study to investigate the phenomenon of employee silence within a change context was confirmed. Seven out of eight interviewees reported to have experienced silence behavior within the particular change process. Respondents

suggested that the change process increased silence within their organization as already existing communication issues got worse and were impossible to compensate. In addition, most respondents also reported that silence induced by change processes also caused high levels of frustration, disinterest, and resignation.

“The worst thing is when you have people who go into internal migration. That is very bad. It is unbelievable how in this way energy gets destroyed. But that happens in every company, not only in our company” (Interview 5, Bank A, Par. 67).

It was also mentioned that radical forms of change processes, such as disruptive transformation of business models tended to increase change-related issues and lead to a higher level of withholding information, concerns and problems among employees or even sabotaging the ongoing change.

“Resistance can be verbal (...) but when it comes to information and decisions on certain topics or about certain teams, some departments either delay, prevent, or withhold information intentionally” (Interview 8, Bank C, Par. 24).

However, other respondents communicated that business model innovation also might lead to increased participation and engagement into the change process and not necessarily to employees remaining silent. The speaking-up behavior and high level of engagement, however, led in some cases to increased workload and strain for managers, which in turn resulted in silence among the managers and in an inability to consider all ideas provided by the employees.

“I don’t have time to answer it. It ends up with me and stays there for a certain time. Interesting topics are proceeded further. But I don’t have any capacity and I don’t get any. So, what should I do with it? The ones that are ok, there could be something behind it or that are important, of course I answer them” (Interview 4, Mechanical Engineering, Par. 6).

In this regards, one interviewee argued that silence behavior would not be apparent at an early conceptual stage of the change process as its organizational consequences do not primary affect the individual's sphere yet. But when change is shifting from an organizational to an individual level (e.g. reallocation of requirements and competencies), the phenomenon of employee silence would become more apparent.

To summarize, a great majority of the interviewees did not just report a current change context, but also experienced employees remaining silent about issues or problems at work for various reasons (e.g. frustration or disinterest). They also could name situations in which people felt unable to speak up to their managers, or in case they did, were not taken seriously and with the expected level of appreciation. On the other hand, silence behavior seemed to not be stable but rather evolve over the entire change process and becomes a significant issue when the change has a direct negative impact on employees. Therefore, findings indicate that change processes evoke – and in some cases exacerbate – employee silence, which in turn negatively impacts the (necessary) change process by either slowing down the transformation, withholding relevant information, or even sabotaging the execution of change.

Interrelation between employee silence and top management behavior

All interviewees stated that the top management of their organization had a large influence on the climate of communication and silence within the change process. Most respondents assigned the responsibility of creating a positive communication climate and communication behavior to the top management role and highlighted their role model function.

“It changes the entire climate in the organization. Lower levels of the organization adopt and react to the behavior of the top management. That's very clear” (Interview 7, Bank B, Par. 40).

With reference to creating a positive and supporting climate, and to prevent a climate of fear and distrust, top management but also middle management should display a congruent behavior and mindset. In certain cases, they also should ensure this with all consequences on the compliance with rules, norms, and behaviors. In this regard, some interviewees reported a climate of silence and poor communication culture within their organization driven by fear, distrust, frustration, and resignation:

“Yes, it is a culture of fear, I know that very well. Yes, here in the company, it is also common practice that somehow you don’t tell the truth, that you are not allowed to say it. Because it is not desired, that’s it” (Interview 1, Mechanical Engineering, Par. 60).

In this sense, top management might cause this particular climate due to (1) its persistent neglect of self-formulated regulations and requirement, as well as (2) its negative reactions towards critique and the way of dealing with sensible topics. The interviews also suggest that employee silence is notably prevalent in the presence of high-ranked managers. This accounts to a certain extent independently of the actual communication behavior of the employees. In one case, employees even withheld their opinion and information when proactively invited by the top-management to share it. This demonstrates the challenge of breaking employee silence once it is established, even if the underlying motives are well known. In addition, many interviewees also experienced a natural precaution and reluctance of employees within their organization when speaking to top-management compared to meetings without the management. However, top managers are required to create an environment of open communication and a climate of psychological safety without any fear of being labelled negatively, to damage a relationship or the feelings of futility. This is mentioned by respondents as a prerequisite for breaking silence in their organization:

“It presupposes that you also have bosses at the top who are willing to listen to other voices and opinions. (...) there must be at least one per-

son (in a company) who dares to speak his mind without being sent directly to the siding by the manager. Unfortunately, that is often not the case. In certain organization, people get promoted if they are compliant. (...) that is the direct path to the communicative one-way street” (Interview 5, Bank A, Par. 1).

Hence, top managers as role models, as well as organizational norms, informal rules, and communication practices determine the employee silence behavior extensively.

The impact of leadership styles on employee silence

Regarding the LMX relations, seven out of eight interviewees highlighted the importance of good relationships between followers and supervisors and its specific effects on the silent behavior of individuals. Mutual understanding and trust as well as loyalty play a significant role, especially when it comes to raising critical issues or voicing controversial ideas. Respondents also stated that an intact relationship increases the level of involvement and initiative. However, leaders should also consider that building a certain level of relationship to all employees should not mistake unconditional commitment and fellowship for loyalty. Otherwise, this would lead to partial silence among the team as critical questions and comments would decline, with negative effect on an effective decision-making process. On the other hand, managers reported that paying not enough attention to employees or neglecting them has a negative impact on the relationship itself and increases the likelihood of employee withholding issues, concerns, or opinions.

“This can have many effects [remaining silent], especially those that have a direct influence on the work, on the well-being. The first thing an employee does is to resign. (...) he [employee] may have made a few suggestions, doesn’t get anywhere, perhaps doesn’t feel recognized in the way he would like to, and he says: no, come on, I am fed

up, I will leave it alone. Then they do their thing and that is it” (Interview 5, Bank A, Par. 45).

Some interviewees also provided an explanation why employees were reluctant of sharing ideas or information with their supervisors. In those cases, employees did not speak up as in the past their managers were labelling their ideas and innovation as their own. This behavior damaged the relationship and mutual trust.

“Some of the team leaders like to peddle with ideas that came from a coworker and tried to make their mark upwards with other people’s ideas” (Interview 6, Bank B, Par. 26).

“And even if good ideas (...) get through, you can be sure that the team leader or branch manager will sell them as their own” (Interview 6, Bank B, Par. 6).

Especially in the context of business model transformation, employees should be encouraged and motivated to provide beneficial ideas that support the organizational transformation process. The findings also proved that good LMX relationships can prevent and reduce quiescent silence. However, the differentiation between quiescent and acquiescent silence as well as their effects on the individuals’ behavior was difficult to extract within the interviews. In most cases, respondents were not able to identify whether observed or self-experienced behavior of employee silence was anchored in the state of resignation or not. However, findings reveal that trust, and the strength of the relationship between manager and employee are crucial. In addition, offering opportunities in an environment of psychological safety could break the silence behavior of employees. Consequently, a high level of relationship between follower and supervisor as well as the creation of safe communication opportunities could reduce both, quiescent and acquiescent silence.

With reference to the investigated leadership styles, transformational and authentic leadership have shown a negative effect on silence. In particular, personal relation-

ships in which leaders consider each employee individually promotes a high-quality LMX relation and proved to have a direct effect on the speaking-up behavior of employees. It should be mentioned that interviewees were in most cases not able to clearly distinguish between transformational and authentic leadership, as some characteristics of both styles are conceptually overlapping. However, trust, fair treatment, involvement, motivation, cooperative behavior, as well as acting as a role model were key elements of displayed transformational leadership.

“We maintained a kind of cooperative management style, we are supporting people. I claim for myself that I promote open communication, encourage people to express themselves and even if they have points that bother them, to communicate them” (Interview 1, Mechanical Engineering, Par. 50).

In addition, leaders showing an authentic leadership style were able to gain a trustful relationship in which employees could communicate problematic issues and valuable ideas than rather remaining silent. Those leaders were also described as involving employees into decision making process by encouraging and motivating them, but also showing the ability to be open and self-reflect when employees shared critics towards them. Additionally, these leaders provided personal and open explanations in cases the input of the employee was not considered. However, one interviewee stated that even authentic leaders might become victims of their own organization, especially when they are not able to justify the organization's actions and eventually escape into silence behavior themselves in order to neither betray the company nor the employees. To summarize, both positively connotated leadership styles – transformational and authentic – can reduce or even prevent employees to become silent due to their characteristics.

In contrast, respondents reported that autocratic leadership styles were triggering acquiescent and defensive silence in their subordinates. Most interviewees were able to describe situations in which leaders with an autocratic leadership style were associated with acquiescent or defensive silence, and in turn caused signs of resig-

nation or defensive behavior. As outlined before, in certain situation the leader's autocratic behavior manifested in opportunistically taking advantage of their higher status within the organization, resulting in quiescent silence when they labelled other's ideas as their own. Neglecting, not involving, and not valuing employees also resulted in frustration and defensive behavior, in certain cases even in resignation. In the day-to-day life, interviewees portrayed examples of such managers actively trying to limit the participation and verbal input of subordinates as well as destructively criticizing them. Consequently, the level of acquiescent and quiescent silence increased and, in some cases, even transformed into a climate of silence without space for psychological safety. In other situations, interviewees reported about their intention to quit their jobs, falling into such a strong resignation that they withdrew psychologically or even created coping mechanism to escape the situation by excessive physical coping mechanisms (e.g. running a marathon). One interviewee described the situation very ostensive:

“The atmosphere must have been terrible and [there must have been] lot of silence. No one dared to say anything because, as I said, the lady [manager] had played (...) her power and they [subordinated] preferred to cower and say to themselves: “hope and pray nothing happens until the boss is back. (...) Yes, they were completely demotivated, no motivation at all” (Interview 6, Bank B, Par. 32).

Further on, the interviewee also outlined the climate of psychological abuse:

“[subordinates] were already dreading the moment when they heard that the boss would go on a four-week vacation. They already had a stomachache two weeks beforehand” (Interview 6, Bank B, Par. 32).

Critical discussion and conclusion

The interviews conducted revealed that employees withhold relevant information, issues or concerns and remain silent for multiple reasons. The main reasons for employee silence were reported to be (1) fear of being labelled negatively (trou-

blemaker, complainer), (2) fear of losing trust, respect, acceptance or support, but also (3) the belief that speaking up will not make any difference as the recipient will not be responsive (feelings of futility), as well as (4) the fear of retaliation or punishment (losing the job, not getting promoted). The effects resulting from this silent behavior were manifold: inefficient decision-making processes, insufficient transformation process support, low level of motivation, engagement and participation, or even harmful psychological repercussions such as resignation and psychological withdrawal. However, it was also revealed that managers with their associated leadership style have a great impact on the evolvement and spread of silence behavior. Therefore, positive connotated leadership styles can reduce or even stop the growth of silence behavior within the organization. On the other hand, autocratic leaders tend to not only cause inefficiency, discontent, and low level of well-being, but also produce spillover effects from the subordinates' professional into the private sphere – expressed by acquiescent and defensive silence.

In addition, the first pre-study showed that silence behavior, compared to speaking up, is based on different underlying motives, and can be understood as a multifaceted construct. However, the distinction between the different forms of employee silence turned out to be rather difficult in terms of observation and identification of the particular behavior in practice. Furthermore, the statements and explanations of the respondents also clearly addressed the destructive influence of silence on employees without any clear boundaries (private and business) as well as its contagiousness within the organization – growing from an individual behavior up to an organizational wide phenomenon (organizational silence) and therefore causing tremendous mischief. This accounts especially in certain phases such as change management processes, where open communication and input (positive or negative) from every employee is highly valuable and necessary. Consequently, the first pre-study provided important insights for the understanding and the mechanisms of employee and organizational silence, also with respect to the main quantitative study of this thesis.

II.2 Pre-Study 2 – The Impact of Strain and Injustice on Silence in the Healthcare Industry

In contrast to the first pre-study, the second pre-study aims at investigating different aspects of silence within a hospital as a non-traditional business context and is based on the Job Demands-Resource (JD-R) model (Bakker & Demerouti, 2014). Taking the continuously increasing economic pressure of hospitals into consideration, the resulting strain on employees, and the rigid hierarchical structures, this specific environment is well suited as a breeding ground for employee silence and its investigation. So far, multiple studies have used this specific environment to examine the relevance of employee silence. The scope of investigation ranges from (1) exploring the impact of leaders of interdisciplinary action teams in operation rooms on the promotion of speaking up (Edmondson, 2003), (2) examining less obvious factors contributing to organizational silence serving as threats to patient safety (Henriksen & Dayton, 2006), or (3) analyzing major health care failings due to persistent cultural dysfunctions resulting from employee silence (Pope, 2019). All studies have shown that employee silence significantly contributes to the dysfunctionality of hospitals, with major negative impact on their patients and employees – ranging from resignation to psychological withdrawal or even burn-out. The combination of high demands and insufficient provision of resources often results in low motivation and high strain, ultimately shutting employees down in silence. Building up on these findings, this pre-study was conducted in a German hospital. Eight experts (nurses) were interviewed to (a) examine the existence (nature) and role of employee silence in this context and (b) its potential impact on lack of process improvement (innovation). In this regard, the study focuses on the definition of employee silence as withholding ideas, information, and opinions about work-related improvements (van Dyne et al., 2003, p. 1361). Consequently, the study analyzes the impact of certain antecedents of employee silence (work stress, perceived injustice, fault tolerance) on the nurses' decision to speak about potential improvements in their professional work-related context or remaining silent.

Sample description

The anesthesia department of a German hospital was selected as research context. Although hospitals have been exposed to dynamic and turbulent challenges for years, the organizational structure of most hospitals has remained almost unchanged, which also accounts for the referred hospital in this study. In principle, the structure of hospitals consists of three main pillars; the medical, nursing, and administrative staff – each represented by a director. Those groups are in contact and exchange with each other through various defined directive authorities. This is resulting in an established hierarchy among the hospital's employees and determines the day-to-day operations to a large extent. These hierarchical interrelations often lead to complex goal conflicts, which are additionally reinforced by a lack of communication. Therefore, the organizational structure and culture of hospitals are typically characterized by a rigid hierarchy, strictly formalized rules and norms, and a top-down communication. For the study's investigation purpose, eight experts representing the nursing staff were interviewed according to consciously-chosen – and by scholars-supported – criteria: first, compared to the medical and administrative staff, nurses account for the largest personnel group within the anesthesia departments, and therefore provide a good reflection of the working atmosphere. Second, taking the hierarchical level and working conditions (high demands; low level of resources) of this occupational group into consideration, nurses are predestinated to be investigated concerning the phenomenon of silence. The gender of the sample was equally distributed. The average age of the interviewees was 39,5 years (min = 29 years; max = 50 years). The average tenure of the nurses was around 7 years (min = 6 months; max = 14 years). All interviewees were personally informed about the study in advance due to its sensitive research topic. Afterwards, further information was provided to the participants through a cover letter. No incentive to participate was given.

Data collection and interview protocol

A semi-structure interview guide was developed for the interview conduction. The questions developed focused on the examination of antecedents and effects of employee silence among nurses. Relevant questions were developed based on literature reviewed in this context and on the JD-R model as a theoretical framework. The interviews lasted between 37 and 65 minutes and were all conducted in German. Furthermore, all interviews were recorded on tape and participants were informed about the anonymous data evaluation. Therefore, no conclusion about the respective person could be drawn. With respect to the data analysis, every recording was listened to twice to capture all relevant data. The semi-structured interview guide appears in the appendix 3 and is structured as follows: first, questions regarding a typical working day and its structure is asked in part A to set the stage for the interview and to create a dialogue atmosphere. The next questions in the interview guide (part B) referred to the JD-R theory as a main theoretical framework of this pre-study. Following the JD-R model, different components (demands and resources) of the daily work were investigated. Those can potentially be considered as antecedents of employee silence. Hence, questions were aiming at investigating whether work stress, perceived injustice and fault tolerance would lead to exhaustion of the nurses due to the high demands within their working context. On the other hand, participants were asked which resources (e.g. standardized processes, qualifications, support from the supervisor) would positively influence their work engagement and motivation. Consequently, interview questions of part B were addressing the dual-pathways of the JD-R theory. In the last part of the interview (C), the topic of silence behavior was addressed, with a particular focus on its nature and characteristics (e.g. acquiescent, quiescent, prosocial, opportunistic silence), as well as its antecedents and effects. The sub-constructs of employee silence were defined according to Knoll and Dick (2013). Interviewees were also asked whether silence resulting from high working demands and low provided resources would lead to low engagement in speaking up about work related im-

provements (e.g. optimization of processes, routines, wrongdoings). The overall goal was to gain further insights regarding (a) the nature and characteristics of employee silence (antecedents and effects), (b) its relevance in the nursing context on the communication of work-improvement ideas, and (c) the investigation of the JD-R's theoretical and explanatory contribution to the overall subject of silence behavior.

Content coding and data analysis

Every participant was asked the entire set of questions and the interviews conducted were recorded and transcribed. The coding process was applied by using MAXQDA. All communication was transcribed, with the exception of conversational particles (e.g. mhhh or ähhh). The interview analysis process (Kuckartz, 2014; Mayring & Fenzl, 2019) was based on the procedure according to pre-study 1, including a deductive process for the development and refinement of a coding scheme. The coding scheme contained inter alia the operationalization of employee silence and its sub-constructs (acquiescent, quiescent, prosocial, opportunistic silence) according to Knoll and Dick (2013), work stress (Dedahanov et al., 2016), perceived injustice (Greenberg, 1987; Greenberg & Colquitt, 2005), fault tolerance and the provision of work-related improvements by speaking-up behavior. In line with pre-study 1 and due to the novelty of the silence concept, the definitions of the coding categories were explicitly intended to be including rather than excluding. The coding system and data analysis were applied according to the quality criteria outlined above and in alignment with the process applied in pre-study 1.

Results of pre-study 2

The following chapter outlines the findings of the second pre-study, including quotes from participants, as well as a short discussion and conclusion. As mentioned before, part A and B of the study were supposed to lead towards the actual survey context, focusing on the investigation of employee silence in the deter-

mined research context. Hence, results of part C will be summarized focusing on (1) antecedents of employee silence, such as job demands (work stress, perceived injustice, fault tolerance) and (2) its effects on silence and voice behavior regarding work-related improvements (e.g. process optimizations, enhanced communication lines). Subsequently, (3) options for reducing silence within the nursing context will be presented.

Based on findings from part A and B, all interviewees experienced high levels of demands within their current work setting, such as grievances or inefficient processes. Participants also stated that these demands led to demotivation, work stress and high level of strains. However, most of the respondents agreed that addressing these disruptive and demotivating issues often did not result in required changes. In alignment with the definition of employee silence by Pinder and Harlos (2001), the communication of issues, problems, concerns or ideas was mainly directed to persons (supervisor, manager) who are perceived to be capable of effecting change or redress. Other participants added that they used to communicate concerns or ideas for improvement to their managers more often in the past, but concrete change initiatives were very rare and disappointing. Hence, resignation and low motivation to address issues and ideas was prevalent. In this context, participants stated:

“I have addressed it [issues, ideas] again and again, but somehow I notice there is just little happening. Now, I am rather resigned and think I will just do what is expected. I go and do my job. But I don’t feel like getting involved at the moment” (Interview 7, Hospital, Par. 13).

Additionally, issues or ideas were in many cases discussed with peers on the same hierarchical level, but the claim was characterized by upward communication.

“Well, I mainly discuss this [issues, ideas] with colleagues from nursing. I sometimes also report to the head physician or to my ward man-

ager, but that is really it. It wears you down because it does not have any impact at all” (Interview 6, Hospital, Par. 11).

Another interviewee uses way more drastic words to describe his/her work situation:

“I used to have the energy to do something, to elucidate people. Now, I just do not care, I have simply given up. Nowadays, if someone thinks they must be stupid enough to do the job [nursing], then let them. But if he should ever complain, not to me” (Interview 3, Hospital, Par. 15).

More interviewees supported these statements, reported feelings of resignation and highlighted that speaking up about issues, concerns or ideas for improvement is not worth the effort. Some stated that they “de-trained” the behavior of speaking up and decided consciously to remain silent for their own sake. However, employees did not just decide to remain silent because they did not find a sympathetic ear, but because supervisors were explicitly not open to proposals and concerns, therefore pointing to the fact that nothing will change anyway (acquiescent silence). On the other hand, the maturity and status of the relationship between the employee and manager influenced the speaking up decision about high working demands and the associated perceived stress.

“Because I do not know her that well yet, (...) I don’t know how she reacts to criticism. I have the impression that she could be offended, and I might experience this [with negative consequences] in the shift planning. That is why I don’t do that” (Interview 4, Hospital, Par. 13).

The topic addressed and supported by this interviewee is in alignment with the reasons for not speaking up about concerns provided by Milliken et al. (2003, p. 1462), such as (a) fear of being labelled negatively (e.g. troublemaker or complainer), (b) fear of damaging a relationship, or (c) fear of retaliation or punishment.

Focusing on the demands, findings revealed two main categories of perceived stress: *time pressure* (resulting from peers, supervisors, or patients) and *emotional stress*. Respondents stated that due to the characteristic of their department (anesthesia) the perceived pressure induced by time is relatively lower compared to other hospital's departments. Other interviewees indicated that time pressure and thus perceived stress increased compared to the past and that the workload is very volatile. Interestingly, time pressure did not seem to be a major reason for employees not communication issues, concerns, or ideas to their supervisors. Just one interviewee explained that they are too exhausted and do not have time to speak up about work-related improvements. On the contrary, most participants made clear that lack of motivation and appreciation, along with the fact that nothing would change anyway and therefore would not be worth the effort, are the main reasons for remaining silent. In this context, it also was reported that in certain peak times there are not enough resources to handle all the work necessary. This circumstance was addressed multiple times and the management was aware of this situation, but nothing changed so far. Consequently, employees reduce feedback and alignment loops with their supervisors and rather decide to make their own decisions.

“Yes, yes, that could be the case [time pressure, not enough resources]. Yes, of course, sometimes you are giving it some thought and then you just do it the way you think it is right and you do not communicate that widely, you put it away and let it be” (Interview 2, Hospital, Par. 27).

Other nurses responded that they were afraid to make mistakes due to low resource capacity (staff) within peak times, but consciously decided to not report it.

Compared to *time pressure*, *emotional stress* was reported to occur in form of disagreements in the team and was mainly driven by personal reasons. Some interviewees stated that it can be a mistake to intervene in case of conflicts or to communicate one's own opinion. As a result, one reported to have been labelled as

troublemaker resulting in damaged relationships and losing trust, respect, and acceptance.

“I am really completely out of it [the group]. I am no longer asked to join for a café. So, I notice that they do not disrespect me, but I notice that they keep me out of it” (Interview 6, Hospital, Par. 51).

Other respondents also confirmed a tendency to avoid group and personal conflicts and in certain situations just leave issues unaddressed. Intriguingly, team members communicate these intra-team conflicts very rarely to their supervisors and do not reach out for support or mediation. One respondent added that their supervisor is mostly aware of these conflicts but deliberately stays out of these situations himself. In addition, power struggles between the middle and top management create an even more complex scenario. Those insights indicate that team members do not preferably share team-conflicts with their supervisors due to prosocial silence motives (e.g. bringing others into trouble, hurting feelings of colleagues). They rather remain silent to protect themselves (quiescent silence) from negative consequences or the fear of experiencing ostracism (e.g. social exclusion) as they are convinced they will not get support from their supervisors. Next to *time pressure* and *emotional stress* induced by conflict situations, also *demanding job characteristics* of nursing patients were mentioned to be a stressor.

Findings regarding the impact of *perceived injustice* on employee silence were distinguished by the different workplace justice dimensions (relational, distributive, procedural, contextual). Besides one exception, all interviewees stated to have experienced *relational injustice* on different levels: colleagues, supervisor, and society.

“The climate within the department is not very good. We used to be much more of a team. Now, the climate has changed. Yes, the relationship with each other is not very good, and I also notice that the super-

visor is not a good role model and very present. And things such as appreciation (...) we do not receive” (Interview 6, Hospital, Par. 51).

Respondents were able to name various reasons for this perception. First, the supervisor avoids critiques regarding their managerial skills. Second, employees are not taken seriously in meetings, especially regarding their concerns or ideas. Lastly, communicating those concerns, issues or problem are being trivialized on purpose. Multiple interviewees concluded that such low level of appreciation and attentiveness as well as perceived injustice due to the misbalance between input and outcome, resulted in resignation, lack of motivation, decreased job satisfaction and ultimately in the decision to remain silence, mostly driven by self-protection.

“I have already communicated it so often and nothing changes. That is why you communicate less and less (...). So, you simply resign. And you also start putting things in perspective. (...). But I think that is a kind of self-protection, that at some point you decide, that I don’t have enough energy left to say anything, because nobody takes me seriously. I am more likely to be laughed at” (Interview 6, Hospital, Par. 19).

The nursing staff also indicated with respect to the communication and work interaction with employees of different hierarchies, such as doctors, that they received only little appreciation. On top, their opinions were neither desired nor considered.

“At work, you sometimes get the impression that you are a second-class employee. And I am honest and say: if it is nothing serious, the doctor must know for himself what he does. If I notice something serious, then of course I talk to the doctor.” (Interview 6, Hospital, Par. 19).

Based on this, many interviewees stated to rather remain silent towards their supervisors in terms of addressing issues, problems, or ideas due to self-protecting measures. Compared to high levels of *relational injustice*, participants experienced more *procedural justice* within their workplace. On one hand, a few interviewees

said that in team meetings they are offered to speak their mind and to participate in the decision-making process. On the other hand, some participants outlined to have been neglected and not been taken seriously. It was also mentioned that the impact a nurse can have on process improvements in the hospital is very limited. Hence, in certain situations the opinion is asked, and information are shared (*contextual justice*) but the decision will be made without the nursing staff, with negative consequences on the participative and speaking up behavior. As a result, resignation was often reported. In terms of *distributive justice*, a mixed picture was provided. Some participants reported to have enough resources to fulfill their job requirements and to deal with associated demands. Other interviewees complained about other factors such as low remuneration or the feedback culture within their work environment. So, the lack of appreciation regarding their concerns and ideas was raised again.

The interviews conducted revealed that *fault tolerance* does not significantly contribute to the development of employee silence. Normally, the nursing staff owns sufficient resources (e.g. time) to avoid doing mistakes on the job. However, errors may still occur, especially during certain peak periods. Interviewees indicated to remain silence about wrongdoings occasionally.

“You just don’t want to look like a weakling. You know that others feel the same way, but no one wants to admit it [errors]. But you can see it [observed wrongdoing]” (Interview 4, Hospital, Par. 81).

Another interviewee added to also remain rather silent in such situations for protective reasons and to avoid negative consequences. With regards to observed wrongdoing, some interviewees stated to report the observed wrongdoing to their supervisor to not incriminate themselves. In addition to the topic of *fault tolerance*, more than half of the interviewees evaluated the *existing processes* and *workflows* as positive. Challenges when following given processes usually arise due to the collaboration with colleagues. On the other hand, participants complained about increasing demands resulting from administrative work duties, such as file man-

agement and documentation duties. Many participants argued that these grievances have been voiced multiple times without any reaction or initiative from the supervisor. Other respondents added that they consciously withhold information and ideas to improve processes to avoid being labelled as a troublemaker or “smartass”. In addition to these issues, the nursing staff mentioned further demands causing perceived stress: determined procedures, established hierarchical structures, individual requirements of patients. In combination with primarily horizontal directed communication channels, low level of motivation for speaking up behavior, lack of appreciation and participation opportunities, as well as peak times, the demands and associated stress of nurses can be considered as high. However, certain resources are provided to the nursing staff to perform their job, but the provision of further resources (e.g. higher remuneration, support and feedback opportunities from supervisors, higher appreciation of work and commitment) is scarce. This results in a lack of motivation and to high levels of strain, leading to employee silence in forms of self-protective behavior and resignation. Addressing the question of how silence could be broken, most of the interviewees argued that sincere appreciation could be considered as an icebreaker. In this regard, it should be mentioned that employees differentiate very clearly between superficial and sincere appreciation.

“For that, I would have to believe that I am being taken seriously. Already now, they want to give me this feeling [appreciation] in conversations again and again (...). But I just do not believe that anymore. I see it more as an insult because I think, they think that I do not notice that they are winding me up. (...) Hence, I don’t think it is possible (to break the resignation) as too much has already been gone wrong and is broken in that respect” (Interview 6, Hospital, Par. 93).

Another interviewee follows in the same vein with very direct words:

“Some kind of commendation at the Christmas or summer party and a little pat on the shoulder, they can save that too. And if appreciation

serves to make me even more exploited, then I don't care" (Interview 6, Hospital, Par. 93).

Critical discussion and conclusion

Findings of the second study revealed that the work of nurses is characterized by multiple facets such as high complex working requirements, time pressure, established hierarchical structures and workplace processes, low remuneration, lack of appreciation, or individual requirements from their patients. According to the JD-R theory (Bakker & Demerouti, 2007), all these job characteristics lead to specific job demands which can result in strain for employees. All participants confirmed in the interviews that they were confronted with these demands in their work environment, leading to certain strains such as (a) perceived working stress (time pressure, emotional stress, administrative workload), (b) perceived injustice, and (c) dealing with (perceived) wrongdoing and errors.

Perceived working stress could be operationalized as time pressure and emotional stress. Especially emotional stress, such as disagreements, intra-group conflicts, or neglected support from supervisors and feedback opportunities led to strains among the nurses. As a result, nurses reported to shut down in silence and to fall into resignation as the upward communication was not taken seriously and nothing changed in response to their speaking-up behavior. It was also reported that some employees "de-trained" themselves from speaking out their concerns, problems, and ideas.

With regards to perceived injustice, interviewees stated to feel not being taken seriously with speaking out issues and ideas and that supervisors trivialized these statements. This lack of appreciation and attentiveness led to a lack of motivation, decreased job satisfaction, and resignation. Most interviewees remained silent as a self-protective behavior to avoid getting hurt or receiving negative consequences. The findings also showed that the interviewees decided in response to these work

demands to withhold their ideas, concerns, or problems regarding work-related improvements rather than to speak up. The main reasons for remaining silent – and in alignment with Morrison and Milliken (2003) – participants mentioned:

- (1) fear of being labelled or viewed negatively (e.g. troublemaker, complainer),
- (2) fear of damaging relationships or to lose trust, respect, or acceptance,
- (3) feelings of futility as speaking up is not worth the effort and will not be heard,
- (4) fear of retaliation or punishment.

The study also revealed that resources provided (e.g. higher remuneration, support and feedback, improved communications, appreciation) were able to buffer the strains perceived to a certain level (e.g. reduction of time pressure through more personnel resources). However, most mentioned strains and the high levels of resignation – resulting in acquiescent silence – cannot be easily buffered or broken by the provision of resources. Interviewees argued, that “breaking the silence” is just possible by sincere appreciation, attentiveness, support on the job (incl. feedback) and by taking the communication of ideas, concerns, and problems serious with certain effects in change initiatives. In this context, the JD-R theory could proof its explanatory strength and contribution within the context of employee silence. The results also supported the dual pathways of the theory as well as its buffering effect.

Consequently, both pre-studies, conducted in two very different working settings and research focus could validate the existence, relevance, and importance of employee and organizational silence. In addition, certain antecedents and effects of silence behavior could be revealed and investigated with value-adding insights. Those findings are benefiting to the main study of this thesis, especially with respect to the development of the structural equation model (SEM) and the legitimation of its variables.

III. Theoretical Frameworks

Following the literature review and pre-studies conducted, the next section will outline two prominent and widely tested theories in research: Job Demands-Resources (JD-R) model and the Theory of Planned Behavior (TPB). Regarding this thesis, representing first, and then combining both theoretical lenses (JD-R model and TPB) is meant to create a high added value in terms of advancing new and existing insights, examining novel hypotheses, and subsequently testing these hypotheses empirically (chapter III.4 and chapter IV.2). To do so, in chapter III.2 the JD-R model will be explained into detail, including the aim and relevance, former developments, core elements and their interplay as well as empirical evidence showing the applicability of the theory and its implications for future research.

A similar approach is chosen for the TPB in chapter III.3. The comprehensive representation of both theories also aims at highlighting their compatibility suitability. Blending both theoretical frameworks in the scope of this thesis allows to create an advanced basis for the empirical investigation in chapter IV. Therefore, chapter III.4 is providing argumentative information regarding the combination of the JD-R model and TPB. Based on that, the hypotheses for the empirical investigation will be deduced against the background of the combined theoretical framework (chapter III.5). The entire section is closing with an interim conclusion III.6. This serves to recapitulate the central findings of the entire chapter III.

With reference to this very concrete research context, the following section outlines two central theories, which not only offer a high degree of explanation by themselves, but also allow to design through their combinatorial fit the basis for the structural equation model (SEM). The application of both theoretical concepts – individually as well as in combination – in the context of voice and silence is very limited. Therefore, the combination of both theoretical lenses and the subsequent empirical examination of hypotheses derived through the SEM can be con-

sidered as novel and aims at generating added explanatory value as well as providing further research contributions.

III.1 Combination of Theoretical Lenses

Combining lenses of different theories and therefore examining relevant research questions through a variety of perspectives is quite common in management research where various insights from different disciplines such as sociology, psychology, economics, law, political science, and communication are used to understand and explain particular aspects of managerial issues. Hence, the combination of theoretical lenses from inside or outside of one specific research area offers a broader and deeper understanding of mechanisms and underlying aspects – especially as the level of complexity of management research is increasing and therefore requires explanations that match this level of complexity (Okhuysen & Bonardi, 2011, p. 6).

In some cases, one theory on its own is not capable of capturing all the complexity given by a certain research topic. Moreover, any combination of ideas or blend of theories aims at creating novel insights and at developing new hypotheses that can be investigated through empirical research methods. Another reason for the growing application of combining theories is the increasing relevance of our ability to reflect the reality of management by corresponding theories (Okhuysen & Bonardi, 2011, p. 6). These calls for “scholarship that matters” and high levels of relevance have been raised by multiple researchers such as Özbilgin (2010) and Cummings and Worley (2008). Currie et al. (2010) added that the need for the development of theoretical perspectives by the combination of multiple lenses has become more urgent. This makes possible to examine organizations on a macro and micro level as well as to criticize the practice of management in a healthy way. On the other hand, combining theories also helps to escape the tendency of creating isolated silos of knowledge (Burrell, 1996) which are limiting the development of management as a research area (Pfeffer, 1993). Hence,

“Multiple-lens perspectives can help bridge silos within and across disciplines: by highlighting areas of overlap or complementarity, as well as sites of contradiction, a multiple-lens perspective can lead to their theoretical integration or resolution” (Okhuysen & Bonardi, 2011, p. 6).

Nevertheless, blending theories is not an act of coincidence. Based on reviewing multiple manuscripts that combine different theoretical lenses, Okhuysen and Bonardi (2011) have defined two concrete dimensions that describe the relationship between the lenses that are combined: (a) the *proximity* of both theories with regards of the phenomenon they thematize (defined as the conceptual distance between the phenomena in their original conception) and (b) the *congruence* of the underlying assumptions (degree of *compatibility*). The *compatibility of assumptions* is defined as the level to which the combined theories are build on certain properties in the development of their explanation, such as

“similar or dissimilar individual decision-making processes [or] organizational mechanisms” (Okhuysen & Bonardi, 2011, p. 7).

Consequently, overarching theoretical lenses are just compatible if they rely on common assumptions. Nonetheless, the successful combination of theories is not automatically granted by the pure circumstance of both dimensions (proximity and compatibility), but rather used as one set of parameters to design a matrix, which in turn offers four different types of combinatorial manuscripts.

Fig. III-1: Four types depending on the degree of proximity and underlying assumptions

| | | |
|-----------------------------|---|--|
| high Degree of proximity | (3) Close proximity of theoretical lenses / Low compatibility of underlying assumptions | (1) Close proximity of theoretical lenses / High compatibility of underlying assumptions |
| low Degree of proximity | (4) Wide apart proximity of theoretical lenses / Low compatibility of underlying assumptions | (2) Wide apart proximity of theoretical lenses / High compatibility of underlying assumptions |
| | low Degree of underlying assumptions | high Degree of underlying assumptions |

Source: adopted from Okhuysen and Bonardi (2011)

Following Okhuysen and Bonardi (2011) the table above describes each type of combination more into detail (see Figure III-1). Based on this, both theories in this research context (JD-R and TPB) can be evaluated and the development of a blended theory can be justified. The reasoning and theoretical combination process will be outlined in chapter III.4, after the presentation of both theories in chapter III.2 (JD-R) and chapter III.3 (TPB).

Fig. III-2: Characterization of different types of theoretical combinations

| Type of Combination | Characteristics | Challenges | Value | Application Example |
|--|--|--|--|---|
| (1) Close proximity of theoretical lenses / High compatibility of underlying assumptions | <ul style="list-style-type: none"> Both theories address a very similar phenomenon and share compatible underlying assumptions Deriving combinations of unresearched variables or processes Most common combination of both dimensions applied in AMR manuscripts | <ul style="list-style-type: none"> Articulation of sufficient novelty Depth to constitute a significant theoretical contribution Creating more value through empirical testing of the theoretical advance Option: expanding the scope of the theory to identify larger gaps or empirical testing | <ul style="list-style-type: none"> Approach to the development of original theories Strong capitalization on existing knowledge In-depth elaboration of the phenomena | <ul style="list-style-type: none"> Combination of institutional and resource-dependence theories to gain a better understanding of stakeholder management (C. Oliver, 1991) |
| (2) Wide apart proximity of theoretical lenses / High compatibility of underlying assumptions | <ul style="list-style-type: none"> Both theories do not address the same phenomenon, but share compatible underlying assumptions Display of some potential fit | <ul style="list-style-type: none"> Establishing enough credible purpose for the combinatorial fit Focus on the exploration of the joint perspective and its attributes - lack of clear purpose and objective Argument of novelty ("has not been done before") might be misleading and insufficient for motivation Too much distance between the phenomena addressed | <ul style="list-style-type: none"> Allows to explore different empirical questions by grounding the theoretical development Need for justification due to empirical investigation | <ul style="list-style-type: none"> Enriching the understanding of LMX by applying resource theories of social exchange (Wilson, K. S., Sin, H. P., & Conlon, D. E., 2010) |
| (3) Close proximity of theoretical lenses / Low compatibility of underlying assumptions | <ul style="list-style-type: none"> Both theories share the same phenomena of interest, but approaches use different underlying assumptions This combinatorial option is often used to develop a more robust explanations for empirical questions These empirical questions have normally been examined from multiple exclusive lenses | <ul style="list-style-type: none"> Bridging theoretical perspectives to form a coherent explanation for the phenomena under consideration Theories applied might be in competition with one another Option: identifying strengths and weaknesses of both theories allows to detect areas that might be not incompatible, but rather mutual supportive This approach also requires to state the own ontological position | <ul style="list-style-type: none"> Gaining a deep understanding of the phenomenon as the resolution of inconsistencies between theories due is required Investigating the scope and boundaries of each theory allows to identify places where further explanation is lacking These places allow the greatest theoretical leverage of new approaches | <ul style="list-style-type: none"> Redefining agency theory by incorporating a legal perspective (Lan, L. L., & Heracleous, L., 2010) Investigation of group behavior focusing on questions regarding temporality, group processes or nature of task (Marks et al., 2001) |
| (4) Wide apart proximity of theoretical lenses / Low compatibility of underlying assumptions | <ul style="list-style-type: none"> Both theories show great distance between the theoretical lenses and underlying assumptions are incompatible This combination can be considered to be the most difficult type of manuscript to draft | <ul style="list-style-type: none"> This approach requires two simultaneous discussions: (a) development of an overarching conceptual framework and (b) development of epistemological level <ul style="list-style-type: none"> (a): Having no integrative framework can detain pushing forward a type of theory that incorporates far off research areas for which assumptions are difficult to combine (b) Avoiding logical impossibilities by performing a deep discussion of how the combination of underlying assumptions The explanation of the fit of both theories is essential, as readers cannot be expected to draw the links easily on themselves This requires the author's ability to explain how seemingly disparate or unrelated theories fit | <ul style="list-style-type: none"> Deliberate connection of unrelated areas of research through careful elaborated arguments Providing an explanation of areas that have not been explored previously - theoretical antecedents might not be available yet | <ul style="list-style-type: none"> Transaction cost explanations of make-or-buy, vertical integration, strategic alliances (W. Oliver, 1975) phenomena are built on multiple lenses, including microeconomics, bounded rationality, and law |

Source: adapted from Okhuysen and Bonardi (2011)

III.2 Job Demands-Resources (JD-R) Model

From a macro but also historical perspective, the *Job Demands-Resources (JD-R) model* can be understood as a theoretical framework aiming at the integration of two concepts, the stress research and the motivation research as two fairly independent research traditions (Demerouti & Bakker, 2011, p. 1). In this context, research has put a lot of attention on the topic of stress but also on motivational factors in work settings during the past five decades. The approach aimed at trying to answer the following two questions: (1) what precisely triggers job stress and (2) what motivates people within their occupation (Bakker & Demerouti, 2014, p. 1). In order to answer these two questions, the *theory of job design* plays a central role but has in the past not kept pace with the changes occurring in the organizational landscape (S. K. Parker et al., 2001; S. K. Parker & Ohly, 2008). According to Hackman and Oldham (1980), former literature defined the concept of job design as quite narrow and inflexible. It was understood as a set of opportunities and constraints structured into assigned tasks and responsibilities which are affecting the employee's perception and accomplishment of work (Bakker & Demerouti, 2014, p. 1).

Nevertheless, job design scholars have conducted plenty of research in the past to investigate which job characteristics have a positive impact on the job satisfaction of employees, and moreover to highlight the motivational drivers for reaching organizational goals (Bakker & Demerouti, 2014, p. 1). In this context, studies have shown that job characteristics, defined by the actual job design, have a substantial impact on the well-being of employees (e.g. work engagement, burnout, job strain) (Bakker & Demerouti, 2007, p. 309). On the one hand, job demands such as high work pressure, emotional demands, or role ambiguity can cause exhaustion, impaired health, or sleeping problems (Doi, 2005; Halbesleben & Buckley, 2004). On the other hand, job resources operationalized as autonomy, performance feedback, and social support may lead to a motivational process resulting in job-related learning, organizational commitment, or work engagement (Demerouti, Nachrein-

er, et al., 2001; Salanova et al., 2005; Taris & Feij, 2004). Even though this research has created a comprehensive catalogue of potential antecedents of employees' well-being, theoretical advancement with respect to contemporary job challenges and demands is still limited (Bakker & Demerouti, 2007, p. 309). But, especially in our today's world of high levels of volatility, uncertainty, complexity, and ambiguity, also job profiles, characteristics and requirements have changed radically. To name just a few, this includes increased global competition, new types of work enabled by technologies and digitalization, growing work in the service sector, more individualized career paths and big changes on the composition of workforce (S. K. Parker et al., 2001, p. 413). Hence, job design should be defined in a broader manner as

“encapsulating the processes and outcomes of how work is structured, organized, experienced, and enacted” (A. M. Grant et al., 2011).

Consequently, this broader definition of job design according to A. M. Grant et al. (2011) allows to understand job roles as dynamic and emergent as opposed to merely emphasizing static job descriptions composed of fixed tasks assigned by the management (S. K. Parker et al., 2001). These fundamental changes in job designs within our today's work environment, their impact on how employees are performing them as well as the associated role of job stressors and demands have often been ignored by job design theories. Additionally, the motivational potential of job resources have largely been disregarded by job stress models (Bakker & Demerouti, 2014, p. 2).

As a response to that, the JD-R model (Bakker & Demerouti, 2007; Bakker, Demerouti, Boer, & Shaufeli, 2003; Bakker, Demerouti, Taris, et al., 2003; Demerouti, Nachreiner, et al., 2001) relies on the general assumption that every profession retains its own particular job design and hence its own specific risk factors linked to job related stress. Therefore, the JD-R model contributes explaining the unique and multiplicative effects of job demands and resources on both outcomes, job stress and motivation (Bakker & Demerouti, 2014, p. 2). As already

indicated above, the literature generally classifies these factors in two categories: job demands and job resources. In that regard, the JD-R model offers an overarching framework that can be applied to various job settings, irrespective of the specific demands and resources involved (Demerouti & Bakker, 2011, p. 2). In order to understand the overarching mechanisms, functioning and purpose of the JD-R model and its contribution to research and practice, previously emerged job design theories should be considered. In this context, it is important to understand how earlier models were providing the groundwork for the JD-R model. Taking the downsides, critiques, and limitation of earlier models into consideration, the JD-R theory provides an integrative approach of internalizing the complex interrelations and effect mechanisms of job demands and strain on one side, as well as job resources and motivation on the other side. Consequently, before outlining the main building blocks of the JD-R model, four central earlier models will be explained.

Early models of work motivation and job stress

Within the past decades, research has already addressed the topic of motivation and job stress from different perspectives, but these different literature threads have fairly ignored each other (Bakker & Demerouti, 2014, p. 2). Therefore, the Job Demands-Resources (JD-R) model was among the first theoretical frameworks combining both motivation and stress principles. To provide a better understanding of the JD-R model, four former influential models will briefly be discussed. Specifically, the *two-factor theory* (Herzberg, 1966), the *job characteristics model* (Hackman & Oldham, 1980), the *demand-control model* (Karasek, 1979), as well as the *effort-reward imbalance model* (Siegrist, 1996). The discussion of these models includes inter alia their scope, mechanisms, and objectives.

The Two-factor theory

In research, the concepts of job satisfaction and motivation have been intensively addressed within diverse job situations as well as in various theoretical views. The

two-factor theory of Herzberg (Herzberg et al., 1959) has become one of the most used and respected theories explaining the patterns of motivation and job satisfaction (DeShields et al., 2005, p. 131). The theory implies that two distinct sets of circumstances, so called hygiene factors and motivator factors are affecting the satisfaction and motivation level of employees within organizations (Bakker & Demerouti, 2014; DeShields et al., 2005; Herzberg et al., 1959). As far as these hygiene factors (dissatisfiers) are deficient, they lead to high levels of dissatisfaction of employees at work. In parallel to this, motivational factors (satisfiers) results in employee well-being and satisfaction when sufficiently fulfilled. Dissatisfiers as extrinsic factors are controlled by someone else than the individual itself (such as leaders or managers) and are related to the conditions that surround the “doing” of the job or workplace (Alshmemri et al., 2017, p. 14). In contrast, motivators can be typically considered as intrinsic factors which are linked to the job content and are mainly determined by the employer (DeShields et al., 2005, p. 132). It is worth mentioning here that Herzberg did not define dissatisfaction as the opposite of satisfaction. Likewise, the opposite of job satisfaction is no job satisfaction (Alshmemri et al., 2017; Herzberg, 1966). Extrinsic factors impact job satisfaction, but if absent or not sufficiently met they can lead to dissatisfaction, even in case that motivator factors (satisfiers) are addressed (DeShields et al., 2005; Herzberg et al., 1959). Within his research studies, Herzberg found out that through the existence of hygiene factors such as company policies, supervision salary, interpersonal relations, and working conditions, dissatisfaction could be avoided. On the other side, motivation factors are linked to an employee’s job satisfaction, including the possibility to grow, achievement, recognition, nature of work, responsibility, and advancement (Alshmemri et al., 2017; Bakker & Demerouti, 2014; Herzberg, 1966). Following Herzberg’s theory, hygiene factors are expected not to foster satisfaction, but the absence also fosters dissatisfaction.

The two-factor theory of Herzberg has attracted a lot of research attention but also received quite some criticism. Mainly the validity regarding the distinction be-

tween hygiene factors and motivators has been challenged (Alshmemri et al., 2017; Bakker & Demerouti, 2014). The reasons for this are numerous: first, Ambrose and Kulik (1999) stated that the evidence of the two-factor model relies on the particular method applied and that the variation of methodology (questionnaires, interviews, behavioral observations) might lead to different results (Lundberg et al., 2009, p. 892). In consequence, the model has just received limited support for its prediction of job satisfaction (Bakker & Demerouti, 2014, p. 3). Second, it also claims that job content or job enrichment can be seen as the only increasing factor for work motivation (Furnham et al., 1999; Lundberg et al., 2009; Parsons & Broadbridge, 2006). According to Pinder (2008), hygiene factors can also be conceived as motivators. Despite all the criticisms, the two-factor model of Herzberg remains an important contribution to the domain of organizational science for researchers as well as practitioners as it emphasizes the potential and importance of job enrichment. Therefore, in order to increase motivation and job satisfaction, jobs can be redesigned, enlarged and enriched (A. M. Grant et al., 2011).

The job characteristic model

The *job characteristics model (JCM)* (Hackman & Oldham, 1975; Hackman & Oldham, 1976, 1980) has created some research impetus in the area of job design within the past decades. Influenced by earlier works (Hackman & Lawler, 1971; Turner & Lawrence, 1965), the conceptual framework of the JCM is building on the association of complex or enriched jobs with increased job satisfaction, motivation, and work performance (Fried & Ferris, 1987, p. 287). It examines in particular the responses of employees to jobs (e.g. job satisfaction, personnel turnover) as a function of job characteristics that are moderated by individual characteristics (Roberts & Glick, 1981). In doing so, it is argued that five core job characteristics on the task level, such as (1) autonomy (degree to which the work allows substantial freedom, independence, and discretion in defining goal-focused behavior at work), (2) feedback from the job (information about job performance), (3)

task significance (influence of employee's tasks on the work and live of others), (4) task identity (stimulates personal growth and helps achieving work goals), and (5) skill variety (skill set range used at work) are impacting job satisfaction and intrinsic work motivation through the fulfilment of three central psychological states (i.e., experienced meaningfulness at work, experienced responsibility for outcomes of the work, and knowledge of the actual results of the work activities) (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011; Fried & Ferris, 1987; Hackman & Lawler, 1971; Hackman & Oldham, 1976, 1980). These psychological states have an effect on the employee's work results, such as internal work motivation, growth satisfaction, overall job satisfaction, work effectiveness, or absenteeism (Fried & Ferris, 1987, p. 288). In addition, the job characteristic model includes three further factors, such as knowledge and skill, growth need strength, and context satisfaction that are moderating both job characteristics-critical psychological states relationships and the critical psychological states-work outcomes relationships (Fried & Ferris, 1987, p. 288). Based on this framework, Hackman and Oldham (1975) designed a principal assessment tool (Job Diagnostic Survey – JDS) to measure job characteristics, critical psychological states and work outcomes as well as two of the stated moderator variables (i.e., growth need strength and context satisfaction).

However, the critical psychological states have been mainly ignored by the literature. Instead, research has put its attention on the direct influence of core job characteristics on the outcomes. With regards to that, meta-analyses showed that in particular job autonomy as part of the core job characteristics can trigger positive employee attitudinal outcomes (Fried & Ferris, 1987; S. K. Parker & Wall, 1998). But scholars could just provide limited support for the mediation role of the three critical psychological states within the interplay between job characteristics and attitudinal outcomes (Behson et al., 2000; Renn & Vandenberg, 1995). In addition, the model also suggests a stronger coherence between job characteristics and the critical psychological states as well as between the critical psychological states and

the outcomes for employees with especially high growth need strength (Bakker & Demerouti, 2014, p. 4). However, research evidence for the latter hypothesis is still inconsistent (Bakker & Demerouti, 2014; Graen et al., 1986).

The demand-control model

Like the job characteristic model, the *demand-control model (DCM)* (Karasek, 1979; Karasek & Theorell, 1990) has reached prominent attention in the literature and dominated the empirical research on job stress, health, and job strain over the last three decades (Bakker & Demerouti, 2007, 2014; Cordery, 1997). The phenomenon of job strain can be observed in many different working contexts. It occurs due to the disbalance of demands employees are subjected to as well as to the resources at their disposal. The model states that job strain is particularly the highest in jobs characterized by the combination of high levels of job demands and low job control (Karasek, 1979; Karasek & Theorell, 1990). Therefore, job control is defined as

“The working individual’s potential control over his tasks and his conduct during the working day” (Karasek, 1979, pp. 289–290).

On the other hand, job demands, especially such as high workload and time pressure are, in general, the most important work-related stressors (Demerouti et al., 2000; Karasek & Theorell, 1990). Jobs with a characterization of high job demands and low job control are defined as “high-strain jobs”. However, one very central premise of the DCM postulates that employees with a high level of decision autonomy on how to achieve their job requirements do not suffer from job strain (i.e. job-related anxiety, health complaints, exhaustion, and dissatisfaction) (Bakker & Demerouti, 2007, p. 310). This observation can be explained by the following:

“The individual’s decision latitude is the constraint which modulates the release or transformation of “stress” [potential energy] into energy of action” (Karasek, 1979, p. 287).

The so-called active learning hypothesis in the DCM is build upon this observation. High levels of enjoyment, learning, and personal growth can be monitored in jobs that are characterized by the combination of high job demands and high job control (Bakker & Demerouti, 2014, p. 4). Despite the fact that these jobs are highly demanding, employees that perceive sufficient leeway in decision-making, can transform stress by using their available skills and competencies into energy of action through effective problem solving (Bakker & Demerouti, 2014; Karasek, 1979). These jobs were named as “active-learning jobs”.

In addition, research conducted mixed empirical evidence for the DCM (Lange et al., 2003; van der Doef & Maes, 1999). On the one hand, substantial empirical evidence showed that especially the combination of high job demands and low job control, can be considered as a significant predictor of psychological strain and illness (Karasek, 1979; Schnall et al., 1994). Research could also demonstrate that employees’ well-being and motivation can be influenced by additive effects of job demands and job control. Although scholars are considerably supporting the strain hypothesis, evidence for the buffer hypothesis is less homogeneous. This buffer hypothesis states that control can act as a “catalyst” and hence moderate the negative impact of high demands on the employees’ well-being (Bakker & Demerouti, 2007; Jonge & Kompier, 1997; van der Doef & Maes, 1999). This result suggests that control over the execution of tasks (autonomy) allows to compensate the effect of job demands (e.g. work overload) on well-being or job stress (Karasek & Theorell, 1990).

With reference to the interplay of job demands and job control, other research studies could in contrast not confirm the interaction effects that were stated by the DCM (Bakker & Demerouti, 2014, p. 4). In this context, Taris (2006) reanalyzing 64 studies which have been reviewed by van der Doef and Maes (1999) and could

show, that only 9 out of 90 tests offered support for the interaction effect of job demands and job control (Bakker & Demerouti, 2014, p. 4). According to several scholars, this lack of evidence can be explained by the model's conceptual and methodological limitations (Carayon, 1993; Jonge et al., 1996; Taris et al., 2003).

The effort-reward imbalance model

Finally, the *effort-reward imbalance (ERI) model* will be introduced within this section (Siegrist, 1996). In comparison to the DCM (Karasek, 1979; Karasek & Theorell, 1990), the ERI model focuses rather on the reward than the control structure of the job. Therefore, it states that rewards may minimize the unfavorable effects of effort expenditure (Demerouti & Bakker, 2011, p. 2). This implies that job stress results from an imbalance between effort and reward (Bakker & Demerouti, 2007, p. 310). In this context, effort can be understood as extrinsic job demands as well as intrinsic motivation that are necessary to these demands. In contrast to the construct of effort, reward is defined in terms of salary, esteem reward, and security or career opportunities (Bakker & Demerouti, 2014, pp. 4–5). Promotion opportunities, job security as well as status consistency can be mentioned as examples for rewards. The ERI also assumes that a lack of mutuality with regards to effort and reward (i.e., high effort or low effort settings) will direct to arousal and stress (e.g. equity theory; Walster et al., 1978). Both, arousal and stress might lead in consequence to certain stress reactions on a psychological level or even to cardiovascular risks with respect to physiological outcomes (Bakker & Demerouti, 2014, p. 5). As an example, the scenario of a demanding but unbalanced job, and the necessity to perform on high standards without being offered any prospects for advancement can be considered as such a stressful imbalance (Bakker & Demerouti, 2007, p. 310).

From a research perspective, the reciprocity and interplay between high effort and low reward at work has gained quite some attention, and has been identified as a risk factor for e.g. cardiovascular health, subjective health, mild psychiatric disorder-

ders, and burnout (Bakker & Demerouti, 2014; Siegrist, 2008; Tsutsumi & Kawakami, 2004; van Vegchel, 2005). In comparison to the DCM, the ERI-model inherits also a personal component: overcommitment. This component is described as a set of attitudes, behaviors as well as emotions that are reflecting the exaggerated need for achievement in combination with the strong desire for recognition and esteem. Furthermore, the ERI-model emphasizes overcommitment moderating the association between both effort-reward imbalance and employee well-being (Bakker & Demerouti, 2007, p. 310). Within the research discourse, the construct of personality is said to further qualify the interplay between effort and reward, especially as just some little evidence supporting this hypothesis was found (e.g. (Jonge et al., 2000).

Critique on early models and conclusion

To summarize, all different models discussed have provided remarkable contributions to research within the last decades, especially in the domain of job design and occupational health by trying to analyze and to understand the reciprocity of work motivation and job stress. Moreover, these frameworks have been applied in various practical areas aiming at reducing job stress of employees and improving work settings within organizations. However, all earlier models of job stress and work motivation (two-factor theory, the job characteristics model, the demand-control model, the effort-reward imbalance model) are also associated with mainly four partially overlapping problems leading to certain critiques in literature (Bakker & Demerouti, 2014, pp. 5–8):

- (1) *One-sidedness*: every model puts their attention just either on job stress or work motivation.
- (2) *Simplicity*: all earlier models can be described as relatively simple and largely ignored each other's literature by not taking the perspectives of other

existing models into account. In some cases, just a few variables could provide a holistic insight and explanation of all potential working environments.

(3) *Static character*: based on point (2), each early model can be also described as static due to their assumption of being applicable with their specific setting of variables across all conceivable working environments.

(4) *Changing nature of jobs*: notably these days, the nature and design of jobs are changing rapidly in terms of quantity and quality across all industries and domains. Earlier models of job stress and motivation disregard largely the high level of job volatility.

In the following section, each criticism outlined will be discussed more in detail.

(1) The limitation of “one-sidedness”

In the past, research on job stress and work motivation was developed in two different literatures, with the consequence that researchers automatically put a one-sided attention to certain aspects of the work environment by choosing one particular model. This leads to the result that in many cases literature on motivation neglected research on stress and vice versa (Bakker & Demerouti, 2007, 2014). In comparison to research, parallels can also be drawn to practice. In organizations, human resource managers often focus on the motivation of employees and on job satisfaction, whereas (corporate) medical officers put their attention on job stress and sickness absence (Bakker & Demerouti, 2014, pp. 5–6). Research provided evidence that job stress and work motivation are significantly correlated. As an example, Leiter (1993) could empirically prove that high level of work stress led not just to chronically exhaustion but also to demotivation and the inclination of distancing oneself psychologically from the job. Following Bakker et al. (2008), exhausted employees tend more often to be cynical and skeptical regarding their overall work contribution and meaningfulness of their work (Bakker & Demerouti, 2014).

(2) *The limitation of “simplicity”*

Both, the DCM and the ERI-model are following the same assumption that when certain resources are not prevalent, job demands result in job strain, job stress, or in even more extreme forms such as burnout. The DCM defines mainly autonomy as a key resource, where else the ERI model takes the concepts of income, esteem reward and security or career prospects into consideration (Bakker & Demerouti, 2007, p. 311). With respect to the strength of both models, simplicity could be regarded as one of them. But from a research and practical point of view, this strength can also be interpreted as a clear sign of weakness as it does not reflect reality in a comprehensive manner. Therefore, Bakker and Demerouti (2007, p. 311) argued that both models reduce the complexity of organizations’ working reality to only a few variables. Indeed, research conducted on employees’ well-being created an extensive list of job demands and (lack of) job resources as potential antecedents. To name just a few, this list not only includes high psychological and physical job demands, (lack of) rewards, and (lack of) autonomy, but also contains demands on the emotional level, social support from co-workers, support from supervisors, and performance feedback (Alarcon, 2011; Halbesleben & Buckley, 2004; R. L. Kahn & Byosiere, 1992; Lee & Ashforth, 1996).

This observation leads to two central question: (a) whether the DCM and the ERI-model can be applied to every facet of job occupations and (b) whether the concept of employee well-being and job stress can sufficiently be explained by other combinations of job demands and lack of resources than the particular explanatory logic provided by the DCM and ERI-model (Bakker & Demerouti, 2007, p. 311). As a response, some scholars were taking within the DCM and ERI-model also emotional and physical demands into consideration (Bakker & Demerouti, 2007; Jonge et al., 1999; van Vegchel, 2005). In contrast, compared to the DCM and ERI-model, the motivational model integrates only job resources and ignores the construct of job demands. Therefore, it is argued,

“that in all jobs some challenging demands are needed, because otherwise work engagement may be thwarted and job performance undermined” (Bakker & Demerouti, 2014, p. 6).

(3) The limitation of “static character”

The third limitation refers to the static character of earlier models. Following Bakker and Demerouti (2007, p. 311) it is unclear why the concept of autonomy is labeled to be the most important resource for employees within the demand-control model. In addition, it is also not specified why social support represents the most important resource in the extended demand-control-support model by Johnson and Hall (1988). Primarily in our today’s world, it could be argued that in certain work environments completely different job resources are required (e.g. authentic or inspirational leadership to allow an environment of psychological safety for driving innovation forward within technology startups). Interestingly, Siegrist (2008) postulated that referring to the ERI-model, salary, esteem reward, and status control could be identified as the most central job resources in order to compensate the influence of job demands on strain (Bakker & Demerouti, 2014, p. 7). But those job resources do not cover the growing variety of job occupations and different job designs. This leads also to the question, why the concept of autonomy is not integrated in this model. In addition, it raises the question why job resources such as salary, esteem reward, and status control are more relevant than job identification and high quality relationships between the employee and its manager. (Bakker & Demerouti, 2007, p. 311). However, the integration of further work-related factors that have shown to positively impact the well-being of employees into the models presented is not feasible (Bakker & Demerouti, 2007, p. 311).

With respect to job demands, it is also not clear according to which reasoning work pressure or intrinsic and extrinsic efforts are the most important drivers. According to Bakker and Demerouti (2007, p. 311), this is linked to the limitation of one-sidedness:

“It seems evident that the choice of researchers for a certain model implies one-sided attention for specific aspects of the work environment, whereas other aspects are neglected” (Bakker & Demerouti, 2007, p. 311).

This becomes even more relevant considering certain occupations that are highly associated with emotional demands (e.g. nurses, doctors, teachers) compared to other professions where these types of demand are less predominant (Bakker & Demerouti, 2007). Correspondingly, the job characteristics model of Hackman and Oldham (1980) is paying its attention mainly on five central specific job characteristics, namely: (1) skill variety, (2) task significance, (3) task identity, (4) feedback, and (5) autonomy. Those job characteristics can be considered as sound and important elements of the working environment of employees, but nevertheless, this list cannot be considered as exhaustive (Bakker & Demerouti, 2014, p. 7). To proof this point, scholars showed that further elements such as development opportunities or the coaching of one’s supervisor can serve as motivation too (Bakker & Demerouti, 2007). Following Bakker and Demerouti (2014, p. 7), research on the ERI-model (Siegrist, 1996) also highlighted the relevance of job security and distributive as well as procedural justice.

Shifting the focus back on the DCM, Karasek (1979) considered on the one hand time pressure and work overload as key indicators for job demands, on the other hand decision latitude and skill discretion as indicators of job control. He also integrated the concept of role conflict in his original job demands measure (Bakker & Demerouti, 2007, pp. 311–312). With regards to the last construct, he explicates:

“The goal of constructing the scale of job demands is to measure the psychological stressors involved in accomplishing work load, stressors related to unexpected tasks, and stressors of job-related personal conflict” (Karasek, 1979, p. 290).

Building on this, he also claims:

“Stressors such a fear of unemployment or occupational career problems might also contribute to these measures” (Karasek, 1979, p. 291).

In this context, Karasek (1979, p. 290) also points out that future research is supposed to distinguish between the specific effects of several different manifestations of decision latitude, with reference to decision resources, skill, task organization, control over potential uncertainties, organizational policy influence, and time pacing. This all leads to the conclusion that taking the remarks of Karasek (1979) into consideration, there is a substantially way broader range of job demands and job resources existing that have not yet been studied yet. However, according to Bakker and Demerouti (2007, p. 312) most scholars on the demand-control model (Karasek, 1979; Karasek & Theorell, 1990) and the ERI-model (Siegrist, 1996) have restricted their focus on a given and limited set of independent variables.

(4) The limitation of “changing nature of jobs”

As mentioned above, jobs and their characteristics are rapidly changing nowadays. This can be explained by many different antecedents such as the emerge of new technologies, the innovation of business models and the growing globalization. Consequently, contemporary occupations show a way higher level of complexity with respect to their functions and networking structures (Bakker & Demerouti, 2014, p. 7). Additionally, also further aspects such as the role of information technology and therefore game changing requirements for employees are more relevant than just the execution part of one’s job (Demerouti et al., 2014). In addition, employees are also more and more able to negotiate their own working conditions, terms and job content. It is obvious that these new models of occupation with their own very specific characteristics do not match the early models developed decades ago (Bakker & Demerouti, 2014, p. 7). For many jobs, cognitive work as an important demanding work characteristic is today more relevant than ever before. Therefore, it is not surprising, that resources such as learning and development

possibilities are receiving increasingly attention by employees nowadays (Bakker & Demerouti, 2014, p. 7). According to Hayes (2006), organizations are progressively willing to negotiate idiosyncratic deals (distinct working conditions) with their employees aiming at not just to retain their valuable contribution but also to keep them in their workforce. These personally negotiated arrangements can be considered as a valuable source of flexibility and in addition increase the employees' job satisfaction. With respect to these changes it becomes obvious that the complexity of contemporary jobs cannot be sufficiently explained by the identification and introduction of few work characteristics in a job model on job stress or motivation. Consequently, theories that allow more flexibility in terms of work-related factors are necessary to provide a way more undistorted picture of the modern-day job designs and workplace reality (Bakker & Demerouti, 2014, p. 8).

To conclude the critiques outlined, the early models on job stress and motivation had on one side gained a comprehensive contribution and created essential insights into the antecedents and effects of employees' well-being. But on the other side, these influential models have largely disregarded each other in the literature on stress and motivation over the last decades (Bakker & Demerouti, 2014, p. 8). According to scholars, future research should address the constructs of stress and motivation as dependent constructs and also taking the four focal aspects of critique on these early models into consideration (Bakker & Demerouti, 2014, p. 8).

Core elements and mechanisms of the Job Demands-Resources (JD-R) model

As addressed, the core of the *Job Demands-Resources (JD-R) model* (Bakker & Demerouti, 2007; Bakker, Demerouti, Boer, & Shaufeli, 2003; Bakker, Demerouti, Taris, et al., 2003; Demerouti, Bakker, et al., 2001) emphasizes on two general categories, namely *job demands* and *job resources*. This systematic categorization allows to identify certain risk factors that are associated with job related stress and appears within every job setting and design. Compared to earlier models, the JD-R theory as an overarching model can be applied to various different job settings,

irrespective of the particular demands and resources implicated (Bakker & Demerouti, 2014; Demerouti & Bakker, 2011). The relevance and explanatory contribution of the JD-R model could be proven by a continuous growth of studies applying this model to various different contexts within the past decades (Bakker & Demerouti, 2007; Demerouti, Bakker, et al., 2001; Demerouti & Bakker, 2011).

The list of areas in which the model was used to provide certain predictions is very comprehensive: *job burnout* (Bakker et al., 2005; Bakker et al., 2008; Demerouti, Nachreiner, et al., 2001), *work engagement* (Bakker et al., 2007; Hakanen et al., 2006), *connectedness* (Lewig et al., 2007), *work enjoyment, organizational commitment* (Bakker et al., 2010). Moreover, the focus of the JD-R model has not rarely been relying on certain antecedents but also on the consequences of these predictions, for instance *sickness absenteeism* (Bakker, Demerouti, Boer, & Schaufeli, 2003; Clausen et al., 2012; Schaufeli et al., 2009), or *job performance* (Bakker et al., 2004; Bakker et al., 2008). Based on studies (i.a. meta analyses) applying the new propositions of the JD-R model (Crawford et al., 2010; Halbesleben, 2010; Nahrgang et al., 2011) – in terms of quantity and quality – the model itself has matured into a theory, which offers a great contribution for understanding, explaining and predicting certain underlying concepts of employee wellbeing such as burnout, work engagement, health and motivation, as well as (job) performance (Bakker & Demerouti, 2014, p. 8). The next section outlines the core elements and mechanisms of the JD-R model more into detail.

Compared to earlier models and their strengths and weaknesses, the JD-R model has gained popularity due to its flexibility with respect to all possible working environments and job designs. The theory allows to model these settings and job characteristics by using two different categories: job demands and job resources (Bakker & Demerouti, 2014, p. 9). Consequently,

“The theory can be applied to all working environments and can be tailored to specific occupation under consideration” (Bakker & Demerouti, 2014, p. 9).

Furthermore, job demands can be considered as working conditions that conceivably evoke stress-reactions in case they are overwhelming the limits and abilities of the employee (Demerouti et al., 2000, p. 456). Therefore,

“Job demands refer to physical, psychological, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain psychological costs (e.g. exhaustion)” (Demerouti, Nachreiner, et al., 2001, p. 501).

In the practical context, high level of work pressure, an unfavorable physical environment, and emotionally demanding interactions with clients, customers, partners, or colleagues can be provided as examples. According to Meijman and Mulder (1998), job demands are per se not connotated negatively. However, in certain situations, job demands may transform into impeding demands, which require high efforts from the individual that has not recovered adequately, to fulfill these demands (Bakker & Demerouti, 2007, 2014; Meijman & Mulder, 1998). On a related note, research based on the control model of demand management (Hockey, 1993) states that employees apply a so-called performance-protection strategy in exactly these situations when they are confronted with environmental stressors such as noise, heat, workload or time pressure (Demerouti, Nachreiner, et al., 2001, p. 501). Following this theory, the deployment of sympathetic activation (autonomic and endocrine) and/or an enhancement of individual effort can enable this performance protection mechanism (Demerouti, Nachreiner, et al., 2001; Hockey, 1993). In this respect, higher levels of the individual’s activation or effort are associated with higher psychological costs. Based on the theory of Hockey (1993), several different patterns of indirect decrements performed by individuals can be identified: strategy adjustments and fatigue after-effects. On one side, narrowing down the attention or redefining task requirements can be considered as readjustments in terms of strategy, whereas taking risky choices can be summarized as fatigue after-effects. If employees are exposed to situations to which the application of such a compensation strategy is necessary or beneficial, it might lead to a

drain of energy and result in breakdowns or exhaustions (Demerouti, Nachreiner, et al., 2001, p. 501). Several theories have dealt with the interactions between demands and exhaustion to explain the evolvment of fatigue, other theories focusing on health promotion and maintenance with the relationship between resources and disengagement (Antonovsky, 1987). All these theories aim at the same question: what keeps individuals healthy, even after experiencing high levels of workload and stress (Richter & Hacker, 2014). The answer to this question are resources as health-protecting factors (Demerouti, Nachreiner, et al., 2001, p. 501).

According to Bakker (2011) and Bakker and Demerouti (2007), job resources relate to physical, psychological, social, or organizational aspects that are either/or:

- (a) functional in achieving work goals,
- (b) reduce job demands and associated physiological and psychological costs,
- (c) stimulate personal growth, learning, and development.

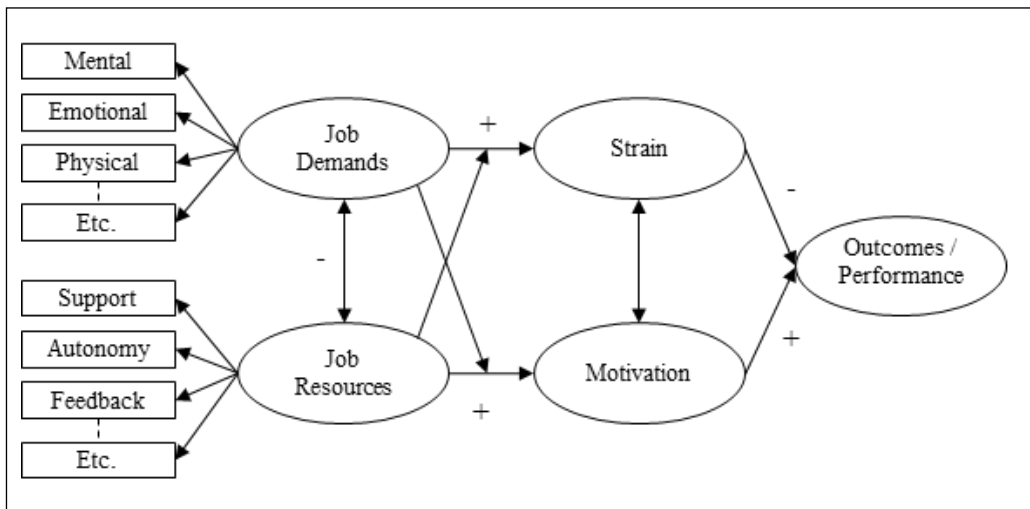
Based on that, job resources can be understood as working conditions (Demerouti et al., 2000, p. 456) and exist on different levels in the working context: the organizational level at large (e.g. job security, opportunities, pay, career), the interpersonal and social relations (e.g. team climate, environment of psychological safety, supervisor support, endorsement of colleagues), the organization of work (e.g. role clarity, participation in decision making processes), and the task level (e.g. performance feedback, autonomy, skill variety, task identity, task significance, task variety, job control) (Bakker & Demerouti, 2007; Demerouti et al., 2000). Moreover, resources are not just central for employees in dealing with job demands inherently, but also important in themselves (Bakker & Demerouti, 2014, p. 9). This argumentation is also consistent with the job characteristics theory of Hackman and Oldham (1980). It highlights the motivational potential of job resources on different levels: task level, including autonomy, feedback, and task significance (Bakker & Demerouti, 2007, p. 312). This assumption is also in line with the conservation resources (COR) theory of Hobfoll (2001). The theory states that motivation pri-

marily triggers individuals to maintain and to accumulate their resources irrespectively of the actual context (Bakker & Demerouti, 2007, p. 312). Consequently, resources are not just important for individuals to deal with job demands and requirements, but also to achieve and to protect other valued resources (Bakker & Demerouti, 2014, p. 9). In contrast to rather common job demands and jobs resources such as work pressure and autonomy, further job demands and resources can be considered to be rather unique. Current major changes within the working environment and organizational setting show that cognitive demands are getting increasingly more important within certain professions (e.g. engineering, software development, research). However, physical demands are still relevant in certain domains such as construction workers or nurses (Bakker & Demerouti, 2014, p. 9).

Job Strain and Motivation as Dual Processes

The JD-R model implies as a second premise that both job demands and job resources trigger two different underlying psychological processes in the development of job strain and motivation: *health impairment process* and *motivational process* (Bakker & Demerouti, 2007, 2014; Demerouti & Bakker, 2011). Over the past decades, different visualizations of the JD-R model and its respective interactions were developed (see Figure III-3). As Bakker and Demerouti (2007, p. 313) argued, the theory has been advanced by the conduction of an increasing body of research on various domains over time. Especially Bakker and Demerouti (2014, p. 10) were also integrating additional interrelations and elements such as personal resources, reversed causal relationships as well as the concept of job crafting in their model.

Fig. III-3: The Job Demands-Resources (JD-R) model



Source: adapted from Bakker and Demerouti (2007)

With respect to the health impairment process, high level of (chronic) job demands in form of work overload or emotional demands are in general the most important triggers for the exhaustion of individuals' mental and physical resources (depletion of energy), psychosomatic health complaints, and to repetitive strain injuries (Bakker, Demerouti, & Schaufeli, 2003; Demerouti et al., 2000; Demerouti, Bakker, et al., 2001; Demerouti, Nachreiner, et al., 2001; Hakanen et al., 2006; Leiter, 1993). Compared to job demands, job resources refer to the motivational process and represent another essential element of the JD-R model. Multiple studies have shown that job resources inherent a motivational potential and therefore are generally the most important antecedents of high work engagement, high work enjoyment, low cynicism, and excellent performance (Bakker et al., 2010; Bakker & Demerouti, 2007, 2014). Following this argumentation, job resources can be considered on one side as intrinsic motivational element fulfill basic human needs (Deci & Ryan, 1985), such as autonomy (Charms, 1983), competence (R. W. White, 1959), and relatedness (Baumeister & Leary, 1995), but also foster the individual's growth, learning and development (Bakker & Demerouti, 2007, p. 313). As an example, meaningful feedback from colleagues or supervisors nurtures the need for learning,

at the same time also increases job competencies, whereas the need for autonomy and need of belonging is respectively ensured and satisfied by decision latitude and social support (Demerouti & Bakker, 2011; van den Broeck et al., 2008). On the other side, job resources also play an extrinsic motivational role as they are required to achieve working goals. Following the effort-recovery model (Meijman & Mulder, 1998), offering many resources by providing and ensuring certain work environments increase the willingness of employees to invest efforts and abilities delicately to their job assignments. In turn, this increases the chances that the assignment will be completed successfully and the job goal will be achieved (Bakker & Demerouti, 2007, p. 314). For instance, proper feedback from colleagues and supervision of the manager as job resources help to accomplish one's job assignment. Moreover, studies showed that either the satisfaction of basic human needs or/and the accomplishment of job assignments through sufficient job resources result in engagement, whereas their absence foster a cynical attitude towards the job itself (Demerouti & Bakker, 2011; Demerouti, Nachreiner, et al., 2001; Lewig et al., 2007; Schaufeli et al., 2009). To summarize, job demands basically require effort and drain energetic resources, while job resources comply basic human psychological needs (e.g. autonomy, relatedness, competencies) (Bakker, 2011; Deci & Ryan, 2000; Nahrgang et al., 2011).

Empirical evidence for the JD-R model and further methodologies

Several studies provided evidence for the hypotheses of the JD-R model and supported the dual pathways to employee-wellbeing proposed. Furthermore, the model could also prove its ability to predict important organizational and individual outcomes (Bakker & Demerouti, 2014, p. 10). As an example, an empirical study investigated among 477 workers in a call center of a Dutch company the predictive validity of the JD-R model for self-reported absenteeism, through their relationship with health problems (i.e., exhaustion and Repetitive Strain Injury) and turnover intentions (Bakker, Demerouti, & Schaufeli, 2003). The results of a series

of structural equation modeling (SME) analyses supported the dual processes of job demands and job resources. In detail: within the scope of the health impairment process, job demands defined as work pressure, changes in tasks, computer problems or emotional problems had the strongest impact on health problems, which in turn, were related to sickness absence (duration and long-term absence) (Bakker, Demerouti, & Schaufeli, 2003, p. 393). On the other hand, job resources (motivational process) defined as social support, supervisory coaching, performance feedback and time control) proved to be the sole predictor of involvement, dedication, and organizational commitment, which in turn were related to employees' turnover intentions. Next to that, job resources also weakly reduced health problems, and therefore were also negatively associated to turnover intentions (Bakker, Demerouti, & Schaufeli, 2003, p. 408).

Similar results were conducted by Hakanen et al. (2006) within a study among finish school teachers (n = 2,038). Results of the structural equation modeling (SEM) confirmed the existence of both processes (health impairment process and motivational process). The study also showed the mediating effect of (1) high job demands on ill health, (2) work engagement on the effects of job resources, on organizational commitment as well as mediation effects of (3) lack of resources on poor engagement (Hakanen et al., 2006, p. 495). The results of Hakanen et al. (2006) also supported another proposition of the JD-R model which implies that job resources especially influence motivation or work engagement in cases when job demands are high (Demerouti & Bakker, 2011, p. 3). Scholars defined this observation as the so-called coping hypothesis (Bakker et al., 2005; Bakker et al., 2007; Bakker et al., 2010). The researchers could prove its evidence as job resources were identified as most beneficial in maintaining work engagement under conditions of high job demands such as pupil misbehavior. (Hakanen et al., 2006) Furthermore, innovativeness, appreciation, and positive organizational climate highly increased the teachers' work engagement, predominantly when the misbehavior of the pupils was high. In a similar vein, Bakker et al. (2010) tested in a

large heterogeneous sample ($n = 12,359$) of employees working in 148 organizations the interaction hypothesis (Hobfoll, 2001) of the JD-R model. The study aimed at revealing whether employees endorse most positive work attitudes such as task enjoyment and organizational commitment when both job demands and job resources are high. Results discovered that 15 of 16 hypothesized interactions for task enjoyment and 13 of 16 interaction for organizational commitment were significant. Particularly under conditions of high job demands (workload and emotional demands), job resources (skill utilization, learning opportunities, autonomy, colleague support, leader support, performance feedback, participation in decision making, and career opportunities) predicted task enjoyment and organizational commitment (Bakker et al., 2010). Therefore, the coping hypothesis (Hobfoll, 2001) indicates that resources become more salient under demanding and stressful conditions and individuals are more likely to use resources as a coping mechanism for reducing stress in such situations (Demerouti & Bakker, 2011, p. 3).

In a further study, Bakker, Demerouti, Boer, and Shaufeli (2003) used the JD-R model among 214 nutrition production employees to predict future company registered absenteeism. Consistent with hypotheses from the JD-R model and absenteeism literature derived, the results of the structural equation model (SEM) analyses revealed that job demands are unique predictors of burnout (i.e., exhaustion and cynicism) and indirectly of absence duration. Job resources on the other hand were identified to be unique predictors of organizational commitment, and indirectly of absenteeism (Bakker, Demerouti, Boer, & Shaufeli, 2003, p. 341).

In addition, the JD-R model was widely used in the research of burnout. Many scholars examined the effects of burnout on outcomes such as in-role performance, engagement, commitment, or life satisfaction (Bakker et al., 2004; Demerouti et al., 2000; Demerouti, Nachreiner, et al., 2001). In this context, Bakker et al. (2004) applied in their study the JD-R model to explore the relationship between job characteristics, burnout and other performance measures ($n = 146$). The findings revealed that job demands (e.g. work pressure and emotional demands) were the

most important predictors of burnout (exhaustion component), which, in turn had an impact on in-role performance (Bakker et al., 2004, p. 83). Apart from that, job resources (e.g., autonomy and social support) were the most important antecedents of extra-role performance, through their relationship with the disengagement component of burnout. Compared to Bakker et al. (2004), Demerouti, Bakker, et al. (2001) applied a discriminant analysis within their study among 391 employees of an insurance company to examine the relationship between job demands and job control on the one hand and health impairment (exhaustion and health complaints) as well as active learning (engagement and commitment) on the other hand. Results demonstrated that job demands were most clearly related to health impairment, whereas job control was most clearly associated with active learning (Demerouti, Bakker, et al., 2001, p. 279). In a different context, Demerouti et al. (2000) investigated a theoretically derived model of burnout and overall life satisfaction among 109 German nurses by discriminating between job demands and job resources. Results of the SEM analyses confirmed the strong effects of job demands (i.e., demanding contacts with patients and time pressure) and job resources (i.e., poor rewards and lack of participation in decision making) on exhaustion and disengagement (burnout) respectively, and the mediating role of burnout between the working conditions and life satisfaction (Demerouti et al., 2000, p. 454).

In addition to numerous empirical studies that were conducted by applying the JD-R model and therefore emphasizing its predictive and explanatory capabilities, Llorens et al. (2006) stressed the robustness of the JD-R model within two different occupational samples. The first sample consisted of 654 Spanish, and the second of 477 Dutch employees. The application of SME analyses provided partial evidence for both processes (job demands and job resources) as two relatively independent processes. Multigroup analyses showed that the structural paths of the model were invariant across countries, although the strength of the relationships differed (Llorens et al., 2006, pp. 383–387). Moreover, findings revealed that the basic structure of the JD-R model is maintained, even when (a) applied in different

nations and (b) occupational contexts, when (c) using different ways of data gathering and (d) when using slightly different measures to assess the key variables of the model (Llorens et al., 2006, p. 378).

Studies that provided evidence for the dual processes of the JD-R model also received critics in terms of their data collection process. The data mainly relied on subjective evaluations of job demands and job resources increasing the risk of common method variance between working characteristics and employee well-being (Bakker & Demerouti, 2007, p. 316). Interestingly, two different studies applied an alternative methodology to examine job demands and job resources. First, Demerouti, Nachreiner, et al. (2001) applied within their study among three different occupational groups (human services, industry, and transport – total n = 374) not just self-reported data but also observers ratings of the working conditions. Results provided strong evidence for the JD-R model as job demands were primarily related to the exhaustion component of burnout, whereas lack of job resources were primarily related to disengagement. Similar results were detected among all occupational groups (Demerouti, Nachreiner, et al., 2001, p. 499). Moreover, Bakker et al. (2005) approached employees from seven different organizations to participate in their study by filling in the Utrecht Work Engagement Scale (UWES). Thereafter, 20 employees showing high level of engagement and 20 employees showing low level of engagement were personally visited at their workplace and were exposed to a short video where professional actors role-played two aspects of work engagement (vigor, dedication), three job demands, and four job resources. Following this, researchers asked them to indicate how often they experienced this kind of situation displayed on the video. Results revealed that employees with a high level of engagement reported to experience more often work engagement as role-played in the clips. Interestingly, both groups (high and low engagement) differed significantly with respect to the prevalence of working situations role-played by the actors. Additionally, job resources were accumulated higher among employees with a high level of engagement compared to ones with low levels. Final-

ly, the high engagement group also reported significantly higher scores in three out of four job resources (autonomy, feedback, and supervisory coaching – no significant effect for social support) (Bakker et al., 2005).

Based on the empirical evidence and findings outlined in the paragraph above, the claim of the JD-R theory that job demands and job resources initiate two different psychological processes, which affect several important organizational outcomes can be supported (Bakker & Demerouti, 2014; Bakker, Demerouti, Taris, et al., 2003; Schaufeli & Bakker, 2004). Therefore, it can be stated that job demands are linked to strain (including lack of energy, development of health problems) and job resources are linked to motivation (including engagement with or disengagement from work, and commitment). In this context, Bakker and Demerouti (2007, p. 317) proposed a matrix to outline the different combination scenarios of job demands and job resources (see Figure III-4). As an example, when job demands and job resources are both high, it is expected that employees gain strain and motivation whereas when both are on a low level, the absence of strain and motivation is anticipated. Accordingly, the condition of high demands and low resources should eventuate in high strain and low motivation whereas the condition of low demands and high resources are supposed to result in low strain and high motivation.

Fig. III-4: Predictions of the JD-R model based on additive effects

| | | | |
|------------------|-------------|---------------------------------------|--|
| Resources | high | Low strain High motivation | High strain High motivation |
| | low | Low strain Low motivation | High strain Low motivation |
| | | low | high |

Demands

Source: adapted from Bakker & Demerouti, 2007)

Interactions between Job Demands and Job Resources

As highlighted in the JD-R model (see Figure III-3), job demands and job resources initiate not just two different processes but also have joint effects. The JD-R theory implies that the interaction between job demands and resources predict occupational well-being (Bakker & Demerouti, 2014, p. 11). Following the model's logic, there are two possible ways in which job demands and resources demonstrate a combined effect on well-being, and therefore indirectly influence performance as an outcome. First, several studies pointed out that job resources (i.e., social support, autonomy, performance feedback, and opportunities for development) can alleviate the impact of job demands (i.e., work pressure, emotional demands) on strain, including burnout (Bakker et al., 2005; Xanthopoulou, Bakker, Dollard, et al., 2007). With respect to this interaction, job resources can buffer the effect of job demands on strain. Consequently, employees who have access to sufficient job resources have the ability to better cope with their daily job demands (Bakker & Demerouti, 2014, p. 11). Bakker et al. (2005, p. 170) demonstrated within their study among 1,012 employees of a large institute for higher education that several job resources played a role in buffering the impact of several job demands on burnout. The central hypothesis was based and tested on four demanding job aspects (e.g., work overload, emotional demands) and four job resources (e.g., autonomy, performance feedback). The researchers discovered that the combination of high demands and low job resources significantly contributed to predict burnout (exhaustion and cynicism). More interestingly, employees that experienced autonomy, received feedback, had social support, or had a high-quality relationship with their supervisors showed less signs of work overload, emotional and physical demands, and work-home interference. With regards to Bakker and Demerouti (2007, p. 317), autonomy supported employees to cope with job demands as they had the possibility to decide for themselves when and how to respond to their demands, while social support and high-quality relationships with supervisors may have buffered the effect of job demands on burnout as employees

obtained instrumental help and emotional support. Conversely, the provision of feedback was beneficial as it provided employees with necessary information in order to preserve their performance and to stay healthy (Bakker & Demerouti, 2007; R. L. Kahn & Byosiére, 1992). Comparable results were also gained by Xanthopoulou, Bakker, Dollard, et al. (2007), who focused within their study on Dutch home care employees (n = 722) and examined the interaction hypothesis of the JD-R model. The results of the moderated SEM analyses supported mainly the two-way interactions. Additionally, job resources were detected to be stronger buffers of the relationship between emotional demands/patient harassment and burnout, than of the relationship between workload/physical demands and burnout. Moreover, autonomy proved to be the most important buffer of job demands for both burnout dimensions, followed by support and opportunities for professional development. The highest levels of exhaustion and cynicism were demonstrated under the conditions when the four job demands were high and the five job resources were low. Rephrased, in situations when many job resources were provided, the effect of job demands on the core dimensions of burnout was significantly reduced (Xanthopoulou, Bakker, Dollard, et al., 2007, pp. 778–780).

Salience of Job Resources in the context of high Job Demands

Several research studies focused on providing evidence for the salience of job resources under the condition of high job demands. As an example, within a study from Billings et al. (2000), outside of the JD-R framework, it was hypothesized that resources gain their salience in the context of high demands/threats. The results of path models suggested that men who were care giving for AIDS patients and used social support coping, sustained their positive emotional states confronted with stress. In addition, this also resulted in lower levels of physical symptoms, thus supporting the importance of resources gained in the context of loss (Billings et al., 2000).

Based on the JD-R model, two further studies also showed that job resources particularly had an impact on work engagement, task enjoyment as well as organizational commitment. First, the study of Hakanen et al. (2005) focused on a sample (n = 1,919) of Finish dentists employed in the public sector. Researchers assumed that job resources (e.g. variability in the required professional skills, peer contacts) are most beneficial in maintaining work engagement under conditions of high job demands (e.g. workload, unfavorable physical environment). Two random groups of dentists were created to cross-validate the results. Based on a set of hierarchical regression analyses 17 out of 40 significant interaction (40%) were determined, showing that inter alia variability in professional skills mitigated the negative effect of qualitative workload on work engagement and additionally increased work engagement when the qualitative workload was high (Hakanen et al., 2005, p. 479). Conceptually similar findings were reported by Bakker et al. (2007) in a study that was conducted earlier on. Researchers tested the buffer effect of job resources and their diminishing impact on the negative relationship between pupil misbehavior and work engagement. Additionally, moderated SEM analyses showed that job resources particularly influence work engagement of teachers when they are confronted with high levels of pupil misconduct. Certain job resources such as supervisor support, appreciation and organizational climate were particularly important for teachers to cope with demanding interaction with students.

The relevance of personal resources within the JD-R Model

The inclusion of personal resources, defined as positive self-evaluations relates in general to resiliency and the ability to control and influence the own environment successfully (Bakker & Demerouti, 2014; Hobfoll et al., 2003) is an important extension of the actual JD-R model (Bakker et al., 2004; Demerouti, Nachreiner, et al., 2001). Studies have shown that positive self-evaluations predict certain desirable outcome variables such as life and job satisfaction, performance, goal-setting and motivation (for a review, see Judge et al., 2005). One explanation for this is

that higher personal resources lead to a more positive individual's self-regard and due to that, more goal self-concordance is expected to be experienced (Judge et al., 2005). In the same vein as Judge et al. (2005), a further study revealed that people with goal self-concordance show higher level of intrinsic motivation for achieving their goals, which is in turn resulting in higher performance and satisfaction (Luthans & Youssef, 2007).

Based on SME analyses, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) showed that personal resources (self-efficacy, organizational-based self-esteem, and optimism) were not capable to offset the relationship between job demands and exhaustion but in contrast could mediate the relationship between job demands and work engagement, suggesting that job resources enhance the development of personal resources. Xanthopoulou et al. (2009) contributed to this finding as their longitudinal study implies that personal resources mutually affect job resources and work engagement over time. Concluding, job resource influence personal resources and work engagement as well as personal resources and work engagement predict job resources (Bakker & Demerouti, 2014) (see Figure III-3).

In comparison to job resources, there is hitherto little empirical evidence supporting the relationship between personal resources and job demands. Nevertheless, Tremblay and Messervey (2011) proved within their study among military chaplains that compassion satisfaction, defined as the fulfillment of professional caregivers (e.g. social workers, firefighters and clergy) partially moderated/buffered the impact of job demands on job strain, such as anxiety or depression. Additionally, regression analyses demonstrated that compassion satisfaction buffered the influence of role overload on job strain as well (Tremblay & Messervey, 2011, pp. 14–15). In another study among nurses (n = 63), Bakker and Sanz-Vergel (2013) examined the boosting effect of personal resources (self-efficacy and optimism) by hypothesizing that weekly job demands could facilitate the positive impact of personal resources on work engagement. The results of hierarchical linear modeling based on data gathered on three consecutive weeks displayed that emo-

tional job demands reinforced the effect of personal resources on weekly work engagement. The outcomes also contributed to the assumption that these demands perform as a challenge for nurses who particularly enjoyed to care for other people (Bakker & Demerouti, 2014; Bakker & Sanz-Vergel, 2013).

Reversed causal relationships

Several studies examined the interplay between self-reported and observed job demands, such as workload and emotional demands and health related outcomes, such as exhaustion (Bakker & Demerouti, 2007, 2014; Demerouti, Nachreiner, et al., 2001; Lee & Ashforth, 1996). Recent longitudinal studies revealed that various types of resources evolved into a cycle that impacted motivational outcomes such as work engagement (Xanthopoulou et al., 2009). On the contrary, Zapf et al. (1996) stated within their literature review that 6 out of 16 longitudinal studies demonstrated reversed causal relationships between working conditions and strain, which on the other hand supported the hypothesis that job strain could also influence job demands over time. In the further course, additional support for the existence of reversed causal relationships were provided, such as between depersonalization and the quality of the doctor-patient relationship (Bakker et al., 2000) and between exhaustion and work pressure (Demerouti et al., 2004).

Several potential explanations for reversed causal relationships can be provided. On the one hand, employees that witness disengagement or strain might display a certain behavior that places additional demands on themselves (e.g. falling behind work due to exhaustion) (Demerouti et al., 2004) or depersonalized individuals experience high levels of stress when repeatedly confronted with difficult and demanding clients (Bakker et al., 2000). On the other hand, the individual's perceptions of the work environment might be affected by job demands and hence play an important role too (Zapf et al., 1996). In this context, Bakker and Schaufeli (2000) stated that employees with burnout evaluated their job demands more critically and raised complaints about their workload with increased frequency, and

therefore contributed with their behavior to a more negative working atmosphere. A recent study of Demerouti et al. (2009) supported this assumption: it was shown that job demands were associated with burnout, which was related to job demands over time as well.

In addition to these findings, researchers such as Lange et al. (2005) revealed that mental health has a positive impact on the support of supervisors. This strengthens the assumption of other studies regarding the existence of a reversed causal relationships between job and personal resources and employee psychological well-being. Furthermore, Wong et al. (1998) demonstrated the positive interrelationship between job satisfaction and several organizational outcomes by collecting data over a two-year time span. Similar, Salanova et al. (2006) conducted a 1-year follow-up study among Spanish teachers and showed that work-related flow experiences were related to organizational resources and self-efficacy over time.

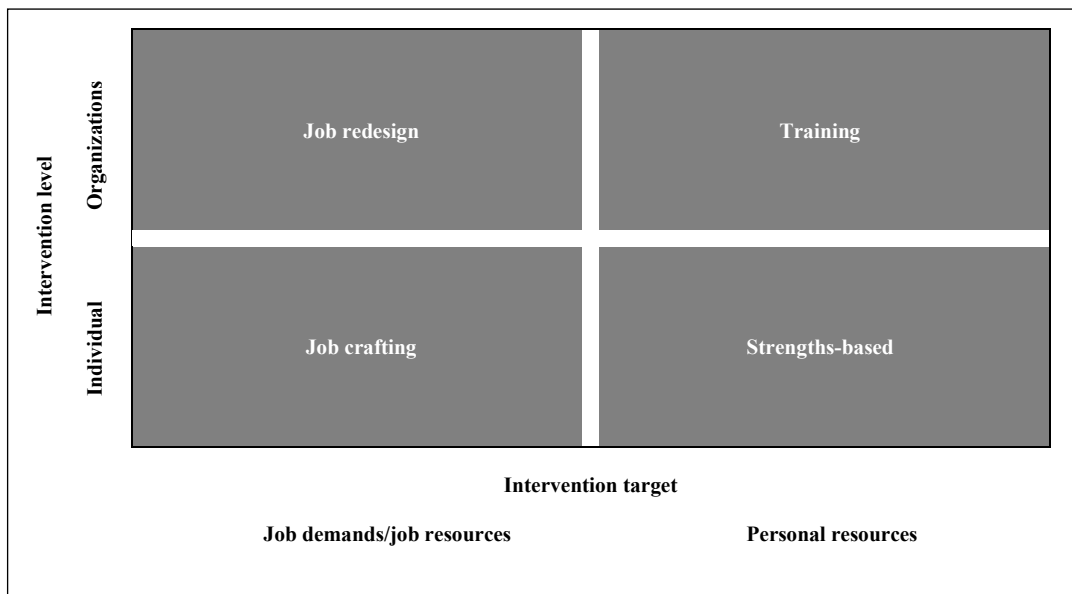
To summarize, it can be argued that work engagement facilitates the active mobilization and creation of job resources by employees, especially when they are engaged, intrinsically motivated and therefore able to achieve their objects within a climate of psychological safety and by the absence of threats (Bakker & Demerouti, 2014; Hobfoll, 2002). In addition, following Demerouti and Cropanzano (2010), vigorous, dedicated, and absorbed employees have higher chances to fulfill their work objectives, which in turn leads to positive feedback, more rewards, and to a better environment of establishing relationships with supervisors and colleagues. Other studies argued in a similar way, that positive affective states (e.g. work engagement) can broaden the momentary-thought repertoires of employees and consequently enable enduring personal, social, and psychological resources (Fredrickson, 2003; Vacharkulksemsuk & Fredrickson, 2013). In this context, Xanthopoulou et al. (2009) showed that job resources are not just predicting work engagement, but also have a positive impact on job resources over time. To this effect, the JD-R model also considers and incorporates the level of employees' exhaustion and work engagement which impacts their job demands and job

resources. This makes the JD-R model not a deterministic but rather dynamic theory (see Figure III-3) (Bakker & Demerouti, 2014, p. 15). This leads to the question how the reversed causal relationships develop over time.

Job Demands-Resource interventions

As outlined above, individuals achieve the best job performance in environments which are challenging and resourceful since these work settings facilitate the employees' work engagement (Bakker & Demerouti, 2014, p. 17). Based on that, research also suggested that organizations can impact the job demands and resources of their employees by offering them sufficient job challenges and job resources (e.g. feedback, skill variety, and feedback), and in turn influence indirectly their engagement and performance (Bakker & Demerouti, 2014; Nielsen et al., 2008). However, it might be equally important that employees mobilize their own resources by showing proactive behavior in terms of job crafting as managers might not be available all the time for feedback and organizations may set different priorities (Bakker & Demerouti, 2014, p. 17). At this point, it should be noted that the JD-R theory also acknowledges the importance of the individual. However, organizations can apply different interventions to increase the job resources of employees such as in-company trainings. Based on that, employees can better deal with occurring job demands, while individual-driven interventions can be realized by capitalizing the one's strengths (see Figure III-5).

Fig. III-5: Classification of JD-R interventions in terms of intervention targets and levels



Source: adapted from Bakker and Demerouti (2014)

Interventions are organized by two dimensions:

- 1) Intervention level: individual versus organizational, and
- 2) Intervention target: work environment (job demands and resources) versus the individual (personal resources)

Implications for further research

Within this chapter, the Job Demands-Resources (JD-R) theory was outlined as a model that is not designed to be restricted, static and one-sided as earlier models of stress and motivation (e.g. two-factor theory, job characteristics model, DCM, ERI), but rather more flexible and rigorous. The proposed two categories of work characteristics (job demands and job resources) were proven to occur in basically every job design and work setting and trigger two different processes: health impairment and motivation. Interdependencies between these categories and processes are far more complex and interrelated than earlier models suggested. Therefore,

demands and resources have not only one-off effects on health and motivation, but also showed joint interactive effects on the well-being of employees and with regards to personal resources. In addition, the interactive effects were even capable buffering unfavorable effects of job demands. Moreover, research could also reveal the existence and underlying mechanisms of reversed causal effects, which occur due to the reciprocal influence of work characteristics, employee health and motivation over time. These interaction effects were examined by several scholars, also indicating that employees and organizational units can change their (work) environment to increase motivational factors and to reduce strains by applying job crafting and other individual adjustments of demands and resources. Consequently, certain measures can be derived based on this theory to adjust personal resources, job demands and resources within a wide range of occupations and job profiles, aiming at improving the well-being and performance of employees.

As the JD-R model gained increasingly attention in research, a comprehensive set of avenues of future research has been outlined by Bakker and Demerouti (2007, pp. 321–324) which are pertain to reciprocal relationships, objective outcomes, main and interaction effects, and the inclusion of personal resources in the JD-R model. In addition, Demerouti and Bakker (2011, pp. 3–9) stated further challenges for future research, that are partially redundant to the recommendations provided by Bakker and Demerouti (2007):

- (1) the inclusion of personal resources into the JD-R model,
- (2) examination of job demands as challenge and hindrance stressors,
- (3) integration of multilevel constructs in the JD-R model,
- (4) conduction of new methodological approaches such as diary studies,
- (5) linking the JD-R model with objective health indicators,
- (6) clarification of measurement and operationalization issues,
- (7) investigation of job crafting mechanisms.

Within their paper published in the year of 2014, Bakker and Demerouti (2014) addressed a certain number of recommendations listed above, especially the examination of the role of personal resources, the joint effects and reciprocal relationships within the model (including the buffer effect of job resources), the mechanisms of reversed causal relationships and the derivation of JD-R interventions (including the topic of job crafting). In addition, other articles provided further indications in which potential direction research on the JD-R theory should evolve. Idris et al. (2014) investigated psychological safety climate (PSC) within their multilevel longitudinal study as a precursor to job characteristics (e.g. emotional demands) and psychological outcomes (i.e., emotional exhaustion and depression). Results indicate that PSC was negatively related to job demands, which predicted burnout, and positively related to job resources, which in turn predicted engagement. Burnout as well as engagement were associated with performance. The findings of this study therefore suggest that PSC might be an antecedent within the JD-R model. In the context of this current study and by using the JD-R model as an empirical framework, the thesis aims at contributing to certain challenges for future research that have been drawn by multiple authors in the past (Bakker & Demerouti, 2007, 2014; Demerouti & Bakker, 2011).

III.3 Theory of Planned Behavior (TPB)

Understanding, explaining, and predicting human behavior with respect to all its inherent complexity can be considered as a sophisticated challenge, especially as it can be approached from multiple different levels (e.g. physiological processes or even social institutions) (Ajzen, 1991, p. 179) and by reference to stable underlying dispositions (Campbell, 1963). In order to explain and predict human behavior, scholars have in the past used and relied on different concepts in the area of behavioral dispositions such as social attitudes and personality traits (Ajzen, 1988, 1991; Campbell, 1963; Sherman & Fazio, 1983). In that regard, dispositional explanations of human behavior have a long and distinguished history in the domain of

personality and social psychology by examining the concept of trait itself but also identifying a multitude of personality traits (e.g sociability, self-esteem, emotional stability, ambitiousness). But also social psychologists focused on the concept of attitude to explain the mechanisms of human behavior (Ajzen, 2008). Based on that, research proposed various theoretical frameworks such as the cognitive self-regulation in the context of a dispositional approach to predict human behavior and to deal with the psychological processes involved (Ajzen, 1991, pp. 179–180).

In the following section, a short examination of former efforts using behavioral dispositions in order to predict human behavior will be outlined. In addition, the Theory of Reasoned Action (TRA) and its extension, the Theory of Planned Behavior (TPB) will be introduced. Compared to the TRA, the TPB integrated the concept of cognitive self-regulation as a further key element. Based on that, the application and operationalization of the TPB – including recent research findings in the area of voice and silence behavior – as well as new avenues and implications for future research will be discussed, with particular focus on unclarified issues.

Dispositional approach to the prediction of behavior

Over the last decades, many scholars tried to evaluate general attitudes and dispositions in various areas such as organizations and institutions (employers, job environment, public housing), in the social environment (minority groups) or on the individual level (interaction between persons) (Ajzen & Fishbein, 1977). Still, these general dispositions were capable of only poorly predicting human behavior in certain situations. Hence, Ajzen (1991) stated with reference to Wicker (1969):

“The failure of such general attitudes to predict specific behaviors directed at the target of the attitude has produces calls for abandoning the attitude concept” (Ajzen, 1991, p. 180).

This statement is supported by other attempts trying to predict human behavior, as their outcomes were rather disappointing. According to Mischel (1968), the con-

cept of trait, defined as a broad behavior disposition, can be claimed to be not sufficient enough to predict human behavior as empirical relations between general personality traits and the person's behavior in particular situations were low. Scholars also tried to link generalized locus of control (Rotter, 1954, 1966) and certain behaviors, but the construct of locus of control often failed to predict achievement-related behavior (Warehime, 1972) or political involvement (Levenson, 1981). However, results of those empirical studies were not promising, even when assessing behavior with more specific measures, such as health-locus of control and achievement-related locus of control (Lefcourt, 1982; Wallston et al., 1976).

In order to increase the poor predictive validity of attitudes and traits, Epstein (1983) and Fishbein and Ajzen (1974) proposed the aggregation of specific behaviors across occasions, situations, and types of action. The principle of aggregation assumes that any single behavior is not just affected by a relevant general disposition but is predominantly impacted by certain further factors unique to the specific reason, situation, and action being monitored. As a consequence, the aggregation of behavior leads to a more valid measure of the underlying behavioral disposition compared to any single behavior as these other sources show the tendency to mutually eliminate each other (Ajzen, 1991, p. 180). Following the principle of aggregation, several studies proved its increased validity as general attitudes and personality traits predict behavioral aggregates much better than particular behaviors (Ajzen, 1988, 1991).

From the principle of aggregation to the Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB)

As mentioned above, the mechanism of aggregating specific behaviors allows a higher level of validity and a better prediction towards certain behaviors. However, the principle of aggregation is not able to explain the variability across situations, nor does it allow the prediction of a particular behavior in a given situation. Atti-

tudes and personality traits are imbedded in the human behavior but can be just detected with respect to a broad, aggregated, valid sample of behaviors due to the fact that other, more immediate factors seem to be more dominant (Ajzen, 1991, p. 181). In that sense, Azjen (1980) argued that there must be certain other factors that are more closely connected to the behavior in question. Hence, broad attitudes and personality traits have only an indirect impact on certain behaviors. In contrast, the framework of the Theory of Planned Behavior (TPB) – as an extension of the Theory of Reasoned Action (TRA) – takes these behavior-specific factors and the limitations of former models into consideration and therefore provides a more precise prediction and explanation regards human behavior in explicit contexts.

The Theory of Reasoned Action (TRA) as an earlier conceptual framework

The TRA (Ajzen & Fishbein, 1977; Azjen, 1980) was developed as a response to earlier concepts that attempted to understand, explain, and predict *human behavior* as well as to their associated limitations and poor predictive validity (see Figure III-6). The theory can be considered as a deliberative processing model implying that individuals act rational and make systematic use of available information. According to Azjen (1980), individuals take the implications of their own behaviors into reflection before taking the decision to engage or not to engage in behavior.

From a historical point of view, the impetus for the development of the TRA can be traced back to the research conducted by Fishbein on the psychological process by which attitudes cause behavior (Fishbein, 1967), but also by former attempts to predict individuals' behavior according to the concept of attitudes (Ajzen, 1991). Within this research, an expectancy-value framework (Peak, 1955) was used to explain the interaction between beliefs and attitudes. In addition, the variable of behavioral intention was introduced as an intermediate between attitudes and behavior (Conner & Norman, 2005, p. 170). This approach offered a more precise explanation under which conditions strong attitude-behavior relationships can be

expected and was further developed by Fishbein and Ajzen (Ajzen & Fishbein, 1977; Fischbein & Ajzen, 1975) as the principle of compatibility (Ajzen, 1988).

The principle of compatibility states that measures of attitude and behavior consists exactly of the four elements: action/behavior, target/object, context, and time/occasion (Ajzen & Fishbein, 2005, p. 29). A narrative review of attitude-behavior research in various disciplines including industrial psychology (Harrison et al., 2006), health psychology (Siegel et al., 2014) or environmental education (Carmi et al., 2015) provided support for the principle of compatibility as

“Correlations between attitudes and behavior were substantial only when these variables were assessed at compatible levels of specificity or generality; when the measures were incompatible, the correlations were very low and usually not significant” (Ajzen & Fishbein, 2005, p. 31).

Based on that, it can be assumed that general classes of behaviors get influenced by general attitudes and in turn specific attitudes have an impact on specific behaviors. The pre-work and considerations of the principle of compatibility are very important in the development of appropriate measures for components of the TRA as well as TPB as an extension of the TRA (Conner & Norman, 2005, p. 171).

The TRA itself has been widely used in multiple domains to predict behavioral intentions and/or behavior and hence can be assigned to the category of expectancy-value models as it emphasizes attitudes, subjective norms, intentions, and behaviors directed to a specific focus of expectations. Frameworks based on expectancy-value models contributed in general to the understanding of relationships between the one's attitudes and their underlying beliefs (Blue, 1995, p. 106). In this context, the construct of outcome expectancy is defined as

“the belief that a given behavior will lead or will not lead to a certain outcome” (Blue, 1995, p. 106).

On the other side, outcome value (Ajzen, 1980; Cooper, 1984; Eagly & Chaiken, 1993) can be described as

“the individual’s evaluation or subjective value placed on that outcome” (Blue, 1995, p. 106).

The outlined coherence and interaction can be also mathematically stated as: attitude = \sum Expectations x Value. Due to the model’s rather specific nature it allows to understand and also to predict intentions and/or behavior (Blue, 1995). Multiple meta-analyses (e.g. Sheppard et al., 1988) have shown that the TRA not only makes it possible to predict behavioral intentions and behavior but also helps to derive strategies and measures of how and where to change certain behaviors. In this sense it is important to note that the development and application of the TRA was conducted in the context of full volitional control (Madden et al., 1992, p. 3).

According to the TRA, behavioral *intention* is one key element of the model which can be described as the motivation – operationalized as the sense of a certain conscious plan, decision or self-instruction – and is the best single predictor for the investment of a certain amount of effort in performing an intended behavior (Blue, 1995, p. 106). In addition, behavioral intentions as immediate antecedents of behaviors are also a function of salient information or beliefs about the likelihood that performing a certain behavior might lead to a specific outcome (Madden et al., 1992, p. 3). It can be stated that the stronger the intention to engage into a certain behavior, the higher the chance that the actual behavior will be performed (Ajzen, 1991, p. 181). Within the Theory of Reasoned Action (TRA), the transformation of an unobservable attitude into observable action is illustrated by the psychological construct of intention as a mediator between attitudes towards a specific behavior and the performance of the behavior itself. Nevertheless, the TRA provides less clarity on factors leading attitudes to be translated into intentions. Following possible explanations from scholars, the individual’s anticipated opportunity to actually perform the behavior may cause the formation of an intention (Conner & Norman, 2005, p. 171).

The second determinant of a person's intention is *subjective norm*. The construct expresses the perception of individuals whether one should perform the targeted behavior based on others' view and hence represents the perceived social pressure (Ajzen, 1980; Blue, 1995). With respect to attitudes and subjective norms as antecedents of the intention to perform a certain behavior, the TRA also describes *behavioral and normative beliefs* as antecedents to attitudes and the subjective norm itself. In this context, attitudes were defined as

“a learned disposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fischbein & Ajzen, 1975).

In addition, *attitude* itself can be described as a function of a cognitive belief structure that consists of two subcomponents: (1) salient beliefs that the behavioral performance will lead to the desired outcome and (2) the evaluation of the outcome.

It should be also mentioned that the TRA restricts its predictability only to volitional behaviors. As proposed by Ajzen (1980), existing external variables are not directly impacting intentions and behavior but just influencing them through behavioral and normative beliefs at first. Following this argumentation, individuals do not perform a certain behaviors due to personality traits, other people or institutions or cultural and demographic backgrounds, but due to the constructs and their interrelations outlined (i.e., behavioral and normative beliefs, attitude, subjective norm, and intention) (Ajzen, 1980; Blue, 1995). Therefore, certain behaviors that primarily require skills, resources or specific opportunities which are not freely accessible are likely to be just poorly predicted by the TRA (Terry et al., 1993).

According to Blue (1995) the interaction between behavior, intentions, attitude and subjective norm can be presented in an algebraic formula:

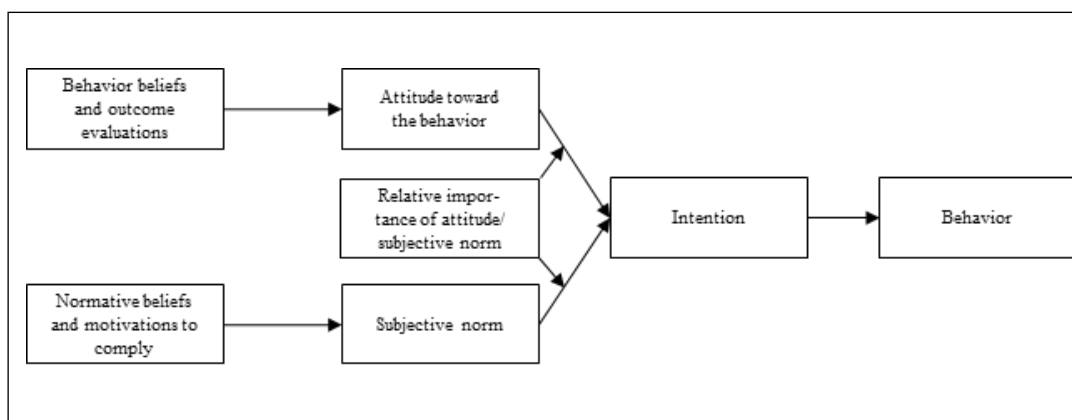
$$B = BI = (A)w_1 + (SN)w_2$$

“Where w_1 and w_2 are empirically weights showing differences of the effect on intention from attitude and subjective norm depending on the behavior in question” (Blue, 1995, p. 106).

Consequently, depending on the particular situation given, behavioral intentions are determined differently. As an explanation, for some behaviors, the component of attitude may have a stronger influence on behavioral intentions. In other situations, the normative component may be more important to perform a certain behavior and therefore has a stronger impact on the individual’s behavioral intentions (Ajzen, 1980; Blue, 1995; Fischbein & Ajzen, 1975). In general, these behavioral intentions remain just stable over a certain period. The level of stability can be increased if the intentions are available in an aggregated form. For this reason, the period between the measurement of intention and behavior should be kept as short as possible to restrain the prediction of behavior from intention (Ajzen, 1980; Blue, 1995, p. 106).

In the past, multiple scholars proposed and tested additional variables to extend the TRA due to its main point of criticism: the boundary condition of pure volitional control (Madden et al., 1992, p. 4). This approach includes inter alia the addition of personal norms (Fishbein, 1967), moral obligations (Gorsuch & Ortberg, 1983; Zuckerman & Reis, 1978), or competing attitudes (Davidson & Morrison, 1983).

Fig. III-6: The theory of reasoned action (TRA)



Source: adapted from Blue (1995)

The Theory of Planned Behavior (TPB)

As mentioned before, the principle of aggregation is not capable of explaining behavioral variability across situations and cannot predict a particular behavior in a specific situation. General attitudes and personality traits are entailed in human behavior, but their direct impact on specific actions in certain situations is also caused by other, more immediate coefficients (Ajzen, 1991, p. 181) as they are more closely linked to the behavior itself (Ajzen, 1980). Therefore, the Theory of Planned Behavior (TPB) as a framework was developed (Ajzen, 1988) to understand the nature of these behavior-specific factors as well as to predict and to explain human behaviors in certain situations to its full extent.

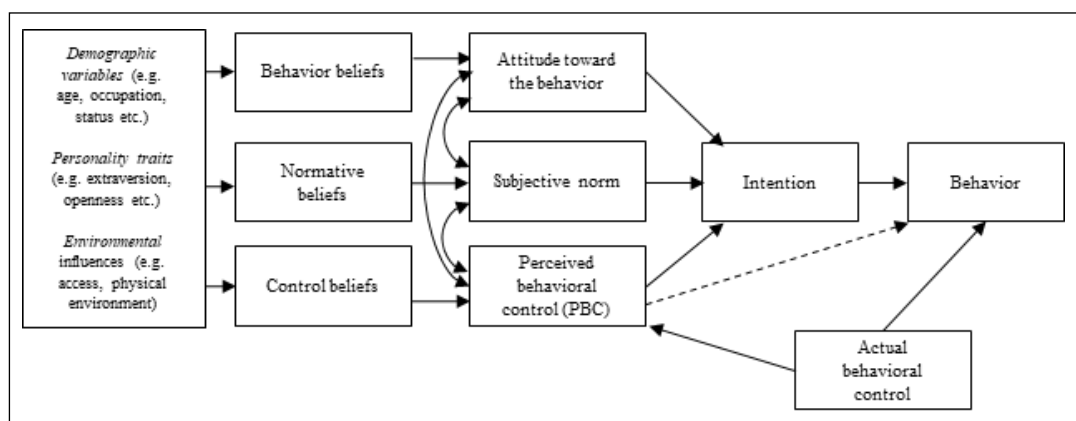
The TPB is an extension of the TRA (Ajzen, 1985, 1987, 1988, 1989, 1991; Madden et al., 1992), the former addressing the limitations of the latter in dealing with behaviors over which people have only incomplete volitional control (Ajzen, 1991, p. 181). In order to extend the boundary condition of pure volitional control specified by the TRA, the TPB incorporates explicit considerations of perceptions of control over performance of the behavior (perceived behavior control) as an additional antecedent to explain an individual's behavior that may not be entirely under control for a variety of reasons (Blue, 1995, p. 107). In doing so, the TPB can explain complex goals and behaviors that require the performance of a complex series of other behaviors (Conner & Norman, 2005, p. 171).

Research findings of studies applying the TPB and TRA showed a high level of theoretical robustness and explanatory contribution. For instance, Sheppard et al. (1988) conducted a meta-analysis investigating the effectiveness of the TRA and found overall evidence for the predictive utility of the model. The finding of the meta-analysis showed generally strong correlations (averaging .66) between behavioral intention and attitude as well as subjective norm. In addition, Kim and Hunter (1993) performed another prominent meta-analysis investigating 138 attitude-behavior correlations with a total sample size of 90,908. Results of this study revealed strong correlations (in average .79) between behavioral intention and ac-

tual performance. More recently, Armitage and Conner (2001) presented a quantitative integrated study examining 185 independent studies by performing bivariate correlation analyses. Within their meta-analysis, the TPB accounted for 27% and 39% of variance in behavior and intention, respectively. In addition, perceived behavioral control (PBC) also accounted for significant amounts of variance in intention and behavior. Furthermore, results indicated that the TPB accounted 11% more of the behavior's variance when behavior was measured by self-reports compared to objective or observing measures (Armitage & Conner, 2001, p. 471). The recognition regarding the high level of applicability and utility of the TPB is also in line with the research findings of the meta-analysis of Hausenblas and Carron (1997).

As outlined in Figure III-7, the TPB is constructed on key factors and the reasoning of the TRA, but also includes the element of perceived behavioral control (PBC) and considers certain interdependencies as well as feedback loops.

Fig. III-7: Theory of planned behavior (TPB)



Source: adapted from Ajzen (1991)

In general, the concept of perceived behavior (PBC) control is based on the following assumption: the more the individual beliefs to possess essential resources and opportunities to perform a given behavior, the higher should be the perceived

behavior control over the behavior. As shown in Figure III-7, PBC is integrated in the framework as an exogeneous variable having (a) a direct effect on the behavior as well as (b) an indirect effect on the behavior through the individual's intention. It should be emphasized that the interplay between intention and behavior – as people intend to outperform a certain behavior – is way less complex than the link between PBC and the individual's behavior. In line with the TRA, the intention of the individual is a very central factor within the TPB since it captures motivational factors that in turn have an impact on the behavior (Ajzen, 1991, p. 181). Referring to the element of intention, individuals can find themselves in different situations in which their behavior may be under volitional or non-volitional control. As a result, individuals cannot decide at any case to perform or not to perform the intended behavior at will. In some cases, volitional control over the behavior in question might be given, but the performance of most behaviors are depending at least to some degree on non-motivational factors such as the availability of requisite opportunities and resources (Ajzen, 1991, pp. 181–182) or personal and environmental factors (Conner & Norman, 2005, p. 172). According to Ajzen (1985), non-motivational factors can be defined as time, money, skills or cooperation of others. Hence, motivational, and non-motivational factors can be considered as the individual's actual control over the behavior, or in different words:

“To the extent that a person has the required opportunities and resources, and intends to perform the behavior, he or she should succeed in doing so” (Ajzen, 1991, p. 182).

Consequently, if individuals lack the required resources and opportunities and therefore belief to have just little control over performing the particular behavior intended, their intentions to actually perform the behavior may be low, even under the secondary condition of owning favorable attitudes and/or having affirmative subjective norms. This assumption was also proven empirically. Bandura et al. (1980) brought evidence that the individual's actual behavior is strongly influenced by the associated confidence in their abilities and skills (self-efficacy) of

performing the desired behavior. It might be worth mentioning at this point that PBC is most compatible with the previously addressed concept of perceived behavioral self-efficacy (Bandura et al., 1977):

“[perceived behavioral self-efficacy] is concerned with judgments of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982, p. 122).

In that regard, research showed (Bandura et al., 1977; Bandura et al., 1980) that confidence in the ability to perform the behavior intended is highly valued. As a consequence, self-efficacy beliefs have a great impact on the particular choice of activities as well as on thought patterns and emotional reactions (Bandura, 1982, 1991). Therefore, the TPB integrates the construct of self-efficacy (PBC) in its framework of the interactions among behavior, intentions, attitudes, and beliefs. (Ajzen, 1991, p. 184).

However, the relation between the concept of PBC and intentions can be considered as the motivational influence of control on the behavior realized by intentions (Madden et al., 1992, p. 4). Ajzen (1991) highlights in this context:

“The addition of perceived behavioral control should become increasingly useful as volitional control over behavior decreases” (Ajzen, 1991, p. 185).

As a brief side note, Ajzen (1985) defined in its first approach of deriving the TPB intentions as *trying* to perform a behavior instead of fulfilling the actual performance (for further insights into the concept of trying, see Bagozzi & Warshaw, 1992). Anyhow, throughout the early conceptualization phase of the TPB, strong correlations between measures of the framework’s variables focusing on trying to perform a specific behavior and measures stressing the actual performance of the behavior were found (Ajzen & Madden, 1986; Schifter & Ajzen, 1985). Therefore, intentions is now defined according to the more simple construct of behavioral performance (Ajzen, 1991, p. 182).

In addition, the scientific finding that people's actual behavior is mainly influenced by intention (motivation) as well as behavioral control (ability) is not new at all (Ajzen, 1991, pp. 182–183). With respect to rather general models explaining human behavior, the conception of behavioral control can also be found in the form of *facilitating factors* (Triandis, 1977), the context of *opportunity* (Sarver, 1983), *resources* (Liska, 1984), or *action control* (Kuhl, 1984). Associated therewith, research on various other domains and issues contributed to the reasoning of this theorizing such as the level of aspiration (Lewin & Gold, 1999), performance on psychomotor and cognitive tasks (Fleishman, 1958; Vroom, 1964), as well as person perception and attribution (Anderson, 1974; Heider, 1944). They all share the pattern that these specific conceptions of behavioral control are included in the more general models of human behavior as described above. Based on this it can be assumed that the effects of the interplay between motivation (intention) and ability (control) have an impact on behavioral achievements of individuals (Ajzen, 1991, p. 183).

PBC as the key differentiating element of the TPB from the TRA also provides an explanation why intentions do not inevitably predict behavior. Potential constraints on action perceived by the individual can be considered as a possible reason. Therefore, the concept of behavior can be described within the TPB as a linear regression function of behavioral intention and PBC:

$$B = w_1BI + w_2PBC$$

“Where B is behavior, BI is behavioral intention, PBC is perceived behavioral control, and w_1 and w_2 are regression weights” (Conner & Norman, 2005, p. 172).

Following this argumentation line, PBC is hence supposed to decrease the level of volitional control and consequently support transferring behavioral intentions into concrete action as well as allow to predict the individual's behavior to a certain extent (Armitage & Conner, 2001; Conner & Norman, 2005). However, the meas-

urement of the construct of PBC is preferable but from a methodological as well as operational perspective difficult to obtain. Hence, perceptions of PBC are applied in research to proxy measures for actual control (Conner & Norman, 2005, p. 172). In this context,

“perceived behavioral control will predict behavior directly to the extent that the measure matches actual control” (Ajzen, 1988).

Scholars over the past years examined the interaction between PBC and intentions. Armitage and Conner (2001) stated in their review that approximately half of reports tested proved this interconnection to be significant. In addition, Sheeran and Abraham (2003) showed in their quantitative study that in cases where PBC revealed to be accurate, it in turn made a more precise prediction of behavior as well as moderated the interconnection between the individual’s intention and behavior.

The role and mechanisms of PBC as a determinant within the TPB framework

As outlined above and compared to the TRA, the TPB incorporates in addition to attitude and subjective norm a third component, the PBC as an additional predictor of intentions as well as even a direct predictor to behavior. Control itself is understood as a continuum which on the one hand consists of rather easily performed behaviors (e.g. simple daily tasks), and on the other hand of rather complex behavioral performance and goals which require certain resources, opportunity, and skills (e.g. achieving a certain demanding profession) (Conner & Norman, 2005, p. 173). From a mathematical angle, behavioral intentions can be described as linear regression function consisting of attitudes, subjective norms and PBC:

$$BI = w_3A + w_4SN + w_5PBC$$

“Where BI is behavioral intention, A is attitude toward the behavior, SN is subjective norm, PBC is perceived behavioral control, and w_3 to w_5 are empirical weights indicating the relative importance of the determinants of intention” (Conner & Norman, 2005, p. 173).

Leaving the PBC component out of the equation, the equation would describe the TRA. In contrast, within the TPB framework PCB is linked to intentions as well as directly to behavior. The intention-link indicates that people show more intention in engaging in positively connoted valued behaviors which are also deemed feasible (Bandura, 1986; Conner & Norman, 2005). Research also showed that the importance of attitude, subjective norm as well as PBC is not stable in the context of investigation. Consequently, the impact of these determinants and their predictive power on the individual's intention are assumed to vary across certain behaviors and conditions (Ajzen, 1991, p. 188). Scholars provided proof that differences in the weights regarding the particular antecedents (attitude, subjective norm, PBC) of intentions differ from person to person. Some individuals therefore tend to base their notified behavior on the respective determinants of their intentions with different weightings – some individuals might rather base their intention on subjective norms across behaviors, whereas others rather on attitudes (Trafimow & Finlay, 1996). Scholars also revealed that PBC may provide in the exact same situation less prediction towards the intention, whereas both other antecedents (attitudes and subjective norm) demonstrated quite strong effects. Additionally, several studies offered indirect evidence for this observation: measures regarding attitude strength (Sparks et al., 1992) and individual differences in sociability (Trafimow & Finlay, 1996) demonstrated to enhance the relative predictability of subjective norms as well as attitudes (Conner & Norman, 2005, p. 173).

From an empirical point of view, Ajzen and Madden (1986) were the two first researchers testing the TPB as an extension of the TRA in two experiments. Their study covered both theoretical frameworks, the TRA as well as the TPB – the latter framework integrating PBC as a determinant of intention next to attitudes and subjective norms. The first experiment examined the college students' class attendance and results of hierarchical regression analyses indicated that PBC added significantly to the prediction of intentions after controlling for attitudes and subjective norms. Additionally, and as expected, the TPB permitted more accurate

predictive power of intentions and goal attainment than the TRA. But, contrary to the expectations, PBC could provide only little prediction of targeted behavior after controlling for intentions (Ajzen & Madden, 1986; Conner & Norman, 2005). The second experiment of Ajzen and Madden (1986) focused on the students' attitudes, subjective norms and PBC towards receiving an "A" in a course, whereas the students' target behavior was measured by the actual grade to the course. Study data was collected in two different waves, one at the start and one at the end of the course. The result evaluation of the first wave showed similar outcomes as the first experiment in the overall study conducted: PBC increased the predictive power of intentions in the context of the TRA, but did not show any prediction of behavior. In contrary to the first wave, the result examination of the second wave showed that PBC still predicted the behavior of the students, even after controlling for intentions. The most interesting finding appeared also with regards to the prediction of target behavior in the context of wave number two: the PBC of the students became more accurate at the end of the semester as the students turned out to be more familiar with the circumstances surrounding their behavior. Therefore, just in the case when the perception of the students were accurate, then PBC was considered as a significant predictor of target behavior (Ajzen & Madden, 1986).

Beliefs in human behavior in the context of the TBP

As outlined above, the TPB aims at explaining and predicting human behavior by addressing attitudes, subjective norms and PBC which finally determine the individuals' intention and their associated behavior. According to Ajzen (1991, p. 189), the TPB states that behavior itself can be understood as a function of salient information or *beliefs*, that are both highly relevant to the behavior intended. In his very well renown article about the *magical number seven, plus minus two*, dealing with the limits on humans' capacity in processing information, Miller (1956) argued that humans can hold a great amount of beliefs about any given behavior, but at

any given moment, they can consider just a relatively small number of beliefs. Within the context of the TPB, these *salient beliefs* are assumed to dominate the individuals' intentions and behaviors ultimately. Ajzen (1991, p. 189) defines three kinds of salient beliefs:

- (1) *behavioral beliefs* determining attitudes toward the behavior,
- (2) *normative beliefs* influencing underlying determinants of subjective norms
- (3) *control beliefs* impacting the perceptions of behavioral control.

In the following paragraph, all three types of salient beliefs (behavioral beliefs, normative beliefs, control beliefs) will be outlined as well as supported by empirical results for each type.

(1) Salient behavioral beliefs as determinants of attitudes

As attitude, subjective norm and PBC are antecedents of intentions, these components also have their own particular determinants (*beliefs*), which are in literature sometimes indicated as direct or indirect measures (Ajzen, 1980; Conner & Norman, 2005). Focusing in this section on behavioral beliefs and attitudes toward behavior, the expectancy-value model (Peak, 1955) can provide beneficial explanatory contribution. Referring to the model, Fischbein and Ajzen (1975) stated that attitudes are developing reasonably from the beliefs individuals hold about the object of the attitude. Hence, beliefs about an object are formed in association with specific attributes. Referring to attitudes toward behaviors, each belief connects the individual's behavior to a certain outcome (e.g. costs incurred in carrying out the behavior performed) (Ajzen, 1991, p. 191). Due to this process, individuals automatically and simultaneously develop an attitude towards their behavior as the behavior itself is already valued positively or negatively over time and on experiences gained. Following the argumentation of Ajzen (1991), individuals are therefore more inclined to perform behaviors they believe have largely desirable consequences and try to transform unfavorable attitudes that are linked to rather undesirable consequences. In that sense,

“Consequences are composed of the multiplicative combination of the perceived likelihood that performance of the behavior will lead to a particular outcome and the evaluation of that outcome” (Conner & Norman, 2005, p. 174).

Spoken from a mathematically point of view, the products of the expectancy-value model will be summed up over the various salient consequences:

$$A = \sum_{i=1}^{i=p} b_i \circ e_i$$

Based on this equation, b_i as the behavioral belief that the behavior performed leads to certain consequences is multiplied with e_i as the evaluation of the consequence i . The resulting products are summed over p as the number of salient beliefs. At that point, it should be noted that according to Eagly and Chaiken (1993), individuals do not always perform such calculation each time before performing an intended behavior. It is rather the case that results of such considerations are stored in the individual's memory and are only being retrieved when they are required. Consequently, the equation serves its purpose more by capturing the outcome of such a process and appears as a function of learning (Ajzen & Fishbein, 2000). To summarize, the connection between attitudes and behavioral beliefs can be considered as generally strong (Armitage & Conner, 2001). In conclusion, the individual's attitude is determined by the salient belief Conner and Norman (2005).

Over the last decades, many studies examined the expectancy-value model of attitude and its application to behavior (Ajzen, 1974; Fishbein, 1963; Fishbein & Ajzen, 1981; Godin & Shephard, 1987; Insko et al., 1970; Jaccard & Davidson, 1972; Rosenberg, 1956). The results of these studies revealed general support for the hypothesized relation between salient beliefs and attitudes. However, the magnitude of the relation investigated was disappointing in some cases (Ajzen, 1991, p. 192). Referring to these cases, the low correlation values between salient beliefs and attitudes can be attributed to various factors. According to Ajzen (1991, p. 192), the expectancy-value model might not have the necessary explanatory

power of how attitudes are formed and structured. Valiquette et al. (1988) stressed within their research the multiplicative combination of beliefs and evaluations of the model. Therefore, most of the critics regarding the expectancy-value model focused more on methodological issues regarding the measurement and operationalization of belief salience as well as the optimal scaling of beliefs and evaluation items (Ajzen, 1991, pp. 192–193).

(2) Normative beliefs as determinants of subjective norms

Subjective norm as an antecedent of intentions can be defined as a function of normative beliefs. Those beliefs are concerned with the likelihood that specific salient referents or groups approve or disapprove the execution of a certain behavior (Ajzen, 1991; Conner & Norman, 2005). In mathematical terms, the likelihood of performing a behavior with reference to the perceptions on external factors (referents or groups) is multiplied by the individual's motivation to follow these social expectations occurring from outside. In this context, the motivation to actually meet these external expectations corresponds with the extent to which the individual wishes to comply with the specific expectations of the referent on this particular issue (Conner & Norman, 2005, p. 175). Based on that, the following equation can be derived:

$$SN = \sum_{j=1}^{j=q} nb_j \circ mc_j$$

In this equation,

“SN is the subjective norm, nb_j the normative belief (i.e. a subjective probability) that some referent j thinks one should perform the behavior, mc_j is the motivation to comply with the referent j , and q is the number of salient referents” (Conner & Norman, 2005, p. 175).

At this point, some researchers emphasized that actually no clear distinction between normative beliefs and behavioral beliefs can be made (Miniard & Cohen, 1981). In addition, several studies also proved that there is substantial correlation

between these two antecedents (O'Keefe, 1990). Nevertheless, some scholars contributed in drawing a more concrete line between the determinants of behavior as they are attributes of the individual and those which are attributes of the individual's social environment (Eagly & Chaiken, 1993; Trafimow & Fishbein, 1995). From a different empirical point of view, subjective norm is normally measured and operationalized by letting respondents rate the extent to which "important others" think the person should perform or not perform the behavior given (Ajzen, 1991, p. 195). Multiple empirical examinations demonstrated that bipolar scoring of normative beliefs and unipolar scoring of motivation to comply provided the best correspondence between global measures of subjective norms and belief-based measures (Ajzen, 1991, p. 195). Following these empirical investigations, correlations resulting from measuring belief-based and global estimates of subjective norm score normally in the range of .40 to .80, quite similar to findings regarding attitudes (Ajzen & Madden, 1986; Fishbein & Ajzen, 1981; Otis et al., 1990). Based on this scoring method, scholars disclosed strong correlations between normative beliefs and subjective norms (Armitage & Conner, 2001) and therefore supported the expectancy-value nature of the subjective norm equation outlined above (Eagly & Chaiken, 1993).

(3) Control beliefs as determinants of perceived behavioral control

According to Ajzen (1988, 1991), control beliefs can be considered within the TPB as the most important type of beliefs as they have ultimately the strongest influence on intention and behavior. By the fact that these control beliefs directly influence judgements of PBC, they refer to the situation in which an individual has access (or no access) to the requisite resources and opportunities to perform a certain behavior. In addition, these beliefs are shaped by the perception of internal or external factors that enable or inhibit the performance of the individual's behavior (Conner & Norman, 2005). Research suggested that control beliefs themselves may be traced back to experiences made in the past with the behavior. On the other side, they may also be related to external information received about the behavior

(e.g. from friends and the social environment) or by other reasons that influence the perception of how easy or difficult it may be to perform a particular behavior (Ajzen, 1991). In this context, resources or opportunities can be regarded as internal (e.g. skills, abilities, know-how, information, emotions) or external (barriers, support, possibilities) control factors. The TPB claims that individuals who believe having access to the required internal and external resources at their disposal and facing fewer obstacles or impediments (or more opportunities), the greater should be their perceived control over the intended behavior (Ajzen, 1991). Ajzen (1991) proposed to weight each control factor by its perceived power to support or to impede the execution of behavior. The equation described below is representing PBC as the interplay between c_k as the perceived frequency or likelihood of occurrence of the factor k , p_k as the perceived supporting or impeding power of the factor k , and r as the number of control factors (Conner & Norman, 2005, p. 176).

$$PBC = \sum_{k=1}^{k=r} c_k \circ p_k$$

Summarizing the intention of this equation, it can be argued that

“The model quantifies these beliefs by multiplying the frequency or likelihood to occurrence of the factor by the subjective perception of the power of the factor to facilitate or inhibit the performance of the behavior” (Conner & Norman, 2005, p. 175).

It might be worth mentioning that the equation of PBC draws many parallels with the expectancy-value calculation. However, already in the year of 1991, Ajzen (1991) is pointing to the fact that only few studies (e.g. Ajzen & Madden, 1986) examined the coherence of specific control beliefs and PBC. First attempts to prove the existence of correlations were made by Ajzen and Driver (1992) by the study on leisure activities. But also in the year of 2001, Armitage and Conner (2001) brought to mind that scholars have put relatively little attention to this research issue. They argued that until the end of 1997, only 18 published studies reported results regarding the relation between control belief and PBC (Armitage

& Conner, 2001, p. 488). With reference to the above-mentioned statement that control beliefs with their strong influence on intention and behavior can be considered as the most powerful type of beliefs within the TPB framework, it is surprising that further investigation regarding the interconnection between control belief and PBC is still not sufficient. However, a study published by Armitage and Conner (2000) showed that control beliefs (conceptualized according to Ajzen, 1991) can be considered as determinants of self-efficacy, but also reported just weak correlation with PBC.

Critics regarding the Theory of Planned Behavior

The TPB and respectively the TRA were also subjects of numerous criticisms since their origin. Critics regarding both theoretical frameworks were addressing primarily methodological, conceptual and application-related topics. Within their meta analyses examining the efficacy of the TPB, Armitage and Conner (2001) outlined certain issues surrounding the TPB, such as the issue of (a) self-report, (b) control variable, (c) behavioral intentions, (d) subjective norms.

(a) Self-report

The investigation of both theories mostly relied on self-reports, regardless the impairment of the data conducted due to self-presentational biases. Counter-intuitively, to the disadvantage of the variability and reliability of the TRA as well as TPB, the issue of self-reported data was ignored in the literature for a quite some time (Armitage & Conner, 2001, p. 475), although multiple studies showed the vulnerability of such self-reported data in the context of the TRA and TPB (e.g. Gaes et al., 1978). However, there are some studies that dealt with this issue. As an example, the study of Hessing et al. (1988) investigated the TRA in the context of tax evasion and compared self-reported data with official documents evaluated. Results revealed on the one hand that attitudes and subjective norm did correlate with the self-reported behavior on a significant level. On the other hand, nonsignif-

icant correlations were reported between respondents' self-reports of tax evasion and officially documented behavior, even though all potential claims against the individuals had been settled. Results of this study therefore suggested that the methodological approach of conducting data via self-reports of behavior are more unreliable compared to applying more objective measures of behavior (Armitage & Conner, 1999a, 1999b; Norwich & Rovoli, 1993; Pellino TA, 1997).

(b) Control variable

As already outlined, the fundamental difference between both theoretical frameworks lies in the control variable (PBC), integrated into the TPB. With regard to this control component, many controversial discussions regarding its operationalization and measurability were made. Ajzen (1991) stated that PBC is most compatible with the concept of perceived self-efficacy by Bandura (1977, 1982). In contrast, other researchers such as Terry (1993) argued, that self-efficacy and PBC are not interchangeable. Especially Bandura (1986, 1992) reasoned that compared to PBC which is dealing with more general, external factors, the concept of self-efficacy is focusing more on cognitive perceptions of control resting on internal control factors (Armitage & Conner, 2001). Other researchers also espoused to rather measure self-efficacy instead of PBC in order to predict intentions and behaviors of individuals. Vries et al. (1988) investigated the role of self-efficacy as a third factor besides attitudes and subjective norm as a predictor of behavioral intentions. They could show that self-efficacy expectations added significantly to the prediction of intention as well as self-efficacy per se also had a direct effect on behavior, after controlling for intention (Vries et al., 1988, p. 273). Referring to their study outcomes, Vries et al. (1988, p. 275) also indicated that self-efficacy highly reflected the actual control of the individuals. In addition, Dzewaltowski et al. (1990) supported in their study, comparing the TRA, TPB, and social cognitive theory, the predictive power of self-efficacy on behavior. To bring more clarity to this controversially discussed topic, K. M. White et al. (1994) closely examined within a longitudinal study the distinction among the three aspects (self-efficacy,

PBC and planning) of the control component of the TPB. They provided evidence that all three measures applied had differing effects on intentions and reported behavior. Specifically, self-efficacy had a strong effect on behavioral intentions, but not on the behavior itself. As expected, the effects of PBC were weaker than the effects of self-efficacy or planning. Additionally, PBC even failed to show a significant effect on either the behavioral intentions or on the behavior. Nevertheless, PCB exhibited a significant impact on the reported behavior for discussing whether to actually perform the intended behavior (K. M. White et al., 1994, p. 2184). This observation is in line with the research conducted by Terry and O'Leary (1995) as self-efficacy could only predict intentions, while PBC had an influence on exercise behavior (Armitage & Conner, 2001).

To summarize, many researchers offered evidence and therefore advocated to distinguish between both concepts of self-efficacy and PBC (see also Manstead & van Eekelen, 1998). Recently, scholars (Chan & Fishbein, 1993; Sparks et al., 1997) were discussing on a more micro level whether to distinguish between perceived difficulty and perceived control as the measurement of perceived difficulty is more meaningful to the respondents and is also more in alignment with the original conceptualization of PBC presented by Ajzen (1991). The outcomes of two studies of Sparks et al. (1997) were interpreted as evidence to support the use of perceived difficulty over perceived control (Armitage & Conner, 2001, p. 477). The approach of Sparks et al. (1997) was mainly being criticized by Armitage and Conner (1999a, 1999b) from a methodological point of view as the evaluation of respondents regarding the ease or difficulty of performing a certain behavior does not allow to distinguish both states (ease or difficulty) respectively to external (e.g. availability) and internal (e.g. confidence) factors (Armitage & Conner, 2001, p. 477). Furthermore, the cross-sectional study design of Sparks et al. (1997) does not permit the examination of effects on subsequent behavior. Finally, Armitage and Conner (1999a, 1999b) contributed through their research to the differentiation between self-efficacy and perceived control over behavior.

(c) *Intention*

Intention as a central construct of both theoretical frameworks (TRA and TPB) is considered to capture motivational factors that influence a behavior, but also indicates of how hard individuals are willing to try and how much effort they would invest in order to perform the behavior given (Ajzen, 1991, p. 181). In literature, very clear and precise measures of intention were not always employed (Armitage & Conner, 2001, p. 477). Several researchers (Sheppard et al., 1988; Warshaw & Davis, 1985) proposed to consider and to distinguish between *behavioral intentions* (e.g. *I intend to perform behavior x*) and *self-predictions* (e.g. *How likely is it that you will perform behavior x?*) when aiming on predicting behavior within the context of the TRA and TPB. Based on their meta-analysis with respect to the TRA, Sheppard et al. (1988) provided evidence for the assumption that self-predictions showed stronger predictions of behavior as they are capturing factors that may facilitate or inhibit performance on behavior (Armitage & Conner, 2001, p. 477). The empirical results of their meta-analyses revealed the validity of their assumptions as the correlation to behavior for studies using an estimation measure (self-predictions) scored $r = .57$, compared to a lower correlation value of $r = .49$ for studies applying the behavioral intention measure. However, individuals' attitudes and subjective norms predicted their intentions better and therefore accounted for more variance (mean $r = .73$) than self-predictions (mean $r = .61$) (Sheppard et al., 1988, p. 337). With respect to the TPB, it could be expected that when taking PBC into consideration as a construct covering perceptions of the factors that might facilitate or inhibit performance on behavior, there may be little differences in the predictive power of intentions compared to self-predictions (Armitage & Conner, 2001, pp. 477–488). In addition, other scholars such as Bagozzi and Warshaw (1992) suggested that attitudes do not directly transform (or not) into intentions to act, and they in turn (or not) into concrete behavior. They proposed *desires* (e.g. *I want to perform behavior x*) as antecedents of behavioral intentions which could be expected to pervade intentions, as they partly are capturing behav-

ioral self-predictions. Following this argumentation one could assume that PBC is supposed to provide more unique variance to the prediction of behavior in the case of applying measure of desire instead of self-predictions as desires do not capture factors that are facilitate or inhibit behavior (Armitage & Conner, 2001, p. 478). In this regard, it is not clear whether PBC is supposed to be more closely associated with self-predictions than with desires or, whether intentions can be considered as mediator between desires and self-predictions (Armitage & Conner, 2001, p. 478).

(d) Subjective norms

The last point of criticism that was raised by Armitage and Conner (2001) is dealing with the normative component which was added last to the TRA (Fischbein & Ajzen, 1975) and which is considered by multiple authors to be the weakest component of the entire framework (Armitage & Conner, 2001, p. 478). Several meta-analyses (e.g. Godin, 1993; Sheppard et al., 1988; van den Putte et al., 1993) provided support for the claim that subjective norm contributes the lowest predictive power of intentions. As a consequence, several authors deliberately eliminated the concept of subjective norm from their analyses (e.g. Sparks et al., 1995). On the contrary, Trafimow and Finlay (1996) acknowledged the fact that subjective norms typically account for a significant, although small proportion of unique variance in intentions, but they hypothesized that this effect can be explained largely by differences in the degree to which individuals are apt to be more under normative control. Within their study investigating subjective norms toward performing 30 behaviors they provided evidence for the distinction between individuals whose actions are under attitudinal or normative control across the behaviors (Trafimow & Finlay, 1996, p. 820). In addition, different facets of normative conduct (e.g. descriptive and moral norms) were revealed. These facets were also found to independently predict intentions (Beck & Ajzen, 1991; Conner et al., 1996; Conner & Armitage, 1998). Another reason for the rather poor predictability of the construct of subjective norm was found in the way how it is normally measured (Armitage

& Conner, 2001, p. 478). Instead of using more reliable multi-item scales (e.g. Nunnally, 1994), single item measures were applied in several studies.

A very recent discussion regarding the criticism of Sniehotta et al. (2014) against the TPB is provided by the author of the theory himself: Ajzen (2015) is defending his theoretical framework by making clear that

“The theory of planned behavior is alive and well, and not ready to retire” (Ajzen, 2015, p. 131).

In 2014, Sniehotta et al. (2014, p. 1) argued that the TPB was the dominant theoretical approach in the scope of understanding and predicting human behavior for the past three decades and is therefore well recognized amongst researchers but also practitioners, policy makers and students. Based on a recent systematic review of 237 independent prospective investigations (McEachan et al., 2011), Sniehotta et al. (2014) also acknowledged the fact that the TPB accounts for 19.3 % of variability in health behavior with intention as the strongest predictor. On the other hand they also criticized, that experimental tests of the TPB are rare and those who were conducted (e.g. Hardeman et al., 2002) could not support the assumptions of the theory. Based on further criticism addressing concerns about the validity and utility of the TPB as well as the theory’s reticence towards further developments, Sniehotta et al. (2014, p. 1) claimed:

“Time to retire the theory of planned behavior.”

Ajzen (2015) himself has counter-argued all the critics raised by highlighting that the TPB is alive and well and did not lose its value added contribution to multiple different research domains – in the present and for the future. On the contrary, Ajzen (2015, p. 131) retaliated verbally against the criticism as

“Some of their arguments are misguided, resting on a poor understanding of the TPB and of the nature of psychological research, while others are illogical or patently wrong” (Ajzen, 2015, p. 131).

Concretely, within their review, Sniehotta et al. (2014) made multiple assertions against the alleged defects of the TPB. First, (a) the theory is static in nature and is therefore not taking the effects of behavior or cognitions and future behavior into account. Ajzen (2015) pointed out that this assumption might occur due to the normally oversimplified presentation of the TPB as a model. Nevertheless, the actual model contains inter alia also feedback loops from behavior to cognitions. The mechanisms and logic of those feedback loops were carried out by Fishbein and Ajzen (2010, p. 218), highlighting that the end result of one's behavior might change the individual's behavioral, normative, and control beliefs and as a result also have an impact on intentions and actions in the future. As an additional note, feedback loops were already explicitly shown in the presentation of the TRA (Fischbein & Ajzen, 1975, p. 16).

Second, (b) the main focus of criticism stated that the TPB just provides very limited predictive validity and hence is not explaining sufficient variability in behavior (Sniehotta et al., 2014, pp. 2–3). Ajzen (2015, pp. 131–132) responded to this allegation that the main strength of the TPB lies in predicting intentions from its antecedents (attitude, subjective norms, PBC) which could be confirmed by numerous applications. However, he also acknowledged that the prediction of intention is also accompanied by potential problems as the theory does not entirely consider the variance of intentions (for a detailed discussion, see Fishbein & Ajzen, 2010, pp. 53–63). Due to this imperfect validity, reliabilities rarely go beyond .80, even measures are constructed carefully (Ajzen, 2015, p. 132). In scholars it can be observed that in a typical application of the TPB, the main constructs of the TPB are just measured by a little number of items. This fact impairs the validity of the measures applied as such a low number of items is not able to capture the underlying construct of the TPB. In contrary, studies adding more variables to the model showed a higher level of predictive power of intentions.

The interpretation of these observations lead normally to diminishing of the sufficiency assumption of the theory which is indirectly linked to the third assertion (c) of Sniehotta et al. (2014, p. 3):

“Some of the theory’s propositions are patently false”.

Ajzen (2015, p. 132) retorted that the TPB can be adjusted by adding new predictors as for example the former TRA was extended by adding the predictor of PBC. Adding well justified and reasonable predictors can therefore increase the prediction of intention by contributing meaningful variance. Ajzen (2015, p. 132) argued that the predictive power of intentions can be significantly increased if both, attitudes towards performing a behavior as well as attitudes towards not performing the behavior are included (Ajzen & Sheikh, 2013; Gardner & Abraham, 2010). The improved predictive validity was caused by the difference in behavioral focus and not due to the affect as such at all. Hence, the flaw of the constructs of the TPB to entirely mediate the effects of other variables on intentions and behavior might result from the imperfection of the measures applied Ajzen (2015, p. 132).

The last criticism of the TPB presented in this context by Sniehotta et al. (2014) was linked to (d) the ostensible failure that the theory does not provide an sufficient foundation for behavior change interventions. Ajzen (2015, p. 133) highlighted that the TPB is in fact not a theory of behavior change and its focus is on explaining and predicting the behavior of individuals. In addition, changing intentions and behavior is not an easy task. Nonetheless, the TPB can be also considered as a beneficial framework helping to derive and to design potential behavior change interventions (Ajzen, 2011). In general, the TPB is distinguishing between motivating individuals who do not tend to perform a desired behavior and enabling individuals who are willing to act on the positive intentions existing. Referring to the first point, the methodology of the TPB allows to identify beliefs that need to be modified to generate a certain change in intentions and therefore resulting in the behavior of interest. At that point it should be clarified that the theory itself does not provide particular guidance, strategies and techniques in terms of concrete

measures to produce effectively changes in beliefs and therefore in intentions and behaviors as well (Ajzen, 2011; Fishbein & Ajzen, 2010). The underlying idea refers to the suggestion that by successfully changing accessible behavioral, normative and control beliefs, corresponding changes in attitudes, subjective norms as well as perception of control can be expected. Based on the theory's rational, these changes of predictors due to interventions are supposed to result in changes of the intentions as well as the intended actual behavior, especially under volitional control (Ajzen, 2015, pp. 133–134). Consequently, large changes in beliefs are the prerequisite for interventions having a noteworthy effect on intentions. But, to transform these intentions into concrete behavioral performance requisite resources must be provided and potential barriers (e.g. strain) must be cleared away (Ajzen, 2015, p. 134).

To summarize, the TRA and TPB have next to multiple strengths also flaws which were criticized by multiple researchers in a rather constructive but also destructive manner (see Sniehotta et al., 2014). Several alternative models were discussed in the literature to replace the TPB with a broader theoretical approach, partially following the TPB's reasoned action approach. However, no concrete evidence was provided that these alternatives (a) are less static in nature, (b) account for more variance in behavior, (c) are more sufficient as other potential predictors do not account for additional variance in behavior and (d) create more change in behavior based on their interventions derived than the interventions based on the TPB. Consequently, the TPB can be considered as alive and has not lost its high relevance and robustness in predicting human behavior and therefore providing a better understanding of human behavior at all (Ajzen, 2015, p. 136).

The application of the TPB in the context of voice and silence

Literature – either conceptual or empirical – applying the three-pronged approach of Ajzen (1991) in order to examine the mechanisms of the phenomenon of voice and silence is very scarce and almost not existent. Referring to the context of

voice, Liang et al. published a study in 2012, demonstrating how three psychological antecedents such as psychological safety, felt obligation for constructive change as well as organization-based self-esteem predict promotive and prohibitive forms of voice behavior (Liang, Farh et al., 2012). Highlighting the two-dimensionality of voice perception that is associated with speaking up (gaining personal benefits versus taking risks), the researchers argued that engaging in voice behavior is only performed after cognitively calculating costs and benefits of doing so (Kish-Gephart et al., 2009; Liang, Farh et al., 2012; Milliken et al., 2003). Based on this line of argumentation, voice behavior can be understood as an intentional but particularly “planned behavior”. Since the TPB reached considerable empirical support especially in the domains of organizational psychology and organizational behavior (see the meta-analysis of Armitage & Conner, 2001) the authors emphasized that this theoretical framework can help understanding how these multiple psychological antecedents may lead to the enactment of planned behaviors (promotive and prohibitive voice) (Ajzen, 1991). In addition, Liang, Farh et al. (2012) drew on the rationale of the TPB to theorize that the voice of employees can be jointly explained, understood and predicted by the three psychological factors mentioned (Liang, Farh et al., 2012, p. 73). The application of a two-wave panel design revealed that felt obligation had the strongest impact on promotive voice, whereas psychological safety was most strongly related to prohibitive voice behavior. In addition, organization-based self-esteem was mutually related to promotive voice behavior. The results of this empirical examination supported the rationale of the TPB when it comes to explaining and predicting human behavior. In line with the framework of Ajzen (1991), all three psychological factors showed to be positively related to both promotive and prohibitive voice behavior as proposed in the hypothesis derivation (Liang, Farh et al., 2012, pp. 82–83). Drawing on future theoretical implications, research should choose a more direct measure of PBC (instead or in addition of organization-based self-esteem) to capture the control concept of the theory more effectively (Liang, Farh et al., 2012, p. 88). Neverthe-

less, the TPB proved once more to be a helpful theoretical framework for understanding and predicting human behavior, also in the context of voice behavior.

Within the scope of the literature review conducted, just one single empirical study was elicited that applies the TPB in the silence context. Neuwirth and Frederick (2004) conducted a study using the TPB and the theoretical concept of the *spiral of silence* (Noelle-Neumann, 1974) to examine the role of peer and social influences on the individual's willingness to speak up, prevailing norms about drinking behavior. It is important to mention, that the study was thereby conducted in the field of communication research, less in the area of organizational psychology and behavior. In alignment with the study of Liang, Farh et al. (2012), also Neuwirth and Frederick (2004) emphasized that the TPB is particularly applicable and creates an explanatory value in situations when individuals are facing risky situations as a decisive decision making process is upstream to the actual behavior. Like the TPB, the theory of *spiral of silence* (Noelle-Neumann, 1974) also focuses on normative beliefs. The theory purports that individuals tend to remain silent or moderate their speech in situations in which they do not perceive support for their own opinion but are rather afraid taking the risk of being isolated by expressing views against the majority opinion (Neuwirth & Frederick, 2004, p. 669). Hence, both theories share common elements, but bear different variables as antecedents of a certain behavior in high-risk situations. Based on an anonymous survey among university students (n = 397), their responses to three social settings involving aspects of drinking behaviors were investigated (Neuwirth & Frederick, 2004, p. 678). Referring to the application of the TPB, endogenous variables such as (a) the attitude toward behavior or own opinion, (b) subjective norms as well as (c) perceived behavioral control were defined and operationalized in the study context (Neuwirth & Frederick, 2004, pp. 678–681). Analyzing the data by using hierarchical regression analyses, the findings of the study confirmed the propositions about peer influences derived from the TPB. In addition, the results regarding the subjective norm and PBC were also entirely consistent with the TPB (Neuwirth & Frederick,

2004, pp. 689–690). Even in situations characterized by high risk, the TPB underlined its robustness, high added value contribution and applicability in explaining but also predicting human behavior (remaining silent or speaking up) in a non-organizational context.

Avenues and implications for further research

Literature dealing with the TPB is suggesting certain avenues for future research and demonstrates potential future directions. In this context, however, it must be mentioned that future research topic threads are widely ramified and granular. For this reason, the following section will highlight only selected relevant implications for the further development of the TPB.

Predicting human behavior is one of the key facets of the TPB, especially when demands of *compatibility* are fulfilled. The compatibility principle suggests that strong correlations between attitude and behavior can only be expected if involved actions, the target at which they are directed and context as well as time of the performance are compatible (Ajzen & Fishbein, 2005; Kaiser et al., 2007). However, according to Ajzen (1988, p. 46) the actions of individuals on specific occasions are opposed to what actually is of interest, namely: regularities in behavior, response tendencies and consistent patterns of action. Therefore, the abstraction level of attitudinal and behavioral measures must be very close. That is,

“Specificity or generality with respect to the addressed behavior, its performance goal, and when the act is expected to occur” (Kaiser et al., 2007, p. 1526).

Kaiser et al. (2007, p. 1526) further stated that due to this measurement paradigm, the indicated strong correlations between attitude and behavior – operationalized by their items – could be just artificial, but not substantial. Additionally, other researchers such as Trope and Liberman (2000) suggested that individual’s depiction of a certain behavior is partly depending on the temporal distance from the behav-

ioral exertion and therefore may vary in more abstract terms if experienced at greater temporal distance (Conner & Norman, 2005, pp. 211–212). Hence, it is still unclear whether these variations in constructs are closely linked to the belief salience.

Over the past decades, scholars were largely addressing the role of *moderator variables* within the TPB, especially those impacting the magnitude of relationships between the TPB elements (Conner & Norman, 2005, p. 212). Identifying these particular moderators allows to understand the conditions under which the relationship between the variables of the TPB are getting maximized. A significant body of moderator variables were reviewed by Cooke and Sheeran (2004) and can accordingly be subdivided into two sections: (a) *additional variables* (e.g. anticipated regret, moral norms, past behavior) and (b) *properties of components* (e.g. accessibility, direct experience, involvement, certainty, ambivalence, affective-cognitive consistency, temporal stability).

Referring to the first section (a), studies showed that for instance anticipated regret is moderating the intention-behavior relationships in a way that high levels of regret increase and strengthen the level of intention as not performing the actual intended behavior is associated with aversive affect (Sheeran & Orbell, 1999). Multiple studies also reported similar effects in relation to various domains such as exercising (Sheeran & Abraham, 2003), smoking initiations (Conner & Norman, 2005) or on exercise intention-behavior relationships (Sheeran & Abraham, 2003) – in the latter case, showing moderation effects even by manipulating regret. Furthermore, additional variables such as moral norms (see Godin et al., 2005) and past behavior (see Norman et al., 2000) were also proven to be significantly strong predictors of human behavior. The focus of research with regards to (b) the properties of components was on intentions and attitudes (Conner & Norman, 2005, p. 213). In this context, Cooke and Sheeran (2004) examined within their meta-analysis the accessibility, direct experience, certainty, ambivalence and affective-cognitive consistency which all moderated attitude-behavior relationships. In com-

parison, ambivalence, certainty, and involvement moderated the attitude-intention. All properties outlined, including certainty, significantly moderated the intention-behavior relationship as well (Conner & Norman, 2005, p. 213). Moreover, based on the review of Cooke and Sheeran (2004) temporal stability as the strongest moderator seemed to be especially important. In this respect, Ajzen (1996) stated

“To obtain accurate prediction of behavior, intentions (...) must remain reasonably stable over time until the behavior is performed”
(Ajzen, 1996, p. 389).

As intentions may change due to new information or occurring obstacles, the moderating role of temporal stability became quite popular and was examined in several studies (see Conner et al., 2000; Conner et al., 2002; Conner et al., 2006). Results showed that intentions are in general stronger predictors of behavior when intentions are stable. Hence, the topic of *intention stability* became an emergent property of an individual's intention. Therefore, further research should investigate more directly modifiable aspects of intentions such as prioritizing one particular goal or intention over other competing goals or intentions (Conner & Norman, 2005, p. 213)

Within their review, Conner and Armitage (1998, p. 1452) emphasized the not worth discussing usefulness of the TPB what undoubtedly accounts for the popularity of the theory. In this context, the researchers suggested areas in which the TPB could be extended, including focusing on possible additional variables (e.g. past behavior, structure of the PBC construct, moral norms, self-identify, and affective beliefs). There will be a need for research to provide empirical evidence to include these variables into the actual TPB model as well as further information how these additional variables might be interlinked to the other constructs of the TPB, intentions and behavior. As the incorporation of all these variables might cause an unwieldy theory, they recommended:

“Rather, depending on the nature of the behavior and the purpose of the study, different combinations of variables might be examined” (Conner & Armitage, 1998, p. 1452).

In addition, they claimed to extend the TPB in two further ways. First, to incorporate the TPB into a dual-process model of attitude-behavior relationships as the TPB just provides sufficient information regarding the determinants of behavior when motivation as well as opportunity to process information are high. If not, the influence of attitudes might appear in a more spontaneous fashion. Therefore, the researchers voted for a dual-process model that describes the interaction between attitudes and behaviors taking both into account, the deliberative process as well as the attitude-to-behavior models by Fazio (1986), describing the automatic process. This would open up new avenues for research such as the determination of the most dominant process or the mutual determination of both processes (Conner & Armitage, 1998, p. 1453). Second, the expansion of the TPB would also allow to not only understand the relationship between intentions and behavior but also to gain more insights how attitudes have an influence on goal achievement. In this context, the concept of implementation of intentions by Gollwitzer (1993) could be relevant to understand how goal intentions are translated into actions as well as goal achievement (Conner & Armitage, 1998, p. 1453).

Lastly, taking the comment of Fishbein (1997) into consideration that the TPB can also be understood as a useful model for deriving effective interventions to perform changes in behavior as the TPB is describing causal processes. Within the past years, multiple research studies were published (e.g. Ajzen, 2011; Fishbein & Ajzen, 2010) but mostly relying on correlational data and using self-reported measures. More recent studies such as the meta-analysis of Steinmetz et al. (2016) aimed at investigating the effectiveness of behavior change interventions based on the TPB. Nevertheless, as already mentioned, critics regarding the sufficiency of the TPB to allow deriving concrete and effective behavior change intervention is still prevailing and under discussion (e.g. Ajzen, 2015; Sniehotta et al., 2014).

To summarize, further research investigating the causal relationships among the constructs of the TPB as well as the extensions suggested is required (Conner & Armitage, 1998, p. 1453).

III.4 Combining JD-R and TPB

To date, multiple theoretical concepts such as the MUM effect, spiral of silence, or issue selling have been brought up in the research context of voice and silence. These concepts are trying to explain the underlying mechanisms and functioning of this very particular behavior (see chapter I.3). However, the empirical research field of organizational and employee silence is still rather scarce and could gain further relevance in management science by integrating a much stronger fundamental theoretical approach contributing to the explanation of the complex underlying behavioral patterns. Consequently, to provide a more concrete understanding and prediction of the silence behavior's antecedents and effects, the inclusion of multiple perspectives can be a beneficial and promising approach. As outlined by Okhuysen and Bonardi (2011), the combination of multiple theoretical lenses represents an option to help exploring real-life problems as well as rather unexplained phenomena by putting different perspectives together. These multiple-lens perspectives can also provide a more holistic understanding of certain research phenomena by creating an innovative stage for conducting novel empirical investigations from more diverse angles. In doing so, existing knowledge silos within and across disciplines can be bridged and value can be added.

Following Okhuysen and Bonardi (2011), the compatibility sufficiency of different theories and the subsequent blending process can be evaluated and designed according to both dimensions proposed in chapter III.1: (a) *theoretical proximity* and (b) *degree of compatibility*. Therefore, the following section aims at thoroughly analyzing both thematized theories, the Job-Demands Resource Theory (JD-R) and Theory of Planned Behavior (TPB), regarding their specific compatibility schemes. First, the aim and focus of each theory will be recapitulated shortly. This

sets the foundation for step two: the independent analysis of both theories according to (a) the phenomena the theory is addressing in their original conception and (b) the theory's underlying assumptions. As a last step, both theories will be brought together and the possibility of combinatorial fit along both dimensions will be discussed. This also includes highlighting the potential added-value created as well as the contribution to the overall research purpose, including the creation of new insights by deriving hypotheses for the empirical investigations from the overall research framework based on the two blended theories.

Job Demands-Resources (JD-R) model: examination of phenomenon of interest and underlying assumptions

As an integrative approach, the JD-R as a theoretical model aims at explaining the complex interrelations between job demands and strain as well as job resources and motivation in the work context. By integrating both concepts, the stress research and motivation research helps answering two central questions: (1) what precisely triggers job stress and (2) what motivates people within their occupation. Explaining human reactions through the guidance of these two questions is receiving more and more attention as the work environment becomes increasingly complex. Multiple (i.a. empirical) studies have supported the functioning of the dual pathways in various situations – irrespective of the specific demands and resources involved – and therefore have shown the theory's high level of explanatory value and predictive capability of important organizational or individual outcomes (Bakker et al., 2004; Bakker et al., 2007; Bakker et al., 2008; Demerouti, Bakker, et al., 2001; Doi, 2005; Halbesleben & Buckley, 2004; Salanova et al., 2005; Taris & Feij, 2004).

Referring to the first dimension stated by Okhuysen and Bonardi (2011), the *proximity* of the theoretical lenses focuses on the phenomenon the theory is addressing in its original conception. The JD-R as heuristic in nature is primarily concerned with explaining how and why individuals display a certain behavior or attitude

(e.g. employee health, well-being, motivation, engagement) and in which particular situation. (Schaufeli & Taris, 2014). The particular outcome of this development process itself results from the balance between positive resources and negative demands in the occupational context. Regarding the focus depth of the JD-R's theoretical lens and its scope, the JD-R is much broader than other models as it allows to integrate potentially different job demands and job resources. This also applies to the type of behavior or attitude to be investigated. As a result, due to its characteristics, the JD-R gains flexibility (e.g. for the intended research design) and can hence be tailored to a wide variety of work settings. The heuristic use of the JD-R, its broad scope, high level of flexibility and consequently wider focus depth accounts for its attractiveness to scholars as well as practitioners (Schaufeli & Taris, 2014).

The second dimension *degree of compatibility* addresses the underlying assumptions of the lenses combined (Okhuysen & Bonardi, 2011). In this context, assumptions are for instance operationalized as individual decision-making processes, organizational mechanisms, or the development of behavioral reactions or attitudes. The JD-R theory lies on assumptions stressing the fact that high job demands (e.g. work overload, emotional demands, physical demands) lead to strain and health impairment (health impairment process), and that job resources (e.g. autonomy, feedback, leadership) lead to increased motivation and higher productivity (motivational process). In different words, the predicted outcome (e.g. well-being, burnout, strain) of the dual pathways – as for instance the individual's behavior in form of work engagement – is highly influenced by the experienced strain or motivation in the occupational context – both triggered by the specific manifestation of job demands and job resources. Further assumptions propose that there are also interrelations between job demands and job resources, which act as a kind of buffer. For example, some job resources are capable of buffering the impact of some job demands on certain undesired results. In summary, the JD-R theory's assumptions deal with the question of what triggers a certain behavior or atti-

tude of an individual, and by which unique and multiplicative effects of job demands and resources they are mainly influenced through job stress and job motivation.

Theory of Planned Behavior (TPB): examination of phenomenon of interest and underlying assumptions

The TPB as an extension of the TRA focuses on understanding, explaining and predicting human behavior from multiple different angles and with respect to its inherent complexity by linking one's belief and behavior (Ajzen, 1991). In general, the theory states that the model's key elements (attitude, subjective norms and PBC) together shape the intentions of the individual and subsequently their actual behavior. In response to the lack of predictability of the TRA, the TPB has integrated the element of *perceived behavioral control* (PBC) which contributes to explaining and predicting the behaviors under demanding goals and behaviors that require the performance of a complex series of other behaviors that might occur under incomplete volitional control (Conner & Norman, 2005, p. 171). All three core elements as antecedents of intention also have their own determinants, which are called *beliefs*, as direct or indirect measures (Ajzen, 1980; Conner & Norman, 2005). Nevertheless, the likelihood of an intention, determined by an attitude, being translated into actual behavior is highly depending on the principle of compatibility. In overall, multiple scholars have shown the TPB's high level of robustness and explanatory value (Armitage & Conner, 2001; Hausenblas & Carron, 1997; Kim & Hunter, 1993; Sheppard et al., 1988).

Following Okhuysen and Bonardi (2011) and accordingly analyzing the proximity of the TPB's theoretical lens, the theory mainly deals with the questions of how, why and under which conditions individuals are generally showing a certain behavior. In more details, the theory aims at scrutinizing the causal patterns (antecedents) and mechanisms shaping the behavior as well as the conditions necessary to actually perform the behavior in question. The central behavior investigated in

the heart of the theory is resulting from a complex relationship among its antecedents. On the one hand, behavioral intentions are impacting the behavior, but are in turn determined by attitudes, subjective norms and PBC. These three elements are built on direct or indirect measures of their own: salient behavioral beliefs, normative beliefs, and control belief. Due to the broad scope of the theory and its application flexibility, the TPB has been widely and successfully used in various domains (e.g. management science, psychology, sociology) and different fields (healthcare, sport management, advertisement). As a result, the TPB can be considered to have a wide focus depth regarding the theoretical lens as the model allows to investigate any volitional behavior that is associated with intentions to engage in that specific behavior. The theory's capability to create an explanatory contribution in terms of explaining and predicting human behavior is the reason why the TPB is still being applied so often and also supports the statement of Ajzen (2015): "The TPB is alive and well, and not ready to retire".

Within the next section, the second dimension provided by Okhuysen and Bonardi (2011) addressing the *underlying assumptions* of the TPB will be outlined. The theory assumes that the individual's performance of a (desired) behavior is not a product of certain coincidence, but rather the result of a complex process of interactions that precede the actual behavior. Intention intermediating between the attitude, subjective norms, PBC as well as the behavior is a very central factor in the model as it captures motivational factors, which in turn impact the behavior (Ajzen, 1991, p. 181). As individuals find themselves in different situations in which their behavior might be under volitional or non-volitional control, they can perform their desired behavior only under certain circumstances or associated with difficulties. In particular, non-motivational factors (e.g. skills, time, money, cooperation of others), the requisite of opportunities and resources, or personal and environmental factors play a very crucial role (Ajzen, 1985, 1991; Conner & Norman, 2005). The evaluation of each situation – as a determining factor of the individuals' intention – is highly depending on the attitude of the individual, the

subjective norms as well as the perceived behavioral control. In this regard, a more positive evaluation of these three determinants will increase the level of intention and the likelihood that the individual will perform the behavior intended. The evaluation is highly dependent on the salient behavioral beliefs, normative beliefs, and control beliefs. In summary, the TPB describe the evolution of the individual's behavior as a result of the interplay of antecedents based on certain beliefs.

Combinatorial fit of the Job Demands-Resources (JD-R) model and the Theory of Planned Behavior (TPB)

The following section addresses the combinatorial fit of the JD-R model and the TPB following the dimensions of relevance proposed by Okhuysen and Bonardi (2011). First, the *proximity* of the phenomenon of interest as well as the *compatibility* of underlying assumptions will be discussed. Second, the question whether both theories are in competition with each other will be tackled. Indeed, the integration of theories is a central element of the overall approach and the phenomenon's deeper understanding relies on the dissolution of the theories' inconsistencies. Finally, a possible link between the JD-R model and TPB is outlined argumentatively. Following this reasoning, an overarching conceptual framework is built and visualized by integrating the logics of both theories. The section closes with a summary.

Referring to the detailed description of the phenomena described above, the JD-R model as well as TPB focus within their original conception primarily on understanding, explaining, and predicting human behavior. In addition, both theories aim at explaining the root causes of how certain behaviors get triggered and through which preceding development processes they turn into concrete action. Within their theoretical development process, the JD-R model and TPB revealed a set of interrelated determinants impacting their outcomes and have taken into consideration all their models' inherent complexity. Due to their structure and based on multiple applications in empirical research, both theories can be described as

rather broad in their scope and hence offer a high level of flexibility in terms of operationalization, measurement, and application in research contexts. Multiple examples of both theories' flexibility have been already stated within the theoretical section (see chapter III.2 and III.3). Based on this, it can be argued that the JD-R model and TPB show a close proximity of theoretical lenses as they share the same phenomena of interest, specifically: understanding, explaining, and predicting human behavior.

In contrast to the *close proximity* of theoretical lenses, both theories indicate a rather *low compatibility* of underlying assumptions. This can be attributed to the JD-R's and TPB's different theoretical perspective on their scope of analysis, processes, and fundamental mechanisms. Compared to the TPB, the JD-R model aims at explaining the evolvement and shaping of a certain type of performance (e.g. job performance) depending on resources and demands prevailing. The assumptions indicate that by changing the conditions given (existence and characteristics of job resources and job demands) motivation and strain as antecedents of the actual performance are being influenced. It is important to state at this point, that the JD-R model integrates within its theoretical framework a stated but also limited set of factors predicting a certain outcome through its indicated causal mechanisms. Consequently, the mere presence of job resources and job demands and their impact on motivation and strain does not necessarily have to be sufficient enough to trigger an actual act of behavior. This means, that the manifestation of the upstream factors in the JD-R model may be just powerful enough for creating a certain attitude and does not result directly in concrete behavior. Following this line of argumentation, depending on the qualitative and quantitative loading of the JD-R's dual pathways (motivation and strain), the outcome can be based on a wide range of results of multiple kind. In this regard, and due to its adaptability and broad scope, the JD-R model allows for flexible definition suiting the specific research context and design of empirical analysis. Therefore, the outcome variable can be on the one hand a concrete resulting behavior, but on the other hand rather a

kind of precursor or determinant of the behavior itself – such as an attitude. In contrast to the JD-R model, the underlying assumptions of the TPB indicate that actual behavior is formed by intentions which in turn are shaped by the individual's attitude towards the behavior, subjective norms and PBC. All these three factors are determined by salient behavioral, normative and control beliefs and their particular evaluations.

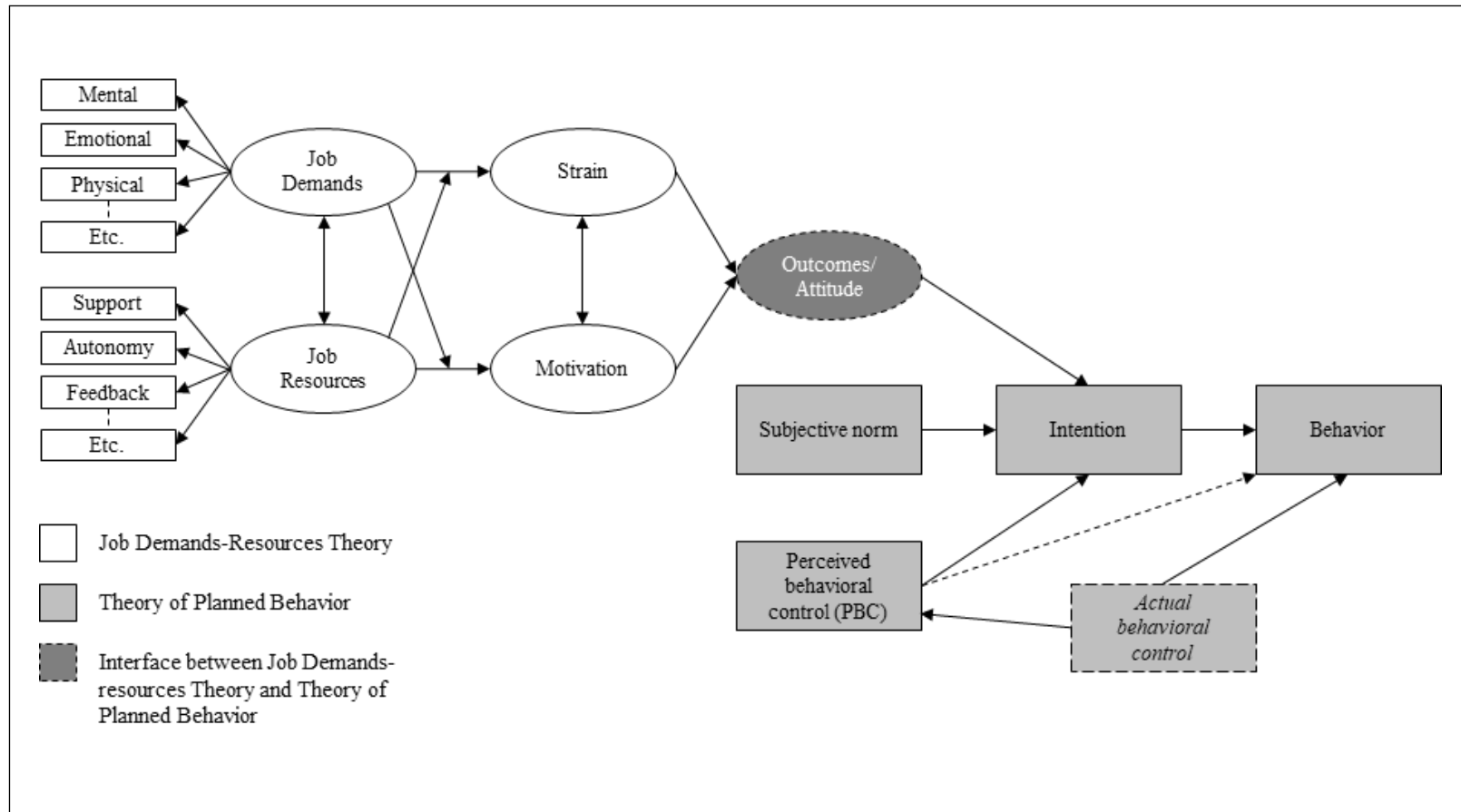
According to Okhuysen and Bonardi (2011, p. 9), the blending process of theories is on one hand associated with certain challenges but can provide on the other hand a substantial added value, if theoretical perspectives can be bridged in a way that it creates a coherent explanation of the phenomenon evaluated. However, connecting two theories is linked to certain difficulties and challenges. As an example, it might be the case that both theoretical perspectives are addressing a specific question and therefore may be in competition as they were developed independently and isolated from each other. With regards to the JD-R model and TPB as well as their analytical perspective, processes, and fundamental theoretical mechanisms, it can be stated that both theories are not in competition with each other, although the JD-R model and TPB are addressing a quite similar question and phenomena. Actually, the exact opposite is the case, as the JD-R model can help explaining the evolvment and evaluation of the behavioral attitude as a conceptual factor of the TPB. According to the TPB and the underlying expectancy-value-model by Peak (1955), the development of attitudes is highly depending on the individual's beliefs about the object of the attitude. Referring to the TPB, attitudes develop reasonably from the beliefs individuals hold about the object of the attitude (Fischbein & Ajzen, 1975). Since beliefs connect the behavior of the individual to a certain outcome (Ajzen, 1991), the attitude development towards a specific behavior does not only depend on the perceived likelihood that the behavioral performance is generally feasible and will lead to the desired outcome, but is also pending on the evaluation of the upstream beliefs themselves. The evaluation of beliefs and therefore

the shaping of the attitude is strongly linked to the access and availability of certain resources required and risks associated (Ajzen, 1991).

At this certain point, connecting the inherent logic of the JD-R model to that of the TPB can generate high added and explanatory value. As shown in Figure III-8 and based on the argumentation in the section above, the construct of attitude as a core element of the TPB model can be operationalized as the outcome variable of the JD-R theory. Consequently, behavioral beliefs shaping the attitude positively or negatively are influenced by demands and resources associated with performing the actual behavior. On one side, providing the right quality and quantity of required (internal and external) resources lead to higher motivation and increase the likelihood of transforming these beliefs into a positive attitude towards the behavior. On the other side, facing high levels of demands and not sufficient enough resources might result in strain and therefore decrease the likelihood of performing the behavior due to its negative attitude towards the behavior.

By making this connection, the JD-R model can help to explain and to predict the manifestation of the attitude as a key element of the TPB, which in turn influences the intention of actually performing a behavior. Within this blended model, the TPB on the other side contributes to the understanding of how the JD-R model's outcome variable (any type of performance) is shaped and in conclusion transforms into concrete behavior, mediated by intentions that are again impacted by subjective norms and PBC. In overall, the blending process of both theoretical lenses allows to broaden the explanatory power of both individual theories. Instead of being in competition, as the JD-R model and TPB are addressing a similar phenomenon, value-adding bridges between both theories can be crafted by linking them through the element of "attitude" (see Figure III-8)

Fig. III-8: Combining the Job Demands-Resources (JD-R) model and the Theory of Planned Behavior (TPB)



Source: own creation

III.5 Deduction of Hypotheses and Theoretical Contribution

In the following chapter, the hypotheses of the study are derived based on (1) the combination of the Job Demands-Resources (JD-R) model and on the Theory of Planned Behavior (TPB) as well as (2) on intensive factual logical considerations. Both theoretical models are integrated into a structure equation model (SEM), which represents the overall quantitative research model (see Figure III-9) of this dissertation. Therefore, the SEM provides the basis for the theoretically hypothesized relationships between the variables tested. Furthermore, the explicit hypotheses of this study are also established on the basis of the extensive literature review conducted (see chapter I) and hence follow required intensive factual logical considerations (Backhaus et al., 2006, p. 358). The SEM, its corresponding measures of (in-)dependent variables and the analytical procedures will be discussed in the subsequent chapter IV (empirical investigation). In addition to the overall SEM, further analyses on acquiescent and quiescent silence were performed since both sub-types of silence have shown to be more relevant than prosocial and opportunistic silence (Knoll & Dick, 2013; Milliken et al., 2003). Therefore, this chapter also outlines the associated hypothesis regarding acquiescent and quiescent silence (Figure III-10 and III-11).

Deduction of hypotheses

With respect to the overall SEM, 13 hypotheses corresponding to the nine paths in the overall research model are explicitly indicated, as outlined in Figure III-9. The first six hypotheses (H1a, H1b, H2a, H2b, H3a, H3b) follow the premise of the JD-R model as demands and resources trigger two different underlying psychological processes with regards to the development on job strain and motivation (Bakker & Demerouti, 2007, 2014; Demerouti & Bakker, 2011). Consequently, hypotheses H1a, H1b, H2a, and H2b focus on the health impairment process (job demands and strain) and therefore investigate the relationship between collaboration requirements/opportunities and employees' job satisfaction and work engagement. Espe-

cially in strenuous organizational transformation processes, high demands on collaborative behavior in and across teams can lead to work overload or emotional demands which are considered as triggers for the exhaustion of employees' mental and physical resources (depletion of energy), psychosomatic health complaints (burnout), or dissatisfaction (e.g. Bakker et al., 2000; Bakker, Demerouti, & Schaufeli, 2003; Demerouti, Bakker, et al., 2001; Demerouti, Nachreiner, et al., 2001; Hakanen et al., 2006; Leiter, 1993). However, research has also shown the negative impact of low levels or even the nonexistence of collaboration opportunities on employees' job satisfaction and work engagement, especially in high demanding working environments (Aldeeb & El-Demerdash, 2016; Bakker, 2010; Balouch & Hassan, 2014; Galletta et al., 2016). Based on this, the following hypotheses are stated:

H1a: Collaboration opportunities (3) positively relate to job satisfaction.

H1b: Collaboration opportunities (3) positively relate to work engagement.

H2a: Collaboration opportunities (2) positively relate to job satisfaction

H2b: Collaboration opportunities (2) positively relate to work engagement

The next two hypotheses (H3a and H3b) deal with the relationship between authentic leadership, work engagement and job satisfaction. The derivation of those relationship follows the motivational process of the JD-R model (Bakker, 2011). Compared to job demands, job resources inherent a motivation potential and are considered as the most important antecedents of high work engagement, well-being, high work enjoyment, low cynicism, and high levels of performance (Bakker, 2011; Bakker & Demerouti, 2007, 2014). Consequently, job resources, operationalized as autonomy, performance feedback, and (social) support from leaders, foster the employees' job-related learning and development as well as organizational commitment and work engagement (Demerouti, Nachreiner, et al., 2001; Hakanen et al., 2005; Hakanen et al., 2006; Salanova et al., 2005; Taris & Feij, 2004). Scholars have provided a comprehensive catalogue of potential ante-

cedents of employees' well-being and work engagement. However, theoretical contribution with respect to contemporary job challenges arising from e.g. organizational change processes triggered by disruptive business model transformation is rather scarce (Bakker & Demerouti, 2007, p. 309). In this regard and following A. Hassan and Ahmed (2011) and Alok and Israel (2012), it is argued that authentic leadership positively relates to employees' work engagement and job satisfaction. Especially in transformation processes that are characterized by high levels of uncertainty and complexity, authentic leaders with a high degree of integrity, deep sense of purpose, and commitment to their core values, promote a trusting relationship to their subordinates resulting in higher work engagement and job satisfaction (A. Hassan & Ahmed, 2011, p. 164). These leadership characteristics also help developing certain personal resources of employees, mutually affecting job resources and work engagement over time (Xanthopoulou et al., 2009). Therefore, the following hypotheses are stated:

H3a: Authentic leadership positively relates to job satisfaction.

H3b: Authentic leadership positively relates to work engagement.

In that context, it is also argued that authentic leadership positively impacts job satisfaction and in turn, decreases the level of job dissatisfaction due to high demands resulting from collaboration requirements within the change process (H3a). This is also in alignment with Bakker and Demerouti (2014) as certain resources (e.g. leadership support) can have an impact on strain as a buffering strategy. Therefore, job demands and resources initiate not just two different processes but also have joint effects (Bakker & Demerouti, 2014). Hakanen et al. (2005) supported the observation of the "coping hypothesis" (Bakker et al., 2005; Bakker et al., 2007; Bakker et al., 2010) as job resources affect motivation or work engagement, especially in cases when job demands are high. In this context, the proposition of the buffering effect and coping hypothesis is also tested empirically through H1b and H2b.

With respect to the combination of the JD-R model and the TPB, it is also empirically tested whether perceived behavior control (PBC), operationalized as empowerment, influences the dual processes of the JD-R model with regards to job satisfaction and work engagement. Scholars have shown that empowerment leads to increased job satisfaction (e.g. Ugboro & Obeng, 2000) and work engagement (Bakker, 2010). The dissertation's research model also suggests that empowerment buffers employees' strain (job dissatisfaction) and motivation (work engagement) along the JD-R model. From a theoretical perspective, the relevance and impact of perceived behavioral control (PBC) as part of the TPB on the dual pathways of the JD-R model has not yet been tested empirically. Hence, the following hypotheses are stated:

H4a: Empowerment positively relates to job satisfaction.

H4b: Empowerment positively relates to work engagement.

The next two hypotheses (H5 and H6) deal with the relationship of job satisfaction and work engagement to employee silence. Those hypotheses are again build upon the dual pathways of the JD-R model which suggests that strain (job dissatisfaction) and motivation (work engagement) lead to certain outcomes or employee's attitudes (Bakker et al., 2007). As already outlined before, silence is more than just the absence of voice (e.g Tannen, 1985) and therefore antecedents and effects of speaking up (or not speaking up) behavior should not be transferred equally to the issue of silence. Nevertheless, research from voice behavior can be helpful in investigating potential causes and effects with regards to silence behavior. Research drawing on organizational justice has shown that employees perceived more job satisfaction when offered opportunities to express their voices (Thibaut & Walker, 1975). Consequently, employees lacking the option of speaking up might result in dissatisfaction (Avery & Quiñones, 2002). In this context, however, it should be noted that the underlying motives for remaining silent differ from speaking up behavior (van Dyne et al., 2003). Hence, the following hypothesis is derived:

H5: Job satisfaction negatively relates to employee silence.

In contrast to H5, H6 focuses on the relationship between work engagement as an extra-role behavior and employee silence. It reflects a job-related state in which “high levels of energy and high levels of involvement in work” prevail (Bakker, 2010, p. 22). R. L. Kahn and Byosiere (1992) argue that in such as state, highly engaged employees are more likely to employ and to express themselves on a physical, cognitive, and emotional level. In addition, this state also indicates that employees would go beyond their actual work obligations and therefore show higher tendencies to perform promotive voice behavior (van Dyne et al., 1995). Job engagement is also linked to Hirschman’s (1970) concept of exit, voice, and loyalty as it suggests that, despite unfavorable circumstances, employees with high level of loyalty rather try to change the circumstances given than leaving (exit) the organization (Knoll & Redman, 2016, p. 834). In that context, loyalty due to job engagement means expressing voice to trigger changes. Moreover, employees with high level of work engagement are less likely to engage in resignation (Demerouti et al., 2010), which has been described by van Dyne et al. (2003) as one potential cause for employee silence. To the current knowledge, research on employee silence and work engagement is very limited. Only one relevant study by Knoll and Redman (2016) investigated the effect of job engagement on promotive voice and cooperative silence. The study revealed that job engagement increased promotive voice, but also showed a negative impact on silence behavior. Therefore, the following hypothesis aims at investigating the relationship between work engagement and organizational silence empirically:

H6: Work engagement negatively relates to employee silence.

Drawing on the theory of planned behavior (TPB), the study states that, in addition to attitude (employee silence) and subjective norm (organizational values), perceived behavioral control, operationalized as empowerment, positively relates to innovative performance. The importance of innovative behavior is growing for

companies to remain relevant (Guo et al., 2018). Therefore, multiple studies have examined this particular relationship and could emphasize the importance of empowerment maintaining and fostering innovative behavior (e.g. Chang & Liu, 2008; Fernandez & Moldogaziev, 2013; Knol & van Linge, 2009; Pieterse et al., 2010). Consequently, the following hypothesis is stated:

H7: Empowerment positively relates to innovative performance.

The next hypothesis (H8) investigates the relationship between employee silence and innovative behavior. Following the JD-R and TPB it suggests that employee silence (attitude) has a negative effect on the innovative performance of employees (behavior). The suggestion of Tannen (1985) that silence is more than just the absence of voice indicates that employees do not remain silent because they do not have anything to communicate. It is rather that employees might withhold relevant ideas and refuse to share them with colleagues or their supervisors due to different reasons (e.g. fear or resignation). In a similar vein, Morrison (2014) stated:

“It is not merely a lack of speech, as not speaking can occur for many reasons, including having nothing meaningful to convey” (p. 174).

As being creative and showing innovative behavior go normally beyond the daily work task of employees, according to Milliken et al. (2003, p. 1462), individuals might choose to remain silent due to fear of being labeled negatively (e.g. troublemaker), feelings of futility (e.g. recipient will not be responsive), or concerns about negative impact on others (e.g. upsetting or embarrassing others). In addition, Brinsfield (2013) argues that innovation is reduced when employees engage in high levels of silence. However, based on the literature review conducted, only two studies (one of them considered just as auxiliary paper within this research context) have examined this relationship so far. Guo et al. (2018) analyzed, based on the transactional theory of stress, the relationship between authoritarian leadership, fear, defensive silence, and employee creativity. The researchers argue that especially defensive (quiescent) silence is associated with reduced levels of em-

ployee creative behavior. The study results discovered a negative relationship between authoritarian leadership and creativity which was mediated by employee defensive silence. Moreover, the results of Guo et al. (2018) also showed that both, fear and defensive silence serially mediated the relationship between creativity of employees and authoritarian leadership. However, the direct effect of organizational silence on – not just creativity as one dimension of innovative performance – has not been tested empirically yet. Therefore, the hypothesis states:

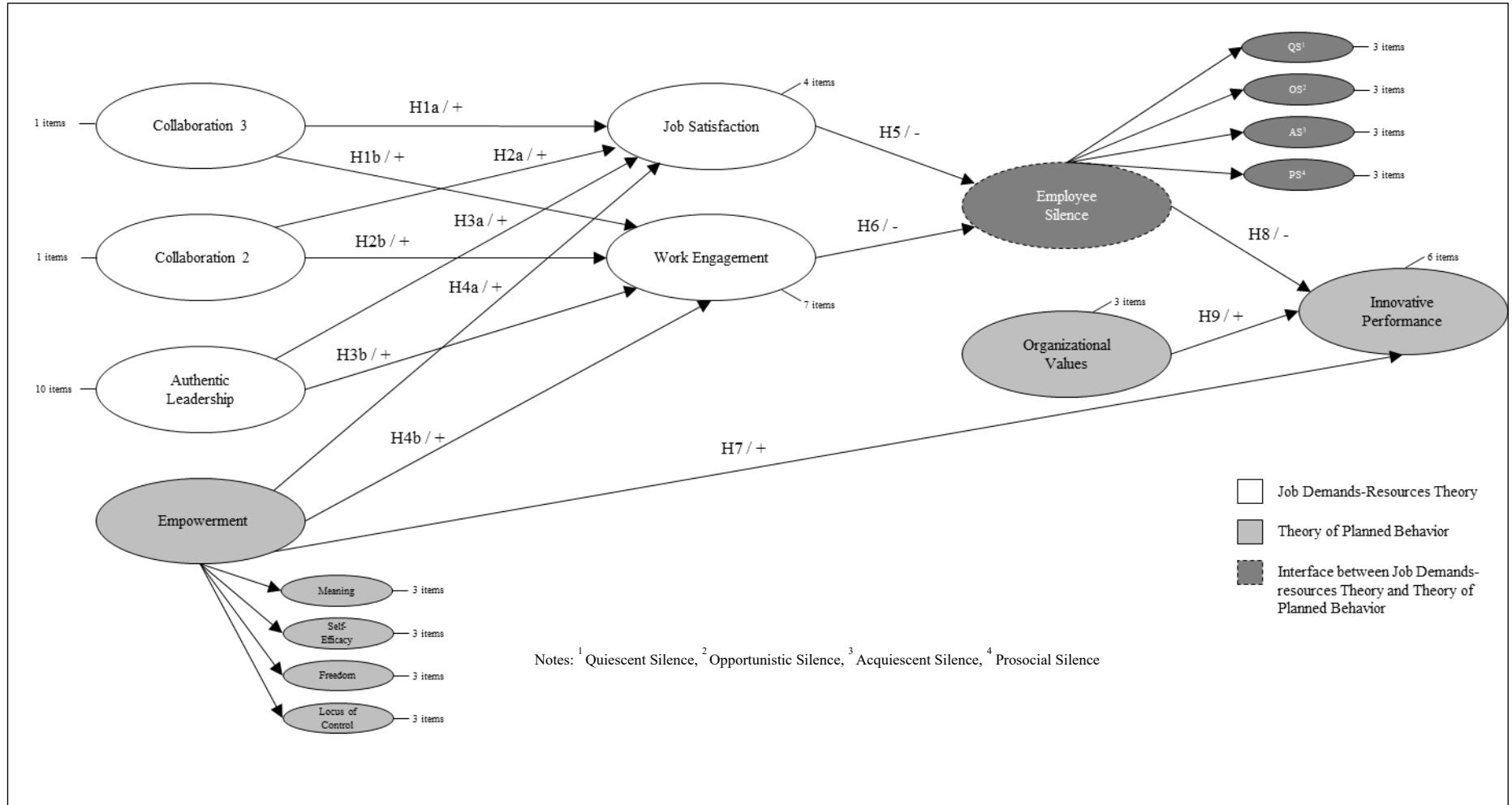
H8: Employee silence negatively relates to innovative performance.

The final hypothesis suggests that organizational values will promote innovative performance of employees. The relationship is based on the TPB since subjective norms – operationalized as organizational values – have an influence on the individual's behavior – operationalized as innovative performance. Multiple studies (e.g. Büschgens et al., 2013; Daher, 2016; Khazanchi et al., 2007) have stressed organizational culture and organizational values as key to innovative behavior. It could be shown that organizational values as a foundational building block of culture play an important role of employees engaging in innovative behavior. Therefore, the last hypothesis is derived as:

H9: Organizational values positively relate to innovative performance.

All hypotheses of the last paragraph derived are integrated and presented in the overall structure equation model (see Figure III-9).

Fig. III-9: Integrating the hypothesized relationships between variables within the SEM



Source: own creation

Next to the empirical investigation of the variables' relationships of the overall structure equation model (SEM), two further sub-research models focusing on antecedents and the effect of acquiescent silence (Figure III-10) and quiescent silence (Figure III-11) were performed. Following Knoll and Dick (2013) and Milliken et al. (2003), silence driven by resignation (acquiescent silence) and fear (quiescent silence) have shown to be more relevant than prosocial and opportunistic silence.

Consequently, the following hypotheses are derived with regards to examining the role of acquiescent silence in the given research context (figure 29):

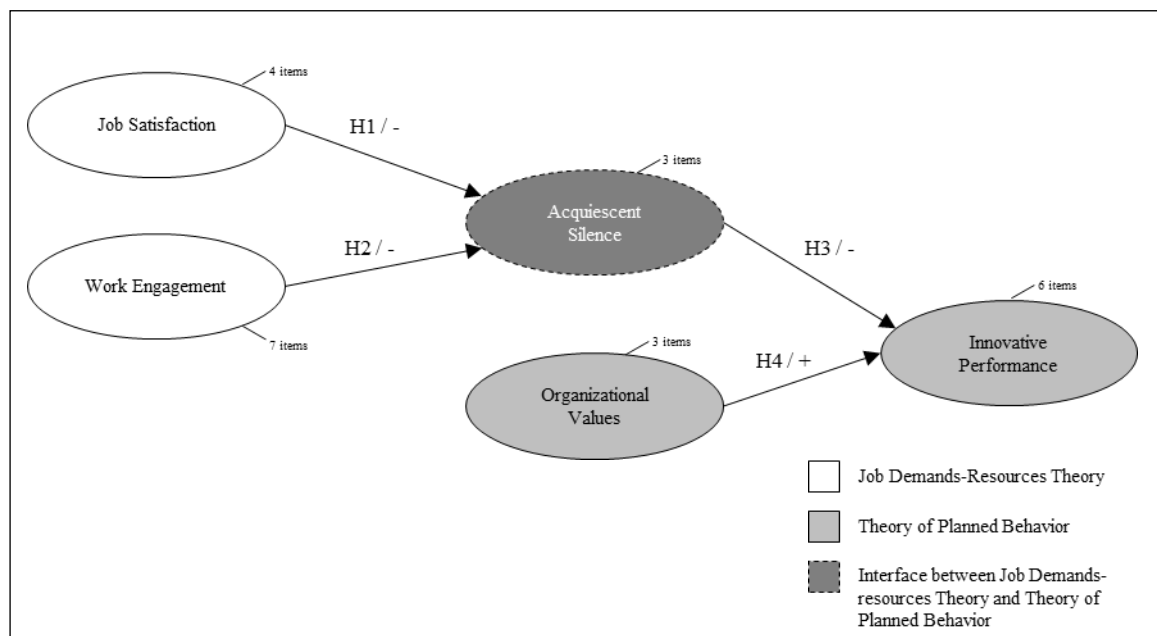
H1: Job satisfaction negatively relates to acquiescent silence.

H2: Work engagement negatively relates to acquiescent silence.

H3: Acquiescent silence negatively relates to innovative performance.

H4: Organizational values positively relate to innovative performance.

Fig. III-10: Research model – investigation of antecedents and effects of acquiescent silence



Source: own creation

Next to the sub-research model regarding acquiescent silence, the last empirical model investigates the antecedents and effects of quiescent silence. Therefore, the following hypotheses are stated:

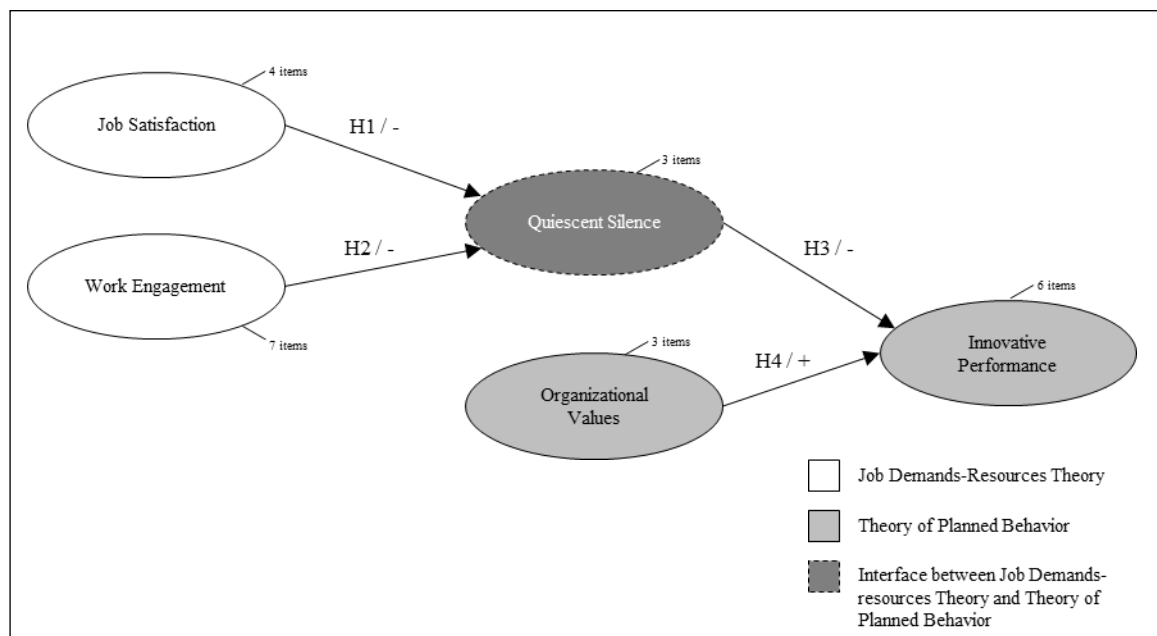
H1: Job satisfaction negatively relates to quiescent silence.

H2: Work engagement negatively relates to quiescent silence.

H3: Quiescent silence negatively relates to innovative performance.

H4: Organizational values positively relate to innovative performance.

Fig. III-11: Research model – investigation of antecedents and effects of quiescent silence



Source: own creation

Theoretical Contribution

The sections above aimed at combining the JD-R model and TPB by elaborating both central dimensions – the potential proximity of theoretical lenses and compatibility of underlying assumptions – but also at the deduction of hypotheses for the

empirical investigation. Deepening the discussion of both dimensions analyzed within the blending process is important since new conversations and novel research approaches are aimed to be compiled (Okhuysen & Bonardi, 2011, pp. 7–8). The following chapter outlines the overall theoretical contribution but also the added value with respect to the empirical study of this thesis, both resulting from building a blended theory by combining lenses of the JD-R model and the TPB. This approach takes especially the respective limitations of both theoretical concepts into account, as the combination of lenses could also counteract some of the limitations mentioned and support the strengths of each perspective in isolation. In addition to the contributions, also key challenges occurring in combining both theories will be shortly discussed. Moreover, a brief anticipation of the empirical study (see chapter IV) will be made as the design of the SEM is build on the combination of both theories. Finally, the chapter will close with a brief conclusion.

Based on the theoretical analysis conducted, it can be stated that the JD-R model and TPB show a close proximity of theoretical lenses, but rather a low compatibility of underlying assumptions. This means that both theories share the same phenomena of interest (understanding, explaining, and predicting behavior), but their approaches use different underlying assumption as they provide a varying degree of concretization in the development process of behavior. Following Okhuysen and Bonardi (2011), the theories' combinatorial fit can be evaluated using the two dimensions outlined and accordingly be categorized on the upper left quadrant of the cluster model (see Figure III-12).

Fig. III-12: Types of combinatorial fit depending on degree of proximity and underlying assumptions

| | | |
|-----------------------------|--|---|
| high Degree of proximity | (3) Close proximity of theoretical lenses / Low compatibility of underlying assumptions | (1) Close proximity of theoretical lenses / High compatibility of underlying assumptions |
| low Degree of proximity | (4) Wide apart proximity of theoretical lenses / Low compatibility of underlying assumptions | (2) Wide apart proximity of theoretical lenses / High compatibility of underlying assumptions |
| | low Degree of underlying assumptions | high |

Source: adapted from Okhuysen and Bonardi (2011)

This specific type of combinatorial option is often used in literature to develop a more robust explanation for empirical questions, which normally are investigated from multiple different lenses (Okhuysen & Bonardi, 2011, p. 9). With respect to this study, both theories focus on the evolvement of a certain types of performance (e.g. behavior) as an outcome variable of their model. Whereas the JD-R model rather emphasizes explicitly on resources and demands resulting through the dual pathways in a certain performance, the TPB highlights concretely the development of behavior through intentions and their beliefs. Although both theories use an entirely different approach by focusing on different root cause mechanisms, the combination of both theoretical lenses provides a more amplified, holistic, and robust explanation attempt regarding the development of human behavior in all its complexity. Especially the empirical examination of a rather uninvestigated behavior such as employee silence requires an advanced theoretically model that owns the methodologically capacity to explain the behavior’s determinants, effects, and its inherent characteristics. In addition, linking both theories also allows to derive novel research questions that are required with respect to the complexity of the research subject (silence), but also allows to evaluate these questions by empirical analyses using the blended theories as a concrete basis for the SEM (see chapter

III.4). Lastly, the inductively derived logic as well as explanatory value of the blended theoretical framework (JD-R model and TPB) will be tested by empirical investigations within this thesis (chapter IV).

Additional theoretical contributions can result from challenges associated with the combination of theories and are normally concerned with the difficulty of bridging the theoretical perspectives in order to create a coherent explanation for the phenomenon addressed. This may be especially the case if both theories are trying to explain a similar phenomenon. An option to dissolve this challenge is (1) *to analyze the strengths and weaknesses* of both theories isolated with regards to their underlying assumptions. This approach allows to detect areas that might be not incompatible, but rather mutual supportive. This helps gaining a deeper understanding of the phenomenon as the resolution of inconsistencies between theories is required. Next to the strengths and weaknesses, the (2) *theories' scope and boundaries* can be examined selectively. This helps identifying places where there is still a need for further explanation and where the isolated explanatory power of an isolated perspective on a phenomenon can be considered as a weakness (Okhuysen & Bonardi, 2011, p. 9). The localization of those places identified through the combination process of both theories, allows to build up a theoretical contribution and to increase the understanding in a way, that each perspective alone would have been unable to achieve (Okhuysen & Bonardi, 2011, pp. 9–10). In the end, exactly these places allow the greatest theoretical leverage of new approaches as combining two theories that share the same phenomenon into a new framework can be novel as the combination generates insights that each perspective alone would not provide (Okhuysen & Bonardi, 2011, p. 8).

With regards to critics and limitations raised against the TPB, Conner and Armitage (1998) have proposed to extend the actual theoretical model by integrating the TPB into a dual-process model of attitude-behavior relationships as the TPB just provides enough sufficient information when motivation and opportunity to perform the behavior are high. They argued that this dual process would cover

both, the deliberative and automatic process, describing the interaction between attitudes and behaviors – both highly depending on the level of motivation and opportunities prevailing. According to Conner and Armitage (1998, p. 1453), understanding both possible scenarios in this dual-process proposed would allow to derive novel avenues for research such as determining the most dominant process as well as the mutual determination of both processes. Operationalizing the JD-R model as an upstream process of the development of attitudes according to the TPB contributes to this call for future research. Since the JD-R model provides information regarding the loading and degree of demands and resources and therefore about the level of motivation and strain, the JD-R model implicitly incorporates the logic of the dual-processes proposed by Conner and Armitage (1998). Consequently, the limitation raised against the TPB can be counteracted by linking the JD-R model as an explanatory element (antecedent) to better understand the attitude-behavior relationship affected by the different configuration of strain (demands), motivation and opportunities (resources). In addition to the limitation raised by Conner and Armitage (1998), Fishbein (1997) stated that the TPB can be also used as a model for deriving effective interventions to perform changes in behavior as the TPB aims at describing causal processes. In this context, understanding the mechanisms of the JD-R model influencing the shaping of attitude and therefore the intention and behavior, allows to derive interventions on the level of the attitude's upstream logic and process. Consequently, research applying the JD-R model showed manifold that by changing demands and resources through the application of concrete practical measures (e.g. leadership support, autonomy, feedback, physical and mental resources) motivation can be increased and strain decreased. This has the effect that due to changes on the level of demands and resources also the element of performance (attitude) can be positively influenced. The JD-R research body provides numerous interventions that would help shaping attitudes (performance) in a certain direction, which in turn determine the desired behavior. As a side note, gaining a better understanding of the construct of atti-

tudes allows organizations to manage behavioral changes not only through adjustments in terms of PBC, but also through the more complex element of attitudes.

Finally, with reference to the JD-R model, blending both theories also allows to operationalize its outcome variable (performance) in a more concrete and profound manner as it might occur in the original conceptualized model. In this way, the TPB can help explaining through the element of attitude as a connecting piece of both theories the downstream effect mechanisms of attitude on a behavioral level. Therefore, it can be concluded that analyzing strengths and weaknesses as well as the scope and boundaries of both combined theories can indeed counteract particular limitations and initializing novel research approaches.

Moreover, (3) the *ontological position* of each theory should be identified and considered as well. The combination of theories with less compatible underlying assumptions indicates that usually one approach will be more to the fore and the other approach will be enriched by the other theory's perspective (Okhuysen & Bonardi, 2011, p. 10). In the context of this research approach, the blending process of both theories is build on the premise that understanding, explaining and predicting human behavior in work settings can be improved and be made more precisely by increasing the perception of attitudes as an important key element in the behavioral development process. Therefore, the JD-R model can also contribute to the understanding of the development process of attitudes by highlighting upstream determinants of the dual-pathways (demands and strain versus resources and motivation). Consequently, the TPB will be overall in the foreground as the aim is to understand the predicators of human behavior which is heavily enriched by the perspective and value contribution of the JD-R model.

III.6 Interim Conclusion

The overall aim of the presented chapter (III) was to outline the theoretical foundations of this thesis, which considerably supported the investigating of the role and

relevance of organizational and employee silence. This included the explanation of the Job Demands-Resource (JD-R) model and the Theory of Planned Behavior (TPB) since both were applied within this research context (see chapter III.2 and III.3). In addition, the chapter also captured the blending process of the JD-R model and TPB. In this regard, Okhuysen and Bonardi (2011, p. 6) requested within their well-established and renowned paper a call for developing more multiple lens-explanations in the field of management to understand organizational and behavioral issues more profoundly. The thesis at hand has taken up this call and aimed at making substantial contribution to the research on organizational and employee silence through the combination of theoretical lenses of both, the JD-R model and the TPB. This approach also focused on bridging isolated silos of knowledge within and across theoretical disciplines. The combination of the theoretical lenses was performed by analyzing two central dimensions of the theories offered by Okhuysen and Bonardi (2011, p. 11): (a) the distance between both phenomena in the original theories (*degree of proximity*) and (b) the *degree of compatibility of underlying assumptions* (see chapter III.1). Connecting both theories was based on highlighting areas of overlap complementarity, creating additional value from a conceptual perspective but also addressing contradictions. Hence, developing an overarching framework created by linking the JD-R model and TPB around the construct of attitude provided multiple advances: increasing complexity and therefore explanatory power through the novel combination, gaining insights that each theory alone could not provide and emphasizing an advanced operationalization of beliefs as determinants of attitude. This novel framework as a combination of multiple theoretical lenses is critical as a theoretical foundation for creating advanced insights and new explanations regarding the phenomenon of organizational and employee silence is very important. In addition, the new framework emerging from both theories allows to investigate this rather unknown concept through novel hypotheses derived (see chapter III.5) and empirical investigations on the basis of a SEM (see chapter IV). Consequently, this approach aims at proving the reasoning and logical interdependencies of both theories blended

and in doing so, contributing to the overall research body of organizational and employee silence.

In addition to outlining both theories – including the depiction of earlier theoretical models and associated critics, core elements and mechanisms of the respective theory, empirical evidence of the theory, implications for further research as well as their application in the field of organizational and employee silence – also hypotheses for the empirical investigation (SEM) were derived from the blended theoretical model (JD-R model and TPB). Based on that, the suggested contributions resulting from this combinatorial-theoretical approach with reference to the empirical study of this thesis but also to the limitations and overall research on the JD-R and TPB were stated (see chapter III.5). However, the reasoning regarding the potential contribution of the theoretical foundation outlined in this thesis shows promise to be confirmed by the empirical study in the next chapter (IV). Based on this contribution provided, managerial but also organizational challenges can be tackled and solved.

IV. Empirical Investigation

Within the following chapter, firstly the research approach and design of this thesis will be presented (IV.1). This includes the empirical research methodology (IV.1.1), the description of the research context (IV.1.2) and methodological aspects of the empirical investigation (IV.1.3). The last sub-chapter also provides more information about the (a) data collection process and data description, (b) SEM and measures of (in-)dependent variables, (c) analytic procedures and (d) preliminary results. Results of the empirical investigations will be presented in chapter IV.2. Furthermore, the study results will be critically discussed and interpreted (IV.3). The chapter of the empirical investigation closes with an interim conclusion (IV. 4).

IV.1 Research Approach and Design

In this chapter, the overall research approach and research design to answer the main research question and to test the hypotheses derived (III.5) will be outlined. This includes a short description of the empirical research methodology (IV.1.1) as well as the description of the research context (IV.1.2). Furthermore, chapter IV.1.1 describes the methodological aspects of the empirical investigation, which also covers the collection and description of data, the development of the SME, measures of variables, analytic procedures and primarily results.

IV.1.1 Empirical Research Methodology

Many scientific research questions involve the examination of causal dependencies between certain variables (characteristics). Following Backhaus et al. (2006, p. 338), the application of factual logical considerations of the respective relationships between the variables investigated is a necessary prerequisite for the conduction of causal analyses. Therefore, causal analyses allow the examination of these considerations based on a theoretically grounded system of hypotheses. These

analyses are used to investigate whether the theoretically deduced relationships correspond with the empirically data obtained. Consequently, this causal analysis is described by a confirmatory character and thus belongs to the hypothesis-testing statistical procedures (Backhaus et al., 2006, p. 338). Compared to other causal analyses, the structural equation model (SME) allows also to examine and to test relationships between latent and therefore not directly observable variables. According to Backhaus et al. (2006, pp. 355–356), structural equation models normally consists of three partial models: (1) structural model, (2) measurement model of the latent exogenous variables, and (3) measurement model of the latent endogenous variables. In this context, Backhaus et al. (2006, p. 358) emphasize two central prerequisites for the conceptualization and application of a structural equation model:

1) Intensive factual logical consideration:

“A prerequisite for the application of a structural equation model are explicit hypotheses about the relationships in an empirical data set, which must be established on the basis of intensive factual logical considerations” (Backhaus et al., 2006, p. 358).

2) Definition of theoretically based relationships between variables:

“the special feature of structural equation models is that theoretically hypothesized relationships between latent variables can be tested” (Backhaus et al., 2006, p. 358).

Thirdly, many scholars have addressed the challenge of sample size requirements for structural equation models as well. In this context, Wolf et al. (2013) argued that considerations made regarding the required sample size for SEMs are outdated and rather vague. Therefore, Wolf et al. (2013) investigated the sample size requirements for common applied SEMs by using Monte Carlo data simulations. Results of CFAs revealed that increasing the number of latent variables lead to a significant increase of the minimum required sample size of SEMs (Wolf et al.,

2013, p. 922). Depending on the number of variables and complexity of the SEM, the minimum required sample size was ranging from 30 up to 460 cases (Wolf et al., 2013, p. 913).

Considering those requirements, it can be stated that the research question and corresponding hypotheses of this thesis are deducted from literature on organizational and employee silence reviewed (see literature review – chapter I) and from both qualitative pre-studies conducted (see chapter II). Consequently, exhaustive factual logical considerations were performed. Furthermore, the SEM itself and its inherent relationships between the variables are build on the combination of the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007) and theory of planned behavior (Ajzen, 1991) according to the taxonomy of Okhuysen and Bonardi (2011). Hence, the SEM represents an appropriate form of statistical research design for the examination of the main empirical (quantitative) study of this thesis.

IV.1.2 Description of Research Context

Company description of cooperation partner

The quantitative study was conducted in cooperation with an Austrian company founded in 1950 and specialized in lighting technologies. The company's business activities focus on the development, production, and sales of lighting technologies. In addition, this company also provides lighting solutions and services as well as lighting management and lighting components. Within the sector of professional lighting, the company is European market leader and ranks number two on the business area of lighting components in Europe. With respect to business and production activities, the company operates 13 production facilities around the globe (Europe, Asia, North America, Australia) and maintains sales activities as well as partner companies in more than 90 countries.

Due to certain circumstances such as pricing pressure, increased competition, and the transformation towards LED, the company recorded a loss in the financial year of 2017/18. Over the last year, the profitability of the company stabilized due to certain measures they implemented (e.g. reduction of workforce, increasing the efficiency of processes). Within the business year 2019/20 the net profit rose by 30 million euros and up to 14.5 million euros. However, the revenue of the company decreased from 1.356 million euros in 2015/16 to 1.131 million euros in 2019/20. Due to change management initiatives, the number of employees decreased from 6.761 (2015/16) to 6.039 in 2019/20. The company owns a group structure and consists of two different divisions: (1) lighting and (2) component business. The cooperation partner can be labelled as a family business as 36.1 percent of shares in the company is held by the founding family. Additionally, further institutional investors are holding around 9 percent of the company shares combined. All remaining shares of around 55 percent is considered as free float.

Characterization and transformation of the lighting market

The lighting industry (worth 112 billion dollars) has been undergoing radical changes like many other sectors since many years. The entire sector is disrupted by decreasing sales of conventional lighting (solutions) and radical technological developments such as LED (light emitting diode), or the Internet of Things (IoT). These drivers are permitting and forcing companies within the industry to reinvent their existing business models. These challenges especially concern established companies, which are forced to transform themselves into full-service providers and to develop new digital and data-driven businesses. In addition, companies from outside of the lighting industry (e.g. startups) are entering the hitherto rather static and clearly structured market with their ecosystem-based solutions and products.

As outlined above, two significant technological drivers can be identified as essential for a forward integration in this static industry: (1) the increased conversion to

LED and associated business models such as Light-as -a-Service (LaaS – light leasing), and (2) the increasing demand for digital, smart, and connected lighting infrastructure – enabled through IoT technology and enriched by further LaaS-compatible services. On the one hand, these drivers are caused by changing customer demands (e.g. full-service provider, leasing models, lower willingness to pay) but also caused by the technology itself (LED). The LED consumes up to 70% less energy and has a much longer life span, which impacts the generation of recurring revenues. On the other hand, new technologies provide the possibility to create LaaS-Service packages, including fixed rental rates, installation, maintenance, and other services, such as IoT solutions. In this context, the global lighting market is growing, the share of LED technology is steadily increasing, and service models such (LaaS) are expected to grow at a CAGR of approximately 50.4 percent within the period of 2020-2025 (Mordor Intelligence LLP, 2020). Moreover, a study conducted by Oliver Wyman (2016) forecasted that with respect to IoT, the number of connected objects will grow by an annual rate of over 30 percent. The value added by IoT was estimated to present 400 billion dollars in 2016 and reached 1.8 to 2.2 TN dollars by the year 2020. As a conclusion, established companies in this industry, such as the cooperation partner, were and are forced to critically rethink their current business model and the corresponding corporate strategy for a new future directive. Only in doing so will these organizations be able to further dictate the new rules of the game and benefit from new market possibilities.

Change initiatives of cooperation partner within the data collection process

Within the period of the quantitative data conduction, the company was already undergoing major growth change initiatives to transform itself into a service provider. This included the development of new business models (partially cannibalizing existing business models), or the foundation of a new service entity. Additionally, the organization was forced to run restructuring-focused initiatives such as

downsizing, laying off employees and shutting down inefficient product facilities. All these growth and cost-centered initiatives were associated with high demands on employees of both divisions and required high levels of change readiness and commitment. On the other hand, the change-focused initiatives also had negative effects on the allocation and availability of job resources within the organization. However, due to these radical initiatives, resistance to change was expected from the workforce, threatening, and slowing down the entire change process.

IV.1.3 Methodological Aspects of Empirical Investigation

The following chapter emphasizes on (a) the data collection process and the description of the corresponding data. Furthermore, the structural equation model (SEM) based on the literature review conducted, pre-studies carried out, and theories (JD-R model and TPB) combined will be introduced as well as the respective measures of (in-)dependent variables (b). In the third sub-chapter, the (c) analytical procedures will be described and performed. The chapter closes with (d) preliminary results.

(a) Data collection and sample description

A company-specific quantitative study ($n = 4,527$) was enrolled to test the hypotheses of the research model derived (see chapter III.5). In alignment with the cooperation partner, the data was gathered over the period of two weeks in a cross-sectional survey on a global scale (13 countries) and in four different languages (German, English, French, Chinese). In this context, all item sets of the questionnaire were run through a forward and back translation process by native speaking people with professions in management, organizational psychology, organizational behavior. Employees from all organizational levels (contract workers, full-time employees, managers) were invited to participate in the online survey within their working hours. With support of the HR department, the survey was advertised to realize global reach and a high participation rate. Through additional initiatives such as online campaigns, statements from top-management, and support from

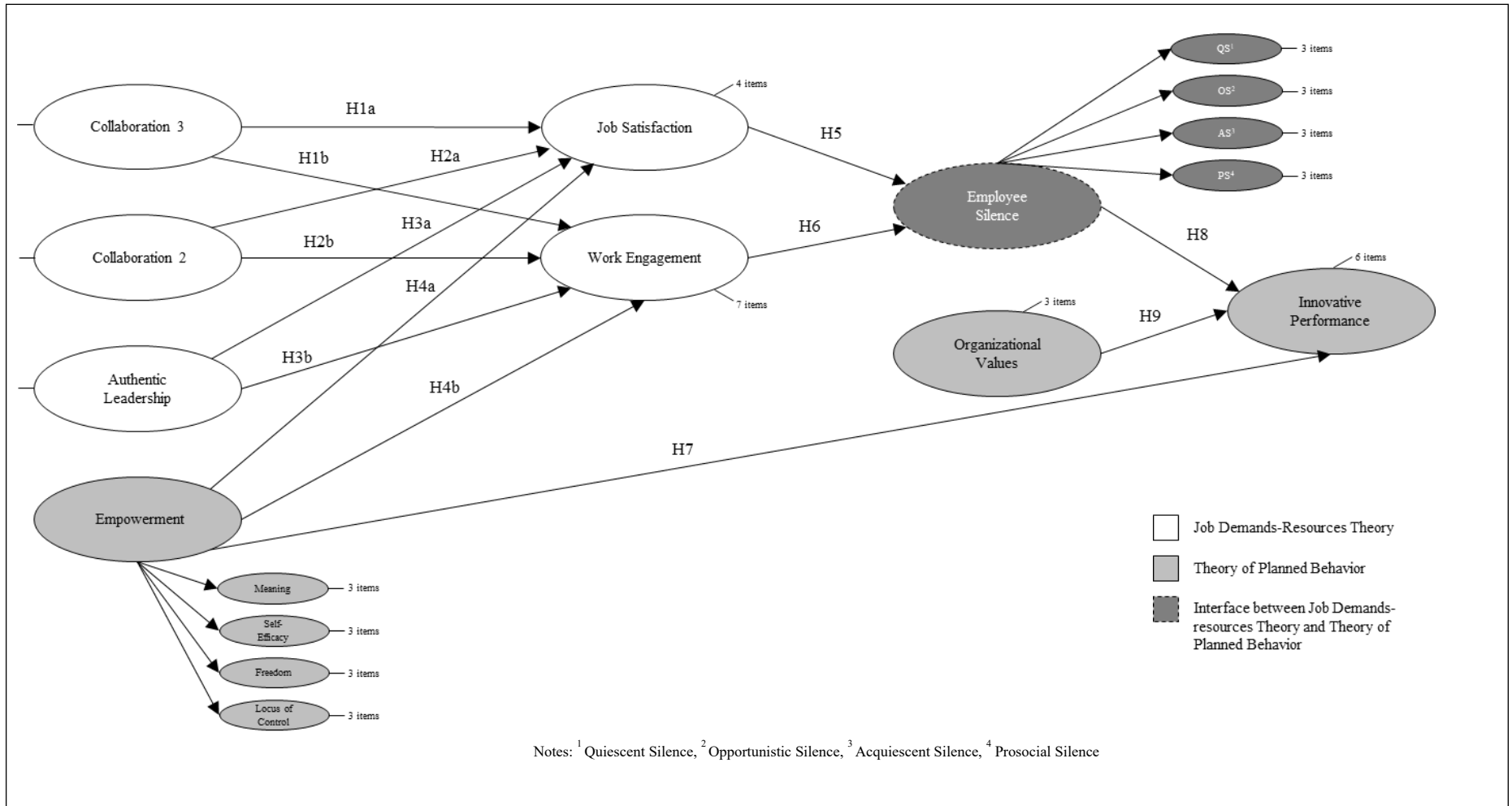
local managers, a participation rate of approximately 72% on a global level was reached. While white color workers could participate on the survey via laptop, smartphone, or tabled, blue color workers were given access to computer terminals in the production sites. Sociodemographic results revealed that more than 48.3% (n = 2,188) of the survey participants were already working for more than six years for the company. Employees with no disciplinary responsibility were the main participation driver (77.4%; n = 3,503) of the global survey. In contrast, 813 managers (18%) and 211 contract workers (4.7%) joined the online survey. With respect to the language selection for answering the survey, most employees chose German (n = 1,955; 43.2%), followed by English (n = 1,581; 34.9%), Chinese (n = 813; 18%) and French (n = 178; 3.9%). In alignment with the workers council and due to data protection, as well as to ensure the anonymity of participants, no additional socio-demographic data – besides tenure, affiliation to the organization and hierarchical level – were collected. Next to quantitative data, employees were also able to provide qualitative data within the online survey via open comment fields. 2,622 comments were claimed, which mainly addressed change relevant topics such as “collaboration”, “communication”, and “organization/company structure”. However, the qualitative data was not considered within this present study. Nevertheless, the amount of critical feedback provided reflects the change-related pressure employees were facing during this transformation process.

(b) Measures of (in-) dependent variables and SEM development

The hypotheses were derived based on the exhaustive literature review on employee and organizational silence conducted (see chapter I), the theoretical framework combined (see chapter III), and both pre-studies investigating the role and relevance of silence in distinct working contexts (see chapter II). The suggested relationships between the (in-)dependent variables were integrated into a structural equation model (SEM). All requirements for performing a SEM were met: (1) the hypotheses were derived based on intensive factual logical considerations via the literature review and both pre-studies, (2) theoretically-hypothesized relationships

between latent variables were developed (Backhaus et al., 2006), and (3) the minimum sample size criteria of the quantitative data sample was met (Wolf et al., 2013). In Figure IV-1, the SEM developed for this thesis is presented, including (a) the hypothesized relationships, (b) denomination of constructs measured, (c) number of items per construct, and (d) the structure of both theories (JD-R model and TPB) presented through color distinction. With reference to the measures of (in-)dependent variables, besides *organizational values*, and *collaboration*, all other measures were already widely validated and tested within scholars.

Fig. IV-1: Integration of hypothesized relationships between variables within the SEM



Source: own creation

To measure *employee silence*, a multidimensional construct consisting of a 12-item scale developed by Knoll and Dick (2013) was selected. The presented scales are assessing four different forms of silence (each type consists of three items) and were tested empirically for their distinctiveness and sufficient statistical robustness: (1) *acquiescent silence* (i.e. withholding of information due to disengaged behavior and resignation), (2) *quiescent silence* (i.e. withholding of information due to self-protective reason and driven by fear), (3) *prosocial silence* (i.e. withholding of information to benefit other people based on altruism or cooperative motives), and (4) *opportunistic silence* (i.e. withholding information to achieve advantages for oneself). All four types of silence, including the entire spectrum offered by Knoll and Dick (2013, p. 355) were applied and investigated within the study. All silence items were rated on a 7-point Likert scale from 1 (*does apply to me not at all*) to 7 (*does apply to me entirely*). The items reflected statements such as “I remained silent at work because nothing will change, anyway” (*acquiescent silence*) or “I remained silent at work because of concerns that others could take an advantage of my ideas” (*opportunistic silence*).

As a second multidimensional construct within this study, *empowerment* was included as a 12-item scale of Spreitzer (1995) in the questionnaire (sample item: “I have significant autonomy in determining how I do my job”). The item set covers the constructs of *meaning* (3 items), *self-efficacy* (3 items), *freedom* (3 items), and *locus of control* (3 items). All items were rated on a 7-point Likert scale from 1 = *does not apply at all* to 7 = *applies totally*.

Innovative performance (unidimensional construct) was measured by a 6-item set of Pundt and Schyns (2005) covering both dimensions, (1) *individual commitment to idea management* (2 items; sample item: “I often think about ideas in order to improve collaboration”) and (2) *taking charge* (4 items; sample item: “I often try to introduce new structures, technologies, or approaches to improve efficiency”). All items were also rated on a 7-point Likert scale from 1 = *I do not agree at all* to 7 = *I fully agree*.

To measure *collaborative behavior* within the present study, two unidimensional constructs provided by the cooperation partner were used. The first item (*collaboration 3*) was referring to the question “I experience good collaboration and communication within my own department” and the second item (*collaboration 2*) to the question “I experience good collaboration between different departments of the X (X = standing for the company name) group”. Participants were asked to rate on a 7-point Likert scale whether the statements would apply to them or not (1 = *does not apply at all*; 7 = *applies totally*). In addition to collaborative behavior, the item set for measuring *organizational values* within the survey as a unidimensional construct was provided by the cooperation partner as well. It consisted of 3 items. A sample item is: “We take actions and do not talk too long”. All items were rated on a 7-point Likert scale from 1 = *I do not agree at all* to 7 = *I fully agree*.

To measure *work engagement* as a unidimensional construct, an adapted 7-item scale provided by Sautier et al. (2015) was used. The original scale consisted of 9-items. However, two items had to be excluded due to the intervention of the works council. Two sample items of the final item-set were “I find the work that I do full of meaning and purpose” and “I am happy when I am working intensively”. All items integrated were rated on a 7-point Likert scale from 1 = *never* to 7 = *always*.

As a next unidimensional construct, *job satisfaction* was added to the questionnaire. In this regard, a 4-item scale according to Thompson and Phua (2012) was included within the survey (sample item: “I feel fairly well satisfied with my job”). All items were rated on a 7-point Likert scale from 1 = *I do not agree at all* to 7 = *I fully agree*.

Finally, *authentic leadership* was measured by the 10-item well-validated scale by Walumbwa et al. (2010). In this context, participants were asked to provide honest feedback about their direct supervisor (sample item: “My manager listens carefully to different points of view before coming to conclusions”). All items were rated on a 7-item scale rated from 1 = *does not apply at all* to 7 = *applies totally*.

(c) Analytical Procedures

Based on the data collection procedure and SEM development, including the operationalization of corresponding (in-)dependent variables, the analytical procedure of the quantitative study will be outlined in the following. For analyzing the quantitative data gathered, a confirmatory factor analysis (CFA) was performed by using AMOS (IBM SPSS Statistics 25.0). In addition, reliability analyses were applied to assess the data accuracy. In this regard, Cronbach's coefficient alpha can be considered as the most widely applied estimator in research to measure the reliability of tests and scales (Peterson & Kim, 2013). However, over the past years Cronbach's coefficient alpha has been criticized "as being a lower bound and hence underestimated true reliability" (Peterson & Kim, 2013, p. 194). As a result, composite reliability was introduced as a prevalent alternative to Cronbach's coefficient alpha. The calculation of composite reliability is mainly performed in combination with structural equation modeling. Within their quantitative study and based on the analysis of 2,524 pairs of coefficient alpha and composite reliability values deduced from empirical examinations, Peterson and Kim (2013, pp. 195–197) showed that composite reliability (average value: .86) delivered better estimates of true reliability than the coefficient alpha value (average value: .84). Therefore, the reliability was assessed within this study by composite reliabilities instead of Cronbach's coefficient alpha. The composite reliability of all constructs exceeds the value of 0.7 recommended by Nunnally and Bernstein (1994) as well as the value of 0.5 (exception for organizational silence) with regards to the average variance extracted (AVE). The results are displayed within Figure IV-2 below.

Fig. IV-2: Depiction of item composite reliability values and average variance extracted (AVE)

| Item Set | Composite Reliability Values | Average Variance Extracted (AVE) |
|---------------------------------------|------------------------------|----------------------------------|
| Authentic Leadership (10 items) | 0.956 > 0.7 (cutoff) | 0.687 > 0.5 (cutoff) |
| Empowerment (12 items) | 0.916 > 0.7 (cutoff) | 0.731 > 0.5 (cutoff) |
| Work Engagement (7 items) | 0.885 > 0.7 (cutoff) | 0.718 > 0.5 (cutoff) |
| Innovative Performance (6 items) | 0.926 > 0.7 (cutoff) | 0.757 > 0.5 (cutoff) |
| Job Satisfaction (4 items) | 0.868 > 0.7 (cutoff) | 0.529 > 0.5 (cutoff) |
| Organizational Values (3 items) | 0.919 > 0.7 (cutoff) | 0.621 > 0.5 (cutoff) |
| Organizational Silence (12 items) | 0.729 > 0.7 (cutoff) | 0.406 < 0.5 (cutoff) |
| Collaboration 2 & 3: 1 item construct | / | / |

Source: own creation

With respect to the verification of the hypotheses deduced, the proposed research model (see Figure IV-1) was tested by using SPSS AMOS 25.0. Therefore, the developed structural equation model (SEM) was tested with maximum likelihood estimation controlling for the constructs described within the sub-chapter above.

(d) Preliminary results

Further on, a confirmatory factor analysis (CFA) was conducted including the main constructs of the model. As outlined before, besides *empowerment* (Spreitzer, 1995) and *organizational silence* (Knoll & Dick, 2013) as multidimensional constructs, all other constructs are unidimensional. Hence, both *empowerment* (subscales: meaning, self-efficacy, freedom, locus of control) and *organizational silence* (subscales: acquiescent, quiescent, prosocial, and opportunistic silence) were treated as second order constructs with four subscales each. In the following section, the preliminary results will be outlined.

The model fit is $\chi^2 = 6868,629$, $df = 1388$, $p < 0.001$, $\chi^2 / df = 4.949$, $CFI = 0.974$, $TLI = 0.972$, and $RMSEA = 0.030$. The CFA indicates just a moderate model fit with $\chi^2 / df \geq 2.0$. As an explanation, this might be due to the size (number of constructs) and complexity (combination of two theories) of the structural equation model. However, CFI and TLI are higher than 0.95, and also $RMSEA \leq 0.08$ meets

the requirements (Marsh et al., 2004). The indicated requirement of the RMSEA usually just accounts for sample sizes $n < 500$. Due to the comprehensive data set and the recommendation of Kline (2015), a standardized RMR (SRMR) was run as its requirements account for sample sizes higher than 500 respondents. The result of the standardized RMR = 0.0458 and therefore is close to 0.05.

IV.2 Results of the Empirical Investigation

The following chapter aims at presenting the results of the empirical investigation. Hence, within chapter IV.2.1, descriptive information regarding the variables used within the study, their composite reliabilities (CR) and average variance extracted (AVE), as well as the correlation matrix will be provided. The correlations examined will be discussed shortly. In the following sub-chapter (IV.2.2), the hypothesis deducted will be tested through the structural equation model (SEM) based on the confirmatory factor analysis (CFA), including the presentation of results.

IV.2.1 Descriptive Results

Figure IV-3 outlines comprehensive descriptive information on variables applied within the study. As stated in detail within the section above, all constructs show high levels of composite reliability and their values exceed the 0.7 value suggested by Nunnally and Bernstein (1994). Therefore, sufficient construct reliability is given. With focus on the variables' average variance extracted (AVE), all constructs meet the requirement of 0.5, whereas organizational silence (0.406) falls short of the limit by a still acceptable margin. With respect to the conduction of the Pearson inter-correlation matrix (Figure IV-3), all latent variables, except for organizational silence and organizational values, correlated significantly. Otherwise, the results of the correlation matrix also indicate that organizational silence strongly correlates with other key variables of the study. Next to summarizing and presenting the data, the correlation matrix is also used for further advanced analyses and diagnostics.

Fig. IV-3: Pearson inter-correlations, means, standard deviations (SD), composite reliabilities (CR) and average variance extracted (AVE)

| | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>CR</i> | <i>AVE</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> | <i>7</i> | <i>8</i> |
|--------------------------|----------|-------------|-----------|-----------|------------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 Authentic Leadership | 4527 | 5,0548 | 1.25 | 0.96 | 0.69 | | | | | | | | |
| 2 Empowerment | 4527 | 5,8186 | 1.03 | 0.92 | 0.73 | .603** | | | | | | | |
| 3 Work Engagement | 4527 | 5,2693 | 1.12 | 0.89 | 0.72 | .545** | .860** | | | | | | |
| 4 Innovative Performance | 4527 | 5,9508 | 1.66 | 0.93 | 0.76 | .316** | .682** | .471** | | | | | |
| 5 Job Satisfaction | 4527 | 5,1166 | 1.26 | 0.87 | 0.53 | .543** | .779** | .871** | .390** | | | | |
| 6 Organizational Values | 4527 | 4,4157 | 1.51 | 0.92 | 0.62 | .500** | .524** | .535** | .224** | .553** | | | |
| 7 Organizational Silence | 4527 | 2,2149 | 1.39 | 0.73 | 0.41 | -.290** | -.232** | -.230** | -.086** | -.225** | -.009 | | |
| 8 Collaboration 2 | 4310 | 4,53 | 1.70 | | | .450** | .544** | .490** | .290** | .495** | .686** | -.107** | |
| 9 Collaboration 3 | 4421 | 5,59 | 1.55 | | | .556** | .559** | .454** | .284** | .471** | .405** | -.311** | .525** |

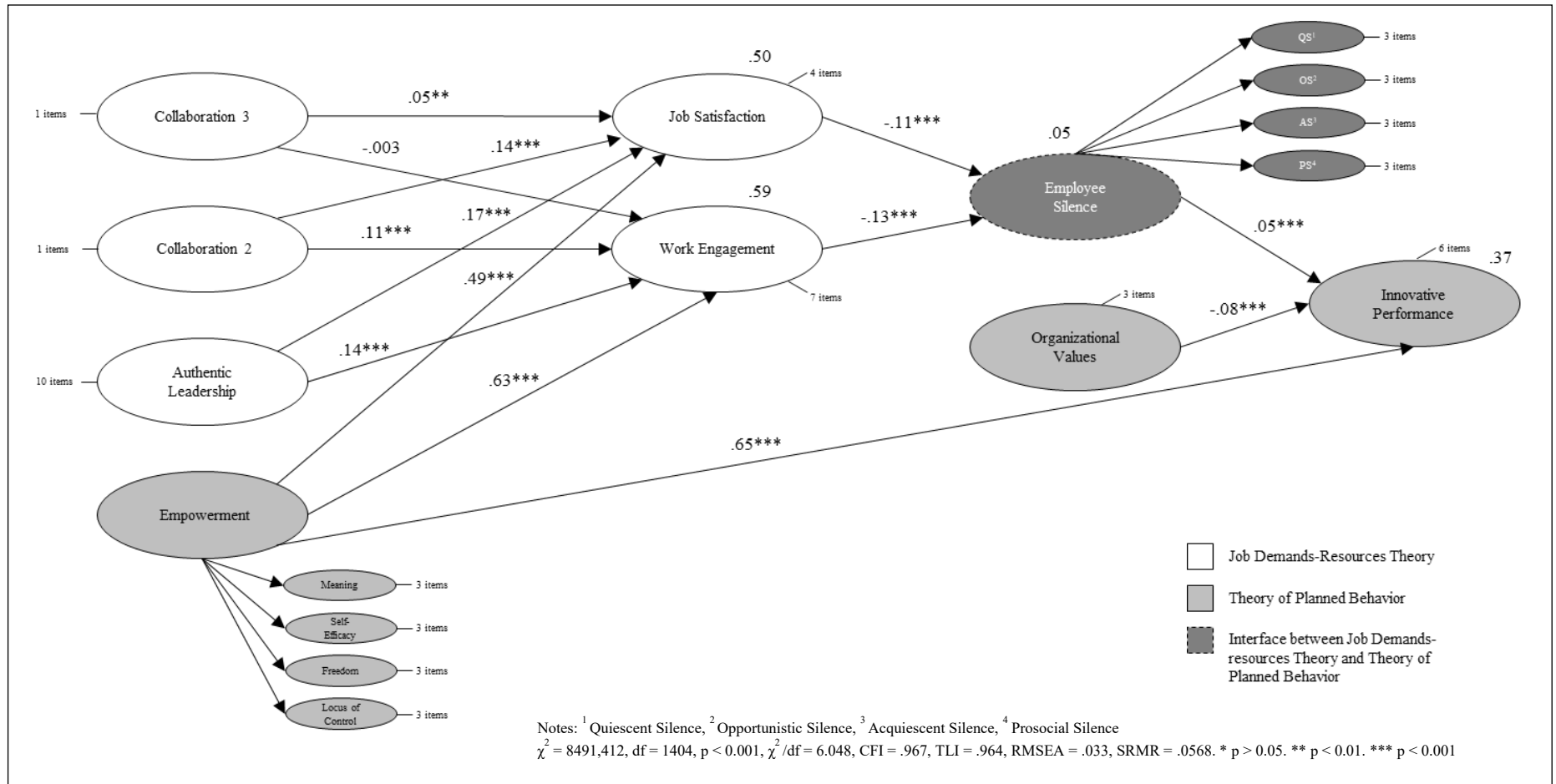
Source: own creation

Notes: * $p > 0.05$ (two-tailed), ** $p < 0.01$ (two-tailed). Due to missing values, n differs for correlations with the following variable: collaboration 2, n = 4,310; collaboration 3, n = 4,421.

IV.2.1 Hypotheses Testing

A structural equation model (SEM) based on the CFA was performed in order to test the hypotheses derived within this study. The results of the quantitative analysis with respect to the overall structural equation model (part a) are presented within Figure IV-4 and show the specific variables (including the number of items), standardized regression weights, significances, path directions, and coefficients of determination (R^2). Additionally, two further analyses (see Figure IV-5 and IV-6) were performed to investigate the impact of certain antecedents (job satisfaction and work engagement) on (1) acquiescent and (2) quiescent silence, as well as their impact on innovative performance. Results of these additional analyses are presented in sub-chapter (b).

Fig. IV-4: Tested research/structural equation model (SEM)



Source: own creation

(a) *Results of the Overall Structural Equation Model (SEM)*

The SEM provided a moderate acceptance of the model fit with $\chi^2 = 8491,412$, $df = 1404$, $p < 0.001$, $\chi^2 / df = 6.048$, $CFI = 0.967$, $TLI = 0.964$, and $RMSEA = 0.033$. The SEM indicates only a moderate model fit with $\chi^2 / df \geq 2.0$. The moderate acceptance may be caused by the size (number of constructs) and complexity (combination of two theories) of the structural equation model. However, CFI and TLI are higher than 0.95, and also $RMSEA \leq 0.08$ meets the requirements (Marsh et al., 2004). The standardized RMR = 0.0568 is close to 0.05 (Kline, 2015).

As shown in Figure IV-4, greater demand through collaboration requirements (item “collaboration 3”) was rather unrelated to job satisfaction and did induce job dissatisfaction just very weakly ($\beta = .05$, $p < 0.01$). Hence, hypothesis H1a could be supported, but just with a weak relationship. It also showed that greater demand through collaboration requirements (item “collaboration 3”) was not related to work engagement ($\beta = -.003$, *ns.*) and displayed no significant. Consequently, hypothesis H1b could not be supported. In contrast to that, hypothesis H2a and H2b could be supported as greater resources through collaboration opportunities decreased job dissatisfaction ($\beta = .14$, $p < 0.001$) and increased work engagement ($\beta = .11$, $p < 0.001$). As predicted in hypothesis H3a and H3b, there is significant positive relation of authentic leadership and job satisfaction ($\beta = .17$, $p < 0.001$) and work engagement ($\beta = .14$, $p < 0.001$). Hypotheses H4a and H4b proposed a positive relation of empowerment on job satisfaction ($\beta = .49$, $p < 0.001$) and work engagement ($\beta = .63$, $p < 0.001$), which holds to be true. Additionally, hypothesis H5 could be supported as job satisfaction negatively relates to organizational silence ($\beta = -.11$, $p < 0.001$). In the same vein, work engagement also showed to be negatively related to organizational silence ($\beta = -.13$, $p < 0.001$), thus hypothesis H6 could be supported too. As predicted in H7, there is significant positive relation of empowerment and innovative performance ($\beta = .65$, $p < 0.001$). In contrast, hypothesis H8, which suggested that employee silence negatively relates to innovative performance ($\beta = .05$, $p < 0.001$), could be not supported. Lastly, hypothesis

H9 indicated that organizational values positively relate to innovative performance. However, the results of the analysis showed the contrary ($\beta = -.08$, $p < 0.001$).

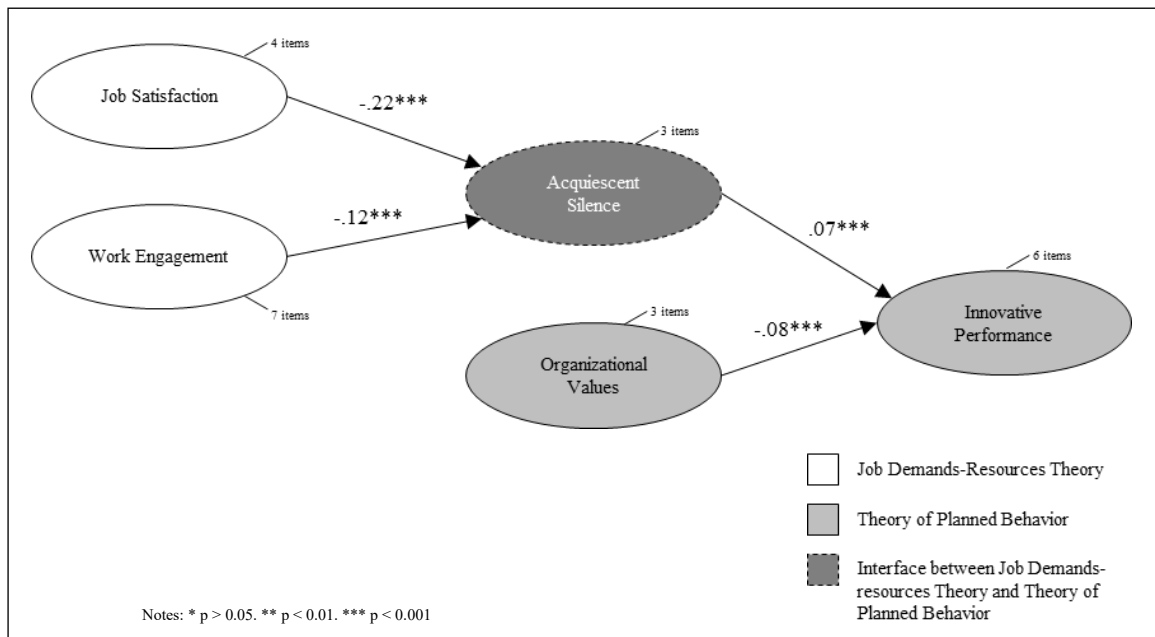
(b) Acquiescent and Quiescent Silence Focused Analyses

In addition to the analysis of the overall SEM based on the CFA and the test of the hypotheses derived, the results of two further investigations with focus on acquiescent (Figure IV-5) and quiescent silence (Figure IV-6) will be outlined in this chapter. According to Milliken et al. (2003) and Knoll and Dick (2013), both sub-forms of employee silence, caused by resignation (acquiescent silence) and fear (quiescent silence), have shown to be more relevant than prosocial and opportunistic silence. In order to test and to validate these assumptions, the effect of job satisfaction and work engagement on both different forms of silence as well as their impact on innovative performance was investigated within two separated studies.

Acquiescent silence

As shown in Figure IV-5, job satisfaction negatively relates to acquiescent silence ($\beta = -.22$, $p < 0.001$), therefore, supporting hypothesis H1. In addition, H2 could also be supported, as work engagement showed a negative relation to acquiescent silence ($\beta = -.12$, $p < 0.001$). With focus on acquiescent silence and in contrast with what was predicted, there is a positive relation of acquiescent silence on innovative performance ($\beta = .07$, $p < 0.001$). Therefore, hypothesis H3 could not be supported. The last hypothesis H4 proposed a positive relation of organizational values on innovative performance, which could not be supported either ($\beta = -.08$, $p < 0.001$).

Fig. IV-5: Analysis of antecedents and effect of acquiescent silence

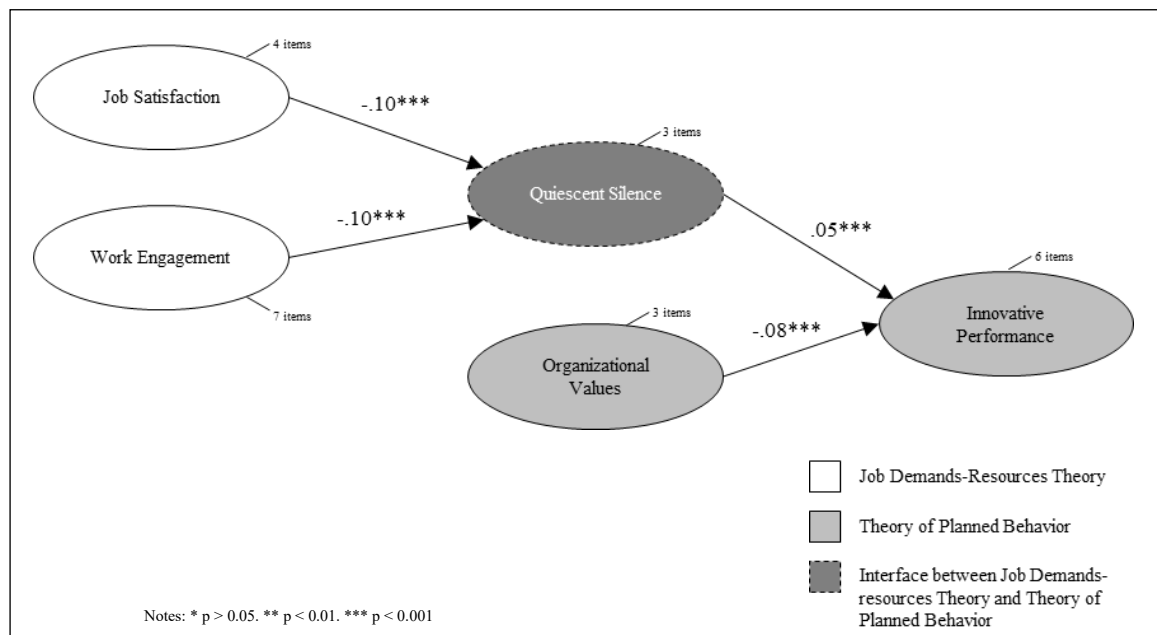


Source: own creation

Quiescent silence

The results of the analyses with focus on quiescent silence are shown in Figure IV-6. Based on the findings, jobs satisfaction showed to be negatively related to quiescent silence ($\beta = -.10, p < 0.001$) as hypothesis H1 suggested. Also, work engagement was negatively related to quiescent silence ($\beta = -.10, p < 0.001$) as proposed in H2. Contrary to hypothesis H1 and hypothesis H2, quiescent silence did not show a negative but positive relation to innovative performance ($\beta = .05, p < 0.001$). Hence, hypothesis H3 had to be rejected. Finally, results revealed that organizational values were negatively related to innovative performance ($\beta = -.08, p < 0.001$). The hypothesis however stated a positive relation. Consequently, hypothesis H4 could not be supported either.

Fig. IV-6: Analysis of antecedents and effect of quiescent silence



Source: own creation

IV.3 Critical Discussion and Result Interpretation

Based on the combination of the JD-R model and TPB, the study presented provides important insights into the role and relevance of organizational silence focusing on its antecedents (job satisfaction and work engagement) and its effect on innovative behavior in the context of business model transformation. Results of the empirical study revealed that employee silence could be measured and therefore detected within the organization. In addition, it could also be considered as a widely spread phenomenon within the organization of the cooperation partner. The following chapter aims at critically discussing and interpreting the results, by contemplating the outcomes of the qualitative study (pre-study 1 and pre-study 2), quantitative study (SEM) as well as the results from the literature review and theories (JD-R and TPB).

Combining both theoretical lenses of the JD-R model and the TPB aimed at creating high added value in terms of advancing new insights by offering a broader and

deeper understanding of the mechanisms and underlying aspects of organizational silence as well as examining the hypotheses derived from the combined theoretical framework. However, before discussing the validity of the overall theoretical framework along the results gained from the qualitative and quantitative study, the validity of each theory itself will be examined. Additionally, the discussion of the empirical results should show that blending theories is not an act of coincidence and should prove the value of combining lenses of different theories.

Investigating the dual pathways of the JD-R theory

As already outlined, the JD-R theory integrates two central concepts – the *stress research* and *motivation research* – as two fairly independent research traditions (Demerouti & Bakker, 2011, p. 1). Therefore, scholars in the past were focusing on understanding (1) what are the main triggers for job stress and (2) what are motivational factors for employees within their occupation (Bakker & Demerouti, 2014, p. 1). In this context, multiple studies have shown that job characteristics can have a substantial impact on employees' well-being (e.g. work engagement, burn-out, job strain), but also inherent certain job demands (e.g. high work pressure, emotional demands) which can lead to exhaustion, impaired health or stress (Bakker & Demerouti, 2007; Cooper, 1988; Doi, 2005; Halbesleben & Buckley, 2004). Furthermore, job resources (e.g. autonomy, feedback, support) lead to a motivational process resulting in job-related learning, organizational commitment, or work engagement (Demerouti, Nachreiner, et al., 2001; Salanova et al., 2005; Taris & Feij, 2004). However, plenty research has been created investigating potential antecedents of the well-being of employees but insights regarding contemporary job challenges and demands are limited (Bakker & Demerouti, 2007, p. 309).

Results of the present study have shown that the validity and explanatory contribution of the JD-R model not only applies to very current job profiles, but also to job characteristics that are undergoing major changes due to the disruptive transfor-

mations of a company's business model. Focusing on the (1) *health impairment process* caused by job demands and job strain, the statistic outcomes indicated that especially good collaboration within one's own team (item collaboration 2) has a strongly significant positive impact on *job satisfaction* ($\beta = 0.14, p < 0.001$) and *work engagement* ($\beta = 0.11, p < 0.001$). On the other hand, good collaboration between different departments of the organization (item collaboration 3) was significant but just weakly to *job satisfaction* ($\beta = 0.05, p < 0.01$), but reported no significant relation to *work engagement* ($\beta = -0.003, ns$). Consequently, collaboration opportunities within teams (collaboration 2) are increasing both job satisfaction and work engagement. To support this empirical findings, scholars (e.g. Aldeeb & El-Demerdash, 2016; Bakker, 2010; Balouch & Hassan, 2014; Galletta et al., 2016) have showed that the lack or nonexistence of collaboration opportunities reduces employees' job satisfaction particularly in high demanding working environments. This is not surprising as in such settings (e.g. characterized by challenging organizational transformation processes), employees are typically facing high working demands and job tasks, which require strong collaboration in and across teams. If those demands are not managed by high levels of within-group collaboration, it might lead to work overload and emotional demands. This can trigger in turn exhaustion of employees' mental physical resources, such as depletion of energy, burnout or, as measured within this study, job dissatisfaction (e.g. Bakker et al., 2000; Bakker, Demerouti, Taris, et al., 2003; Demerouti, Bakker, et al., 2001; Demerouti, Nachreiner, et al., 2001; Hakanen et al., 2006; Leiter, 1993). The inconclusive results of the second collaborative item (collaboration 3) can be explained from a statistical as well as practical point of view. Firstly, this single item has been designed and provided by the cooperation partner. Even though its inherent reasoning is plausible, the item has not been measured yet in previous studies and therefore its explanation power might be limited. Secondly and more presumably, the organization in which the quantitative survey was rolled out, is structured as a group. Although the transformation initiatives had an impact on the entire organization/group, the actual transformation process was not evolved so far

that a strong collaboration behavior between the different organizational elements of the entire group was implicitly necessary. At the stage of the survey conduction, most change efforts and requirements were merely imposed on the teams themselves. Consequently, the inconclusive results regarding job satisfaction and work engagement could be explained by the fact that limited extra-collaboration activities were required at this moment.

In addition to the (1) *health impairment process*, results of the study also supported the (2) *motivational process* as authentic leadership demonstrated a positive and significant relation to work engagement ($\beta = 0.14$, $p < 0.001$). In line with other studies, the provision of job resources such as support and feedback from supervisors can lead to employee motivation which in turn results in high work engagement and enjoyment, low cynicism, and increased performance (e.g. Bakker et al., 2007; Bakker et al., 2010; Bakker & Demerouti, 2014). With respect to the study findings, authentic leaders have the ability to positively impact the subordinates' work engagement based on their high degree of integrity, deep sense of purpose, and commitment to their own core values. Researchers such as A. Hassan and Ahmed (2011) or Alok and Israel (2012) stated that authentic leadership behavior promotes strong trusting relationships to their followers and hence results in higher levels of work engagement. This applies especially for situations in which high levels of uncertainty or working demands are prevailing (e.g. organizational wide transformation processes). Therefore, the results underscore the importance and relevance of authentic leaders as they help developing employees' resources and hence mutually affect job resources and work engagement over time (Xanthopoulou et al., 2009).

Next to the direct impact of job demands on strain and job resources on motivation, the JD-R theory also suggest certain *interrelations between job demands and job resources* to function as buffer effects. Therefore, the *health impairment* and *motivational process* are not just initiating two different independent processes but also have joint effects. Multiple studies have proven this effect as job resources

can decrease the impact of job demands on strain (e.g. Bakker et al., 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Results of this present study also provide further support for this buffering effect as authentic leadership has a significant positive impact on job satisfaction ($\beta = 0.17, p < 0.001$). This in turn indicates that authentic leaders can decrease the level of employee dissatisfaction through their behavior. As an explanation, Bakker and Demerouti (2014) argue that providing certain resources help employees to better deal with their daily working demands. The present study confirms this assumption as characteristics of authentic leaders such as keeping employees well informed about important changes, setting clear goals and expectations, or seeking and providing feedback to improve the interactions with others, are all highly relevant resources and therefore help reducing job dissatisfaction. Moreover, Bakker et al. (2005, p. 170) have identified similar results through their empirical study: employees that experienced high-quality relationships with their supervisors by receiving feedback, social support and autonomy reported less signs of work overload or emotional and physical demands. Consequently, authentic leaders can buffer the negative effect of job demands on strain (job dissatisfaction) through their instrumental help and emotional support, which preserves the performance and job satisfaction of employees. Lastly and from a different perspective, Xanthopoulou, Bakker, Dollard, et al. (2007) provided further empirical evidence based on their moderated SEM analyses that job resources such as autonomy, support and opportunities for professional development were buffering employees' job demands. In this regard, Judge et al. (2005) assumed that higher personal resources lead to more positive individual self-esteem and that for this reason a higher goal conformity can be expected. Two years later, Luthans and Youssef (2007) could confirm this assumption as employees with goal self-concordance displayed higher level of intrinsic motivation which in turn resulted in higher job satisfaction and performance. Taking these overall insights into account, the results of this study clearly imply that authentic leaders provide exactly the required occupational and personal resources for employees through their behaviors. The buffering effect can be assumed to be particu-

larly strong in organizational transformation processes as employees are facing high demanding situations and therefore are highly dependent on considerable job resources (e.g. support, feedback, information, trust) to cope with existing requirements and challenges. Next to authentic leadership, the results of this study also revealed that good collaboration within teams was positively related to work engagement ($\beta = 0.11, p < 0.001$). This indicates that collaboration can also be considered to have a buffer effect. Therefore, no or just very little collaboration opportunities have not only a diminishing effect on job satisfaction but also on work engagement. Consequently, the lack of opportunities for collaboration negatively “buffers” and hence reduces the positive impact of authentic leadership on work engagement.

Within this study, *employee silence* is defined as the outcome variable of the JD-R theory and is therefore influenced by the theory’s dual pathways (job demands and resources) and their interaction effects. The JD-R theory suggests that strain has a negative, and motivation a positive impact on the outcome variable. The results of the SEM supported the reasoning of the JD-R theory as both, job satisfaction ($\beta = -0.11, p < 0.001$) and work engagement ($\beta = -0.13, p < 0.001$) were negatively related to employee silence. Generally, and in this research context, silence is defined as an undesirable organizational wide phenomenon (organizational silence) or behavior of employees (employee silence) and therefore owns a negative connotation. As stated, the SEM revealed that job satisfaction reduces silence in organizations ($\beta = -0.11, p < 0.001$), or in other words, job dissatisfaction leads to increased levels of employee silence. Referring to the systematic literature review conducted, only a few research papers have investigated the relationship between job satisfaction/ job dissatisfaction, work engagement and employee silence so far.

Vakola and Bouradas (2005) were among the first to investigate the dimensions of silence climate on employee silence behavior, organizational commitment and job satisfaction. The outcomes revealed a negative correlation among silence behavior, organizational commitment and job satisfaction (Vakola & Bouradas, 2005,

p. 452). The researchers indicated that silence behavior can cause low levels of commitment and job satisfaction and that attitudes of supervisors regarding silence were identified to be the strongest predictor of job satisfaction (Vakola & Bouradas, 2005, p. 452). This leads to the conclusion that employees are more satisfied when leaders support open communication, take the employees seriously, create a trustworthy environment and honestly take their opinions into considerations. Those findings can also be supported by this present study as authentic leadership has a positive impact on job satisfaction. However, Vakola and Bouradas (2005, p. 452) also stated that the relationship between silence behavior and job satisfaction requires further investigations. They assume that silence behavior and job satisfaction play a dual role, as silence behavior might not just be an antecedent of job satisfaction, but also an effect, potentially resulting in a vicious circle reinforcing each other. In this respect, the study results clearly provide further beneficial insights into this dual role, as silence behavior is not just affecting job satisfaction, but job satisfaction also showed to reduce silence in organizations.

In addition to Vakola and Bouradas (2005), Knoll and Dick (2013) have also investigated the role of *job satisfaction* within their empirical study conceptualizing *four forms of employee silence*. Knoll and Dick (2013, p. 352) could show that job satisfaction negatively relates to acquiescent, quiescent, prosocial and opportunistic silence – but with different effect sizes. This leads to the conclusion that withholding information in general leads to dissatisfaction regardless of the underlying motive (Knoll & Dick, 2013, p. 357). However, compared to acquiescent and quiescent silence, individuals that engaged in prosocial and opportunistic silence demonstrated lower levels of job satisfaction. Therefore, employees rather engage in quiescent silence due to fear of negative consequences and in acquiescent silence when they are not able to affect any change at all (resignation). Both types of silence are leading to higher levels of dissatisfaction (Knoll & Dick, 2013, p. 357). In general the results of Knoll and Dick (2013) are in alignment with the results of this study. It also has shown that job satisfaction is particularly negatively-related

to acquiescent silence ($\beta = -0.22, p < 0.001$), compared to quiescent ($\beta = -0.10, p < 0.001$) and employee silence ($\beta = -0.11, p < 0.001$). Results indicate that job satisfaction evidently reduce acquiescent silence, but acquiescent silence also causes resignation of employees due to high working demands. This might have various reasons according to Knoll and Dick (2013, p. 355): (1) individuals do not find a sympathetic ear in the organization, (2) supervisors are not open to proposals, concerns, or ideas, and (3) employees are convinced that nothing will change anyway. Those explanations are in line with the findings of the qualitative study of Milliken et al. (2003, p. 1462). Especially in times of disruptive company-wide changes, organizations are highly dependent on employees communicating and sharing their ideas, concerns, and other relevant information. Therefore, organizations have to implicitly put measures in place to avoid people engaging in silence and lapsing into resignation.

Compared to the empirical study of this thesis, other researchers were addressing the direct relationship of job demands, partly moderated via strain, on silence behavior (e.g. Dedahanov et al., 2016; Knoll & Dick, 2013; Madrid et al., 2015; Milliken et al., 2003). In this context, Milliken et al. (2003, p. 1473) outlined that employee silence can create stress, dissatisfaction and disengagement with serious consequences for organizations. Within their empirical investigation, Pinder and Harlos (2001) and Knoll and Dick (2013) found out that quiescent and acquiescent silence are both linked to higher work-related stress. Furthermore, Knoll and Dick (2013, p. 357) could prove the positive correlation between strain and silence. Interestingly, engaging in silence seemed to reduce strain and was chosen by employees as a kind of avoidance and self-protection strategy. Pinder and Harlos (2001) have argued in a similar vein, that employees that show high levels of resignation would perceive lower levels of strain as speaking up will not have any effect at all within the organization. In contrast, Madrid et al. (2015, p. 1894) define the relationship between negative affect and silence as a stress process caused by job demands, but could not find a significant correlation between problem-

solving demands and silence. The most recent study investigating this relationship revealed that silence causes stress (Dedahanov et al., 2016). The researchers argued that withholding information induces stress as employees believe they are obliged to communicate their concerns, ideas, and suggestions within the organization, which in turn causes dissatisfaction. Following Morrison and Milliken (2000), this inconsistency between beliefs and behavior makes employees experience stress (Dedahanov et al., 2016, p. 1259). Therefore, existing literature investigating the relationship between stress, strain and silence revealed inconsistent results and lines of argumentation. On the contrary, the presented study investigated the effect of strain (dissatisfaction) on employee silence induced by job demands by following the health impairment process of the JD-R theory. Interpreting the results, it can be indicated that high job demands (e.g. anxiety, transformation efforts and requirements) lead to high levels of job dissatisfaction (strain) which in turn causes employee silence. Therefore, the study examined job dissatisfaction as an antecedent of employee silence and not the other way around. The fact that employees who experienced high levels of job dissatisfaction, caused by high job demands, rather remain silent might be due to various reasons. First, speaking up can be perceived as not being worth the effort when past negative experiences bias employees into thinking that it will not make any difference anyway. Second, employees may want to protect themselves from increasing levels of job dissatisfaction as they may be labelled or viewed negatively when addressing problems, issues, or ideas. Third, employees may engage in silence to protect themselves from work-overload and increasing stress due to high demands within the organizations (e.g. driven by organizational transformation processes), or fourth, due to organizational characteristics (e.g. unsupportive culture) or poor relationship with the manager. Lastly, dissatisfied employees may also choose to remain silent as a strategy to sabotage certain activities and measures within the organization (opportunistic silence) as an expression of their discontent. Those findings and explanations also indicate that the relationship between silence and job dissatisfaction may play dual role. Employee dissatisfaction can trigger silence and vice versa, result-

ing in a viscous circle in which both reinforce each other. However, it could be shown that more research is required to investigate the critical relationship and dual role of job dissatisfaction and employee silence.

The results of the SEM also revealed that *work engagement* ($\beta = -0.13, p < 0.001$) was negatively related to *employee silence*. Multiple studies have proven the validity of the JD-R theory explaining the relationship between work engagement and certain outcomes such as burnout or well-being (e.g. Bakker & Demerouti, 2007; Hakanen et al., 2006). In contrast, scholars examining the relationship between work engagement and silence behavior are rather scarce. First, Milliken et al. (2003, p. 1473) suggested that employee silence might lead to disengagement among employees. Also from a conceptual perspective, van Dyne et al. (2003, p. 1360) specified one of three particular types of silence and voice as “disengaged behavior based on resignation”. With this definition, van Dyne et al. (2003) linked the concepts of disengagement and acquiescent silence since the underlying motive of acquiescent silence reflects disengagement and self-protection as passive natures of behavior. The first empirical study investigating this relationship revealed that job engagement could reduce cooperative silence (Knoll & Redman, 2016, p. 837). Those outcomes of the present SEM could significantly support the effect of work engagement on employee silence ($\beta = -0.13, p < 0.001$). The results are therefore not surprising, in the sense that employees who show high levels of job engagement as an extra-role behavior are characterized by “high levels of energy and high levels of involvement in work” (Bakker et al., 2011, p. 22). According to W. A. Kahn (1990, p. 694), due to their high level of engagement, these employees are rather willing to “employ and express themselves physically, cognitively, and emotionally”. Therefore, employees who display high levels of work engagement rather engage in voice than silence. However, no research examined the reversed interrelation between work engagement and silence behavior. In this regard a viscous circle between both constructs reinforcing each other can be assumed as well.

Next to job demands, also certain *job resources* seemed to have an impact on *employee silence* via motivational factors. In the past, empirical studies have investigated the effects of organizational contextual factors such as managerial openness and trustworthiness, or even different leadership styles on employee silence (e.g. Guenter et al., 2017; Milliken et al., 2003; Monzani et al., 2016; Morrison & Milliken, 2000; Vakola & Bouradas, 2005; Xu Huang et al., 2003). Within their groundbreaking paper, Morrison and Milliken (2000) provided a comprehensive list of organizational conditions under which organizational silence most likely prevails. In this regard, managers are considered to play a very central role within the development of silence as they (1) fear negative feedback mostly from followers and (2) hold a set of implicit beliefs about their subordinates.

Morrison and Milliken (2000, p. 708) argued that for this reason managers try to avoid receiving employees' negative feedback by ignoring the information but also questioning the credibility and accuracy of the information and source (subordinates). In addition, managers often assume that their subordinates try to maximize their individual benefits and are therefore self-interested and untrustworthy (Morrison & Milliken, 2000, pp. 708–710). Thus, from a conceptual perspective, it can be argued that managerial beliefs contribute to the development of organizational silence. Building on this, further empirical studies could show that managerial openness, ethical leadership and formal employee involvement could reduce the levels of organizational silence (Wang & Hsieh, 2013; Xu Huang et al., 2003). However, with respect to the present study, further research focusing on the effect of authentic leadership on organizational and employee silence was conducted.

Firstly, Monzani et al. (2016) tested empirically the joint effect of authentic leadership and organizational identification on employee silence responses (exit, loyalty and neglect). The results revealed that subordinates led by highly authentic leaders engaged less in silence responses. In addition, Guenter et al. (2017) showed within their empirical study that authentic leadership decreased the level of employee silence, especially for employees with less proactive personalities and behaviors,

but with less effect on proactive employees. This leads to the conclusion that employees with high proactive personalities would speak up regardless of the leader's characterization. In contrast, the silence of employees with rather low proactive personalities could be broken when led by authentic leaders. With respect to the results obtained in this study, organizational silence was reduced by work engagement ($\beta = -0.13, p < 0.001$), which in turn was increased by authentic leadership ($\beta = 0.14, p < 0.001$). Based on these findings, authentic leadership might have a direct impact on decreasing employee silence, but an engagement process might be intermediary. This highlights the capability of authentic leaders for engaging and activating employees that are silent for various reasons. Consequently, the engaging process may especially be important as an intermediate before directly decreasing the undesired behavior of employee silence.

The discussion regarding the interplay between authentic leadership, work engagement and employee silence revealed that organizations can affect the decision of employees to withhold relevant information. Organizations heavily rely on the communication of ideas, concerns, and opinions especially in cases of transformational processes. Therefore, the *innovative behavior* of employees can be considered as crucial for the successful implementation of new business models. However, studies have shown that silence can take a psychological toll on employees, inducing anger, stress, and discontent, which impairs the individual's creativity and productivity (Cortina & Magley, 2003; Knoll & Dick, 2013; Perlow & Williams, 2003). Based on Morrison and Milliken (2000), also Knoll and Redman (2016, p. 841) stated that silence may have a decreasing impact on creativity and learning of employees and by this reason stressed the importance of mechanisms that provide the opportunity for individuals to communicate their views, ideas and suggestions.

However, only a few empirical studies have investigated the relationship between creativity or innovative behavior and organizational silence. For instance, Guo et al. (2018) found out that especially dark leadership styles such as authoritarian

leadership impede employees' creativity. They argue that those leaders induce fear among employees which in turn results in defensive silence behavior (Guo et al., 2018, p. 226). As a result, the creativity and innovativeness of employees as a critical source for the success and survival of companies are undermined. Furthermore, the empirical study of Chenji and Sode (2019, p. 366) revealed that defensive silence mediates the relationship between workplace ostracism and employee creativity. In summary, existing studies have shown that organizational and employee silence may have a negative effect on employees' creativity and innovative behavior. Nevertheless, the existing conceptual and empirical research body investigating this highly relevant relationship, is very limited.

Surprisingly, the results of the present study brought to light that there is a significant but weak positive impact of employee silence on employees' innovative performance ($\beta = 0.05$, $p < 0.001$). This leads to the assumption that especially employees with high levels of innovative performance tend to remain silent. This observation also accounts for the impact of quiescent silence ($\beta = 0.05$, $p < 0.001$), and especially for acquiescent silence ($\beta = 0.07$, $p < 0.001$) on innovative performance. To provide an explanation for this, Milliken et al. (2003, p. 1462) argue that being creative and innovative goes beyond the daily work task requirements and job description, hence employees deliberately decide whether to engage in such an extra-role behavior or not. In doing so, employees considerably weigh up the opportunities, risks and efforts involved in speaking up, also with regards to their perception and evaluation of the current (organizational and personal) situation but also based on experiences gained in the past.

Those considerations and empirical finding of the present study lead to the conclusion that employees with high levels of innovative performance remain silent due to fear or resignation. With respect to fear, employees may decide to withhold their ideas, suggestions, and concerns in order to not be labelled as troublemaker or complainer (quiescent silence). Moreover, those employees may also be afraid of embarrassing and damaging relationships to colleagues and supervisors (prosocial

silence), or to receive retaliation or punishment when communicating ideas, concerns, or problems openly (quiescent silence). On the other hand, the finding regarding acquiescent silence indicates that employees with high levels of innovative performance remain silent due to resignation. This might be due to former bad experiences made and feelings of futility through the belief that speaking up will not make any difference and the person to which the information is directed (e.g. supervisor) will not be responsive. This vicious circle manifests the choice of being silent rather for innovative employees as they already tried to initiate and to implement changes within the organization without the intended and satisfying impact. This result is very precarious for one specific reason: it is precisely these innovative employees that are crucial and indispensable for any type of organizational change process such as the successful implementation of disruptive business models. On the bright side, considering the relationship between authentic leadership, work engagement and employee silence, leaders do have the ability to create high levels of work engagement and to engage and to reactivate innovative employees that are silent due to fear and resignation.

IV.4 Interim Conclusion

In summary, the results of the empirical study (SEM) provided multiple contributions from a theoretical and research perspective. On the one hand, the findings supported the validity and explanatory contribution of the JD-R model and TPB. With focus on the JD-R model, the inherent logic of the dual pathways (health impairment and motivational process) and the buffering effect between job demands and job resources were empirically proven. This also underlines once more the flexibility, applicability as well as explanatory power of the JD-R model in various contexts, such as in organizational change processes induced by the disruptive transformation of the company's business model. It could be also demonstrated that the validity of the JD-R model (still) accounts for contemporary job challenges and demands. Especially in times of high levels of volatility, uncertainty, com-

plexity and ambiguity, job profiles, work characteristics and demands are changing rapidly and drastically. This fact results in diverse and higher levels of demands but also requires more and different resources for employees to cope with. Consequently, the present study also adds to the limited research on the JD-R model in terms of contemporary challenges.

Furthermore, it was also shown that job dissatisfaction (job satisfaction) and work engagement have a significant impact on employee silence. Whereas job dissatisfaction triggered by low levels of collaboration opportunities within the organizations leads to silence, work engagement reinforced by authentic leadership can reduce the undesired behavior of employee silence. Moreover, it was demonstrated that feedback and support from supervisors through authentic leadership could buffer the negative effect of job demands on job dissatisfaction as strain. On the other hand, high job demands such as low levels of collaboration opportunities led to a negative effect on the motivational factor of work engagement. Those results underline the validity of the dual pathways of the JD-R model as well as the interactions between job demands and job resources.

Furthermore, based on the results gained within this study and with regards to findings of other studies discussed, job satisfaction and work engagement could be considered as antecedents but also effects of employee silence, even indicating a vicious circle of those constructs. Most surprisingly, findings suggested that creative and innovative employees rather remain silent due to fear and resignation. This has most relevant implications for organizations undergoing transformation change processes as the knowledge and innovativeness of those employees are key for the intended success. From a conceptual and theoretical perspective, this result also emphasizes that innovative employees do have something to say and to contribute, and due to this fact, their silent behavior should not be confused or misinterpreted with the absence of voice by attributing wrong motives to the behavior. This is also supported by the empirical result of this study examining the relationship between acquiescent silence and innovative behavior. The findings clearly

show that those innovative employees deliberately withhold their ideas, suggestions, and concerns as they do not find an open ear within the organization (resignation). Consequently, it can be stated, that silence is not a “non-behavior” (van Dyne et al., 2003, p. 1364), but is rather driven by certain underlying motives. Therefore, it can be concluded that silence is not the absence or just the opposite of voice (van Dyne et al., 2003, p. 1359) as suggested for a long time. Compared to most conceptual works that were dealing with the question whether silence is more than the non-existence of voice (e.g. Knoll & Dick, 2013; Pinder & Harlos, 2001; Tannen, 1985; van Dyne et al., 2003) this present study could prove this assumption empirically.

Moreover, and in alignment with other empirical studies, it was demonstrated that employees can be activated and engaged through authentic leadership, which in turn (engagement) reduces employee silence by breaking the silence of employees. If there would be nothing to say, then nothing could not be activated or engaged.

With regards to the Theory of Planned Behavior (TPB), the results of the SEM revealed that empowerment (perceived behavioral control) had a strong positive influence on employees’ job satisfaction ($\beta = 0.49$, $p < 0.001$), but was also strongly related to work engagement ($\beta = 0.63$, $p < 0.001$) and innovative performance (behavior) ($\beta = 0.65$, $p < 0.001$). In addition, organizational values (subjective norms) weakly decreased the innovative performance of employees. These findings lead to multiple conclusions: first, in addition to the JD-R model, the logic, directions and pathways of the TPB could also be supported. Secondly, the results also contributed to the assumption that perceived behavior control plays the most important role in terms of behavior involvement as it revealed the strongest relation to the actual behavior (innovative performance; $\beta = 0.63$, $p < 0.001$), compared to subjective norm (organizational values; $\beta = -0.08$, $p < 0.001$) and attitude (employee silence; $\beta = 0.05$, $p < 0.001$). This also underlines the expanded explanatory contribution of the TPB due to the integration of perceived behavioral control in contrast to the Theory of Reasoned Action (TRA).

Focusing on the interface variables linking the JD-R model and the TPB, the added explanatory value and validity of both blended theories could be emphasized as well. As indicated by the hypotheses of the SEM, the JD-R model helps understanding the evolvement and shaping of attitudes as an antecedent of the construct of behavior (TPB) via the health impairment and motivational process (dual pathways of the JD-R model). These insights clearly show the complex development and manifestation of attitudes, not just through the interplay between job demands and strain as well as job resources and motivational factors, but especially through the interactions between job demands and job resources. In addition, the findings also accentuate that empowerment as perceived behavior control showed a strong impact on the health impairment process and motivational process of the JD-R model. Similar to the buffer effects within the JD-R model outlined before, empowerment was buffering job satisfaction ($\beta = 0.49, p < 0.001$) and work engagement ($\beta = 0.63, p < 0.001$) as well. Consequently, empowering individuals within organizations helps reducing job dissatisfaction and increasing work engagement, which in turn helps decreasing the undesired behavior of employee silence. Therefore, empowerment as perceived behavioral control plays an indirect role in the development of silence within organizations and can be critical in reducing or even preventing it. Consequently, organizations are not just capable of deriving concrete measures to deal with employee silence along the logic of the JD-R model but also partially through the TPB. In that sense, the combination of both theoretical lenses as well as the overall insights of the empirical study underlines the mere importance of empowerment by its effect sizes compared to all other constructs examined within the SEM.

V. Conclusion and Outlook

Within the next chapter, the findings of the entire thesis are recapitulated, and the contribution of this work is outlined with reference to previous research efforts in the field of organizational and employee silence (V.1). Against this background, both limitations of the thesis (V.2) as well as implications for practice (V.3) and theory (V.4) will be derived.

V.1. Summary of Key Findings

The overall aim of this study was to empirically investigate the role and relevance of organizational and employee silence in the context of change processes induced by the implementation of disruptive business models. In this regard, the present thesis contributed to the existing research body on voice and silence behavior in the organizational context. As outlined within the interim conclusion of the empirical investigation (IV.4), the phenomenon of organizational and employee silence takes on a high significance in organizations and has shown to be very relevant. From a synoptic macro perspective, the results and contribution of (1) the *comprehensive systematic literature review*, (2) the *combination of both theories (JD-R model and TPB)*, (3) the *preliminary qualitative pre-studies*, and (4) the *quantitative examination (SEM)* have clearly shown the high level of complexity and importance that this particular phenomenon is associated with. With justification, research on silence has emancipated itself from the voice literature as an independent research stream since the groundbreaking publication of Morrison and Milliken (2000). Since that, many scholars in management science have and still create – with increasing tendency – high value contributions for both organizations and individuals.

The (a) conclusion of the *comprehensive systematic literature review* (chapter I) demonstrated that silence has proven to be a distinct and valid multidimensional construct that is rather complex to measure and therefore also scientifically defiant. Due to those reasons but also due to its tremendous (negative) effects on or-

ganizations and their employees, it has become more and more attractive for researchers to examine. Therefore, many calls for further research have been seized over the last years (e.g. Guo et al., 2018; Knoll & Dick, 2013; Knoll & Redman, 2016; Milliken et al., 2003; Vakola & Bouradas, 2005), and the current research on silence is steadily growing. As a result, empirical papers that have been published recently highlighted the relevance of this behavior by examining its antecedents and effects from more diverse angles and against different backgrounds. Nevertheless, many research gaps and blank spaces on the scientific “landscape of silence” are still existing and multiple important issues have not been addressed yet.

Thus, the purpose of this thesis was to contribute to the overall research area of organizational and employee silence by providing an overview of the current state of research based on the prework of Brinsfield et al. (2009), which captured voice and silence constructs up to the year 2005. The presented literature review did not only summarize the existing literature on silence and partially voice based on the groundwork of Brinsfield et al. (2009), but also structured and outlined the most recent and relevant research achievements gained over the last 15 years. In doing so, the chronologically-designed framework of Brinsfield et al. (2009) was extended by a *fourth wave of silence*, capturing selected research efforts in the domain of organizational and employee silence. In this context, the conduction of the systematic literature review according to Randolph (2009) focused on further determinants: (1) tracing back the phenomenon of silence, (2) providing a clear distinction between silence and voice, (3) understanding the multidimensionality of the construct, (4) revealing applied theories and methodological approaches, (5) identifying recent research efforts and foci, and finally (6) deriving a research gap to be addressed by this thesis. Therefore, the literature review conducted did not just help setting up the stage for the present research work, but also contributed to the derivation of concrete implications for practice and theory (V.3 and V.4).

Next to the comprehensive literature review on organizational and employee silence, (b) the conduction of *two pre-studies* through an explorative approach (ex-

pert interviews) aimed at investigating the role and relevance of silence in certain work environments. Those environments were characterized by disruptive change processes (pre-study 1) but also high demanding working conditions (pre-study 2). The results of the qualitative content analyses revealed that silence can be considered as an organization-wide phenomenon and that it takes on a critical role within different organizational setups (i.a. banks, industry, hospital). The findings were also in line with previous research studies and mainly supported findings of other scholars (e.g. Pinder & Harlos, 2001; Vakola & Bouradas, 2005; van Dyne et al., 2003). First, it could be shown that silence manifests itself as a multidimensional construct with certain sub-constructs (acquiescent, quiescent, prosocial, and opportunistic silence). Second, the underlying motives of silence proposed by van Dyne et al. (2003) could be confirmed as well. Third, the expert interviews of both pre-studies also emphasized in that context the assumption that silence is not merely the absence or opposite of voice, but rather a result of a deliberate decision the individual makes due to distinct motives. Relating to those motives, fear, resignation, or team cohesion have especially played a critical role and expressed themselves in quiescent and acquiescent silence. Once silence has established itself in resignation or through fear, it requires a lot of effort and time from the entire organization and their leaders to break the decision of employees to remain silent. However, it was also shown that employees' ideas, concerns, and suggestions are highly relevant not only for organizations that undergo disruptive transformation processes, but also for organizations that are characterized by high working demands or strict hierarchical structures. Those underlying patterns and mechanisms might also apply for many other organizations. To summarize, both qualitative pre-studies have added to the existing literature on silence based on their outcomes and on the application of a research perspective. Furthermore, the pre-studies also contributed to the required intensive factual logical considerations in alignment with the literature review as a prerequisite for the development of the SEM and its hypothesized relationships (Backhaus et al., 2006).

In addition to the literature review and qualitative pre-studies conducted, (c) the application of the *JD-R theory and TPB*, especially the combination of both theoretical lenses helped to fundamentally understand the evolvment (antecedents) of silence and its effects. The strong theoretical foundation through the combination of the JD-R model and TPB allowed on the one hand to derive theoretically hypothesized relationships for the SEM (Backhaus et al., 2006), but on the other hand to also critically interpret the empirical results. Because in previous silence research those two theories had not received much attention and have only rarely been applied – and never in combination. In contrast, the empirical study of this thesis was able to underline the explanatory contribution of both theories independently from each other, but especially in their combination. Moreover, the empirical findings also revealed that the combination of the JD-R model and TPB along their theoretical lenses and underlying assumptions created a more promising blended theoretical construct that could comprehensively explain the development and impact of organizational silence. The validity and explanatory power of the theoretical framework also emphasized the general assumption that the evolvment process of silence behavior is rather complex. Nevertheless, the analysis of the theoretically-hypothesized relationships through the empirical data revealed that the development and outcome of employee silence can be statistically predicted. Furthermore, the empirical examination also confirmed certain theoretical assumptions of the JD-R theory, such as the mechanism of the dual pathways, the interaction between the health impairment and motivational process (“buffer effect”) as well as its flexibility and applicability with respect to contemporary settings (e.g. organizational change processes induced by business model transformation). Lastly, the findings of the SEM also underlined the relevance of the TPB in explaining the evolvment of certain attitudes (employee silence). On the other side, the empirical findings also confirmed the suggestion of other researchers that perceived behavior control (empowerment) has the most dominant impact on behavior, compared to subjective norm (organizational values) and attitude (employee silence).

Finally, the aim of the (d) *empirical investigation (SEM)* was to examine the role and relevance of employee silence by analyzing the hypothetically-derived relationships between certain constructs causing and resulting from silence behavior. The design, structure and logic of the developed SEM was based on intensive factual logical consideration (systematic literature review and pre-studies) on the one hand and along the combination of the JD-R model and TPB on the other hand. Concerning the antecedents of employee silence, the results of the SEM (n = 4,527) demonstrated that job dissatisfaction significantly increased employee silence, whereas work engagement significantly decreased silence behavior. With respect to the direct influential factors causing employee silence, it was also shown that certain job demands (collaboration) and job resources (authentic leadership) significantly influenced the antecedents of silence, even with certain buffering effects. These results also confirmed the dual pathways of the JD-R model as well as the interaction effects between job demands and resources suggested by the literature. Moreover, the study also revealed that employee silence showed a weak positive, but significant relation to innovative performance. This indicates that especially innovative employees may remain silent due to fear (quiescent silence) and resignation (acquiescent silence). Therefore, the assumption that silence is more than just the absence or opposite of voice could be supported empirically as well. Finally, the outcomes of the empirical study supported the structure and path mechanisms of the TPB and also highlighted that empowerment (perceived behavioral control) was the strongest predictor for innovative performance, compared to organizational values (subjective norm) and attitude (employee silence). The empirical evidence that empowerment also had a strong and significant impact on both job satisfaction and work engagement provided support for the explanatory contribution of the combination of the JD-R and TPB. In addition, the JD-R with its dual pathway could contribute to the understanding of how attitude, as a key element of the TPB (organizational silence), is being shaped and influenced, which in turn had an impact on the behavior construct of the TPB (innovative performance). To summarize, the SEM, as well as its significant and highly relevant

findings, emphasized the complex evolvement and forming of the multidimensional construct of employee silence. Most of the empirical results presented were in alignment with the research analyzed through the literature review and pre-studies conducted. Nevertheless, many variables integrated within the SEM have not been investigated by other research work so far. This accounts especially for the examination of the JD-R's pathways and their directions as well as constructs such as innovative performance. Consequently, this thesis provided valuable contributions to the existing research body of organizational and employee silence through the following achievements and initiatives: (1) comprehensive literature review, (2) qualitative based pre-studies, (3) combination of theories as a foundation for the SEM as well as (4) the conduction of a globally-wide empirical quantitative study (SEM).

V.2 Limitations of the Thesis

Like any other research study, this thesis also has certain limitations. As outlined before, the overall purpose of this thesis aimed at examining the role and relevance of organizational and employee silence within organizations undergoing radical transformation processes. However, as the particular research field on silence can be considered rather young and many calls for further research initiatives remained unaddressed, the process of the conceptualization and implementation of this thesis, as well as the analyses of its findings, are associated with certain limitations.

Based on that, the following chapter is addressing the subsequent limitations:

- a) Limitations regarding terminological foundations
- b) Limitations regarding the literature review conducted
- c) Limitations regarding the combination of the JD-R theory and TPB
- d) Limitations of the empirical investigations and explanatory power

Following the completion of those criteria, implications for research and practice will be derived.

a) Limitations regarding terminological foundations

For quite some time, the terms of employee silence and organizational silence have been used interchangeably by many authors within the literature. Using different terms for referring to the same phenomena was quite widespread, even in the period before and after the groundbreaking publication of Morrison and Milliken (2000) who defined organizational silence as a widespread collective-level phenomenon through which employees intentionally decide whether or not to communicate concerns, information, or opinions with regards to job-related problems or issues.

Until the silence literature established itself distinct from the voice literature, the behavior of silence was simply defined as the absence of voice or labelled as “not speaking up” (Morrison & Milliken, 2000, pp. 707–708). In this context it should also be mentioned, that until that point, scholars had not only partially used an inappropriate terminology to describe the phenomenon of silence, but also misinterpreted the concept and its underlying motives which distinguish silence from voice. Even though Pinder and Harlos (2001) introduced the term of employee silence shortly after the publication of Morrison and Milliken (2000), and van Dyne et al. (2003) additionally provided a clear distinction between voice and silence, the subsequent literature has not always used the correct terminology in the respective context. Nevertheless, with the development of corresponding scales and items for measuring employee silence (e.g. Brinsfield, 2013; Knoll & Dick, 2013), a much more stringent use of the correct terminology could be observed.

However, this work intended at ensuring the correct application of terminologies in alignment with the definitions provided (Milliken et al., 2003; Morrison & Milliken, 2000; Pinder & Harlos, 2001; van Dyne et al., 2003), especially in the context of the empirical examinations. Still, within the interpretation and discussion paragraphs of the empirical outcomes, the distinction between organizational and employee silence was associated with certain challenges. Even though Pinder

and Harlos (2001) labelled employee silence as an individual behavior and Morrison and Milliken (2000) defined organizational silence as a widespread collective-phenomenon, when aggregating and analyzing empirical data, the distinction between both concepts can be challenging. This is because there are no clear criteria existing to determine at what degree of dissemination and penetration silence can be considered as an individual (employee silence) or collective (organizational silence) phenomenon. Therefore, the challenge to always use the correct terminology also arose in this thesis, especially when presenting and discussion the empirical results of the qualitative and quantitative study. Particularly, as both empirical investigations – qualitative and quantitative – measured predominately the phenomenon of employee silence. Just at a certain point of reference (level of dissemination and penetration) the individual silence behavior (employee silence) was aggregated and re-operationalized as an organizational-wide phenomenon. For instance, within the qualitative study, interviewees mainly reported about reasons why they remained silent and described situations in which they decided to better not speak up. They also stated to have observed similar behavior of colleagues or supervisors in their working environment, which also accounted for employee silence. However, due to the frequency and severity regarding the observed and perceived behavior of employee silence, an aggregation of the single behaviors could be performed on a macro level and therefore organizational silence could be suggested. This also accounts to the quantitative study as the scale and items of Knoll and Dick (2013) were applied to measure employee silence, but due to the high levels of dissemination and penetration of employee silence, the existence of organizational silence within the organization analyzed was implied. However, since a precise definition regarding the transition from the aggregation of employee silence to organizational silence – independently from the effect of organizational factors such as norms, policies or structures – is still missing, certain vagueness in the respective application of both terminological terms may also occur in this thesis – even when trying to ensure the highest levels of terminological correctness.

b) Limitations regarding the literature review conducted

The systematic literature review of this thesis focused on providing a comprehensive overview of how silence and partially voice have been examined from the past to the present day. To ensure a comprehensive and unbiased examination of existing research in that particular research field, a systematic literature review methodology according to David and Han (2004) and Newbert (2007) was applied. Based on this methodology, the final sampling and data collection process included 19 concrete steps (see chapter I.2.3). Through that process and an exhaustive with selective citation coverage of literature, the review offers a comprehensive overview of research outcomes (Cooper, 1988).

However, despite the rigorously applied methodology, the results of the systematic literature review may show certain limitations. First, the sample presented cannot be considered fully exhaustive from a coverage perspective, since it includes only selective citations (Cooper, 1988). This could include the risk that the selected databases (i.a. Web of Science Core Collection and EBSCOhost Business Source Ultimate) did not reveal all possible studies that were conducted and published in the field of silence and partially voice (criteria 1). However, due to the representativeness and high recognition of the selected databases in the scientific community, the sample identified and evaluated can be considered as representative for the actual purpose of this literature review. In addition, papers that did not fit the criteria according to the selection process, but showed though some relevance, were listed separately.

Second, the selection and application of different primary keywords (criteria 5), additional keywords (criteria 6) and methodological keywords (criteria 7) from the ones chosen within this literature review would have potentially revealed different relevant articles. However, the selection of keywords (criteria 5, 6, 7) was performed in close alignment to the actual purpose and context of this study as well as to the overall research question stated. Therefore, certain keywords (e.g. psychotherapy, sexual harassment, politics, news media) that are also linked to the inves-

tigation of the phenomenon of silence behavior – but mainly examined in different research domains – were excluded (criteria 12). Consequently, the replication of this literature review with different selection criteria, keywords or scope may result in different articles. However, the review never aimed at being exhaustive and therefore considering every paper that has been published in the wider context of the research field addressed. Third, the replication of this literature review may also differ with respect to further selection criteria applied, such as the focus on certain research methods (qualitative, quantitative, mixed methods), additional dependent and independent variables, language, quality criteria (e.g. journal ranking), or other domains and fields of research contexts (e.g. nursing literature).

Consequently, the outcomes and suggestions derived from the literature review as well as its attempt to provide an up-to-date overview of the latest literature on silence and partially voice (current wave) are therefore not intended to be exhaustive or absolute.

c) Limitations regarding the combination of the JD-R theory and TPB

The combination of the Job Demands-Resources (JD-R) model and the Theory of Planned Behavior (TPB) according to the degree of proximity and their underlying assumptions aimed at gaining a broader and deeper understanding of the theories' specific mechanisms and underlying aspects. Following the call for “scholarship that matters” from Özbilgin (2010) and Cummings and Worley (2008), blending both theories were supposed to provide a theoretical foundation that would reflect the management's reality and also capture the complexity of organizational and employee silence as rather scientifically neglected research constructs. As mentioned by Okhuysen and Bonardi (2011), the combination of theories is not an act of coincidence, but a thoughtful consideration of theory-specific determinants that reflect the relationship between the lenses combined.

In this regard it should be mentioned that this thesis can be considered as the first one – to our knowledge – to make the attempt to combine the JD-R theory and

TPB. However, the combination of theories is also associated with certain challenges. First, generating a coherent explanation for the considered phenomenon requires to properly bridge the theoretical lenses. Second, the considered theories might compete against each other. Third, through the analyses of the theories' strengths and weaknesses, certain identified areas might not necessarily be incompatible but rather mutually supportive. And last, the combination process also requires one's own ontological process. With reference to this thesis, the limitations, and critics of the JD-R theory (limitation of one-sidedness, simplicity, static manner, and changing nature of jobs) and TPB (e.g. low level of predictive validity and insufficient variability in behavior) had to be considered regarding the blending process. For example, the known weakness of the TPB just providing enough sufficient information when motivation and opportunity to perform the desired behavior are high (Conner & Armitage, 1998), could have been compensated by the integration of the JD-R and its dual-pathways.

However, from a purely theory-based line of reasoning, the operationalization of the JD-R theory's outcome variable (performance) as the attitude variable of the TPB could be criticized. Certain studies investigating the dual-processes of the JD-R theory mainly operationalized behavior-focused variables as the model's outcome variable, such as work engagement (Bakker et al., 2007; Hakanen et al., 2006), job burnout (Bakker et al., 2005; Bakker et al., 2008; Demerouti, Nachreiner, et al., 2001), connectedness (Lewig et al., 2007), work enjoyment, or organizational commitment (Bakker et al., 2010). In this context it might be argued that attitude as the interface variable connecting both theories does not follow the operationalization of other studies. However, the empirical results of this thesis (SEM) showed that the JD-R model can also predict attitude-related behaviors such as employee silence, which finally can transform into other behaviors. In this context, the statistical outcomes have shown that the TPB can explain the formation of other behaviors such as innovative performance resulting from attitudes, subjective norms, and perceived behavioral control. In addition, it should be men-

tioned that the final SEM framework – based on intensive factual logical considerations and the combination of both theoretical models (JD-R model and TPB) – did not consider and therefore measure the variable of intention proposed by the TPB. Due to the setup of the empirical investigation in cooperation with an organization, the integration of an additional variable measuring intention was not possible. Therefore, within the empirical investigation (SEM) just the direct impact of attitude (employee silence), subjective norm (organizational values) and PBC (empowerment) on the behavior (innovative performance) – and not through the construct of intention – was measured. However, the integration of an intention-variable could have gained further relevant insights, especially to distinguish the (direct/in-direct) effect sizes of the TPB's antecedents on intention and behavior.

d) Limitations of the empirical investigations and explanatory power

In addition to the limitations regarding the combination of the JD-R theory and TPB outlined, further limitations can be stated with reference to the empirical investigations of this thesis and the associated explanatory power of the findings. In the following section, potential limitations concerning the quantitative examination (SEM) will be discussed, followed by limitation of the qualitative study (pre-studies).

As mentioned before, the SEM and the corresponding hypotheses derived were based (a) on intensive factual logical considerations (systematic literature review) and (b) on a sound theoretical foundation (combination of JD-R model and TPB). As the empirical study was conducted in cooperation with an organization, the selection and integration of (in-)dependent variables – solely self-reported – into the quantitative survey were also conditional to certain internal regulations and requirements. This included specifications from the works council such as the preliminary review of each item-set regarding too critical and sensitive questions to the respective employees. As a result, two questions had to be excluded from the final survey. As already mentioned in the section above, the construct of intention

(TPB) could also not be integrated into the final SEM. However, all items considered showed sufficient composed reliability values with reference to the cutoff criteria (>0.7) set. Still, one could argue that without the exclusion of those certain single questions, the composite reliability values of the respective item sets would be even more robust. Also, the top management of the cooperation partner required to integrate certain “bridging questions”, which allowed to derive desired managerial implications and to perform benchmarking analyses with reference to the survey conducted in the previous year. Due to these reasons, the items measuring collaborative behavior as well as organizational values were provided by the cooperation partner. Although those particular items were designed by the organization, they fulfilled the required composite reliability criteria ($0.919 > 0.7$). Since these items have not been applied and tested in former scientific studies and different organizational setups, one could argue that certain limitations regarding the validity of those items could exist. However, the results of the SEM revealed high levels of significance – with one exception (relationship between collaboration 3 and work engagement).

Furthermore, at the instruction of the works council and management, the measurement of the JD-R theory’s health impairment process via job dissatisfaction (strain) resulting from certain job demands had to be changed due the negative connotation and association of the job dissatisfaction construct. For this reason, instead of job dissatisfaction, the construct of job satisfaction was measured within the quantitative survey. However, as outlined in chapter III.5 (deduction of hypotheses), multiple studies (e.g. Aldeeb & El-Demerdash, 2016; Bakker, 2010; Balouch & Hassan, 2014; Galletta et al., 2016) have shown that low levels of collaboration or even the non-existence of collaboration opportunities have a decreasing effect on employees’ job satisfaction. Therefore, the original line of argumentation had to be adapted according to the JD-R theory, which is supported by scientific studies as outlined above. Nevertheless, it should be mentioned that the operationalization of job satisfaction cannot be considered as the exact opposite of job

dissatisfaction (see Alshmemri et al., 2017; Herzberg, 1966). In this regard, potential inaccuracies can be mentioned as limitations. Nevertheless, the results of the empirical investigation (SEM) support the expected relationship between the adapted job demand and strain constructs as proposed by the JD-R theory.

Referring to the extensive data set of the study, it can be argued that additional statistical analyses could have been performed. This concerns the evaluation of (a) employee-related information such as the language (German, English, French, Chinese) and therefore the potential cultural background, (b) the temporal affiliation of employees to the organization, or (c) the employees' organizational assignment (e.g. clustering per department) and (d) status within the organization (contract workers, full-time employee, managers). Based on this additional information, further examinations such as the analysis of the relationship between the cultural background of employees – by inferring the language selection in the survey – and certain variables (e.g. employee silence) could have been executed. In addition, comparative cluster analyses (e.g. on team level) could have been conducted by using the organizational assignment, tenure and status of employees. In this context, it should be mentioned that these potential analyses would also be associated with certain limitations and inaccuracies. For instance, one could criticize whether the mere language selection within the survey would allow to draw valid conclusions about the cultural manifestation of the respective employee. Indeed, the fact that employees have been working and living in a different cultural context for some time might challenge the assumption that they would necessarily answer the survey in their native language. Therefore, it would not be possible to accurately derive cultural backgrounds simply from the provided survey data. However, further research into whether employees with long affiliation (tenure) to the company or employees with a certain status (e.g. contract workers) would rather tend to remain silent due to certain reasons (e.g. development of high levels of resignation over time or certain fear of new hires) would have been of interest.

First, from an empirical perspective and in addition to the structural equation model (SEM), a phantom model approach according to Macho and Ledermann (2011) could have been performed. This approach aims at assessing specific indirect affects which bypass the restrictions that are enforced by SEM programs. This allows to robustly test specific mediation hypotheses based on bootstrap practices in the scope of a conventional covariance structure framework (Perera, 2013, pp. 45–46). It could be argued that the provided SEM within this thesis displays certain limitations in this regard as no further measures such as the phantom model approach Macho and Ledermann (2011) were applied to test specific mediation hypotheses.

Second, it could be argued that the robustness of the SEM is strongly supported and actually enabled by the extensive data sample. Nevertheless, the hypothesized relationships in the model not only show significant results (with one exception), but also emphasize their justification as they reflect the proposed path directions of the respective theoretical model (combination of the JD-R theory and TPB).

Thirdly, in addition to the merely measurement of innovative performance within the SEM as an effect variable of employee silence, the examination of further relevant outcome variables would have been interesting. However, as the survey was designed and conducted in collaboration with a cooperation partner, the integration of constructs and items were limited due to certain restrictions (e.g. scope and time to complete the survey) given by the works council as well as the corporate management.

Furthermore, the survey conducted can be only considered as a cross-sectional study and not a long-term study. Therefore, although the data of the survey and thus relevant insights were collected in the midst of the actual organizational transformation process, it is still only a selective measurement of the behavior and the collection of perceptions of the organization's employees. Repeated measurements such as longitudinal studies could have been used in this context to assess, evaluate, and interpret both trends and the effectiveness of possible measures to reduce

organizational and employee silence as well as to increase the innovative performance of employees. However, based on the collaboration agreement with the cooperation partner the conduction of a long-term study was not possible.

Finally, and with respect to the qualitative pre-studies, the issue of theoretical saturation should be addressed as one potential cause for limitations. Multiple scholars have argued that the term of theoretical saturation became quite blurred. Therefore, different opinions regarding the necessary number of interviews to be conducted to reach the desired theoretical saturation are prevalent. According to Guest et al. (2006), the conduction of 12 interviews with a homogeneous group is sufficient to reach saturation. As both pre-studies focused on different target groups and conducted relevant data in multiple different environments, the required number of interviews within one homogenous group ($n = 12$) was not reached. Each pre-study of this thesis included just eight interviews per homogeneous group (e.g. nurses within the context of hospitals). Consequently, the required level of theoretical saturation according to Guest et al. (2006) was not reached. However, both qualitative pre-studies attempted to gain first relevant insights into the topic of organizational and employee silence in an explorative manner. In doing so, the general relevance of the topic was aimed to be validated. However, the results of both studies revealed significant outcomes that also showed to be in alignment with the theory proposed and other research papers discussed. Therefore, even though the required level of theoretical saturation was not reached, the results of the qualitative studies provided helpful and relevant information for the entire thesis.

In addition, all interviews of both pre-studies were conducted and translated in German. However, the quotes used within the result presentation of the qualitative study (chapter II) were translated into English. Even though the translation process from German into English was carried out with the utmost care (forward and backward translation), the loss of some linguistic nuances cannot be completely ruled out. Furthermore, the interview guidelines presented in the Appendix 2 and 3 were also translated from German into English for the integration into this thesis.

The loss of potential nuances in the language should be also considered as certain limitations of this research work.

V.3 Implications for Practice

Based on both empirical studies, implications for practice and management can be derived. It has been shown that organizational and employee silence, defined as withholding relevant ideas, information, and opinions, can be considered as a widely spread phenomenon in organizations that goes beyond the mere absence of voice. The findings also emphasize the high relevance of this topic for organizations and employees. In this context, previous studies underlined that silence can be considered as a critical barrier for organizational change and transformation. Within the following chapter, potential implications for practice will be derived to support counteracting these powerful forces operating in organizations by which employees decide to remain silent rather than speaking up (Morrison & Milliken, 2000, p. 721).

Organizations need to implement systems and measures to encourage employees to express themselves openly. However, this requires in the first instance to understand the organization's rules and norms as well as the complex mechanisms and systems that sustain and foster silence behavior. In this regard, the developed SEM and its proposed as well as confirmed relationships could serve as an analytical diagnostic instrument for organizations. The hypothesized-relationships of the SEM have revealed significant results and underlined the validity of the theoretical model (combination of the JD-R theory and TPB). Beyond performing a cross-sectional study that examines the relationship of organizational and behavioral variables at a specific time, the conduction of a repetitive longitudinal study would also reveal trends and the effectiveness of managerial measures implemented. Furthermore, additional relevant (in-)dependent variables (e.g. resistance to change, intention to quit, performance, or digital mindset) that may play an important role for instance within transformational change processes could also be integrated. By

doing so, organizations could benefit from a scientifically valid diagnostic instrument which offers continuous measurements, provides highly relevant insights but also allows to perform causal pattern analyses. Based on those analyses, effective measurements could be derived to reduce the phenomenon of silence within the organization. Furthermore, such a diagnostic instrument would also enable an analysis of the effect mechanisms of sub-forms of employee silence (acquiescent, quiescent, prosocial, and opportunistic silence) (Knoll & Dick, 2013; Pinder & Harlos, 2001; van Dyne et al., 2003). For example, on the one hand, each sub-form could be triggered by different antecedents and also lead to distinct consequences. On the other hand, those sub-forms could own the same antecedents and effects but differ in their path strengths – as shown by the SEM with regards to the relationship of employee silence, acquiescent silence and quiescent silence to job satisfaction, work engagement and innovative performance.

Next to the diagnostic model, the findings of the SEM also provide further practical implications for organizations to reduce the undesired phenomenon of silence. With reference to the health impairment process of the JD-R model, scholars (e.g. Bakker & Demerouti, 2007, 2014; Bakker, Demerouti, Boer, & Shaufeli, 2003) suggested the implementation of certain organizational and managerial measures to reduce mental, emotional and physical demands. Drawing on the quantitative analysis of this thesis, it was shown that very few or even the non-existence of collaboration opportunities lead to higher levels of dissatisfaction, which in turn increases employee silence. Therefore, organizations should integrate communication and collaboration opportunities for employees and their supervisors to encourage voice behavior. On the other side, formal systems can also help exchanging information, ideas, suggestions, or concerns. In this context, Milliken et al. (2003, p. 1474) stated:

“Employees who have ideas or suggestions for improvement who do not feel that they can bring these to their bosses could submit them to a designated person who then presents the ideas for review. This

would serve to create some potentially positive outcomes attached to the passage of ideas for process improvements up the hierarchy to offset what are now seen as potentially negative outcomes of upsetting one's boss or being perceived as critical.”

In this context, Dedahanov et al. (2016, p. 1260) recommend to implement and to establish an organizational ombudsman system which helps reducing silence behavior induced by fear of punishment. The ombudsman system works as a formal system outside of the traditional hierarchy of the organization and guarantees the confidentiality of the individual's information. Therefore, it also allows employees to convey certain information about work improvement ideas and suggestions, but also create a space where employees can voice their dissent on work-related issues and concerns. In addition to the establishment of an ombudsman system, companies should also install further suggestion systems, management meetings in which employees can speak up in an environment of psychological safety, as well as formal grievance procedures. This allows to create a systematic exchange of experiences and knowledge within a safe environment. Increased communication and collaboration opportunities have shown to reduce the strain of employees, and in turn decrease the decision of individuals to rather remain silent than speaking up. Lastly, organizations should foster open door policies and create new work environments that enable open exchange and collaboration opportunities, facilitated by both the management culture and architecture of the office building (e.g. workplace 4.0).

In addition to reducing job demands, organizations can also proactively invest in the job resources of their employees. Drawing on the theoretical foundation (combination of JD-R theory and TPB) and on the findings of the SEM, authentic leadership plays a crucial role in (a) increasing the work engagement of employees and therefore reducing employee silence, but also (b) in buffering the undesired effect of low level of collaboration opportunities (job demands) on work disengagement (strain). In addition to the results of this study, multiple other scholars (e.g.

Dedahanov et al., 2016; Detert & Burris, 2007; Guenter et al., 2017) have addressed the importance of leadership and management in motivating employees and in reducing or even breaking subordinates' silence. When faced with high levels of resignation resulting in acquiescent silence, leaders should demonstrate their interest in the information shared by their subordinates. This can be achieved by honest communication and by offering an open and sympathetic ear for suggested proposals, ideas, or concerns (Knoll & Dick, 2013, p. 355). This also helps reducing the fear of employees of being punished if addressing sensitive topics (e.g. losing job or being not promoted), fear of damaging a relationship (e.g. loss of trust, respect, acceptance and support), but also the fear of being labelled negatively (e.g. as a troublemaker or complainer) which have shown to result in quiescent silence. Therefore, leaders need to provide in addition to the previously discussed organizational measures an environment of psychological safety for their employees where they can speak up and where their ideas, concerns and suggestions are taken seriously. Moreover, leaders have to let appropriate actions follow in response to what was shared, so that it generates more reasons for employees to speak up again in future (Vakola & Bouradas, 2005, p. 453). So, if employees confide in their manager, but no initiatives or changes are following as a reaction, individuals may reconsider their decision and rather withhold information in the future. This could result in a vicious circle that fosters increased levels of silence or even resignation among employees. Yet on the other hand, leaders may also be confronted with organizational barriers which do not allow them to respond to the subordinates' voice by concrete actions as intended. In this case, high levels of authenticity and clear communication to the employees regarding certain intra-organizational barriers are very important. Following Edmondson (2003), leaders should therefore also acknowledge and communicate their own fallibility. On an operative level, organizations need to provide preventive but also post-hoc trainings to their leaders to foster their authentic leadership behavior. In doing so, the work engagement of subordinates can be increased, and job dissatisfaction can be

decreased. This results in an increased level of speaking up behavior and lower levels of employee silence.

Additionally, measures on the team level could also help to increase the job satisfaction and work engagement and therefore engage employees in expressing their voice. As the results of the SEM indicate, employees showing high levels of innovative performance, which is key for the successful transformation of organizations or the implementation of disruptive business models, tend to be rather silent based on their past experiences. Therefore, organizations should have a high interest in reactivating those employees and therefore investing in measures and initiatives that can help unlock the highly valuable information and ideas of those employees. However, all these recommendations regarding organizational measures and changes in leadership behavior must be implemented in a honest and sustainable way. As the studies of this thesis have shown, breaking existing silence within the organization is normally a very demanding, lengthy, and complex process. Moreover, based on their previous experiences and due to highly “sensitive antennas”, employees are constantly analyzing and evaluating every measure and initiative initiated by their organization and leaders.

Lastly, with reference to the TPB and the strong effects of empowerment as perceived behavioral control, organizations should support the empowerment of their employees as it has shown to have a very strong impact on the innovative performance. However, the reality normally provides a rather paradox picture: instead of empowering employees in times in which it is required, such as organizational change process, leaders are rather reluctant to empower their subordinates. Nevertheless, by installing so called “business incubators”, organizations can create an environment of psychological safety for employees to engage in voice and to express their ideas, and at the same time allow leaders to empower their employees within this particular environment, where new concepts and business models can be freely created. However, it should be mentioned that those business incubators

or business hubs can also lead to perceived injustice for employees that cannot profit of and participate in those incubators.

V.4 Implications for Theory

In addition to implications derived for practice, implications for theory and further avenues for research in the field of organizational and employee silence will be drawn. This present study can be considered as one of the first one's investigating the different forms of employee silence provided by Knoll and Dick (2013) in an industrial organizational context. The research model focused on investigating the relationship of job satisfaction, work engagement as antecedents of employee silence as well as innovative performance as its outcome. The findings of the SEM based on a blended theoretical model (JD-R and TPB) offered promising and relevant insights. However, further investigations and examinations regarding the role and relevance of the phenomenon of silence in different contexts and also from distinct perspectives are required. Therefore, the claim for more empirical but also conceptual research is still relevant and the following argumentation set up within the special issue of the *Academy of Management Review* is still valid:

“if the expression of opposition is not welcomed in organizations, then new theories and models that allow for the existence and even the encouragement of divergent viewpoints and expressions are needed”
(Morrison & Milliken, 2000, p. 721).

Therefore, the application of additional (blended) theories to create an even better understanding of the complex dynamics in organizations and their impact and reinforcing power on silence is needed. Within this study, the *combination of the JD-R model and TPB* has proven its relevance by providing significant results and novel findings. Therefore, the theoretical model designed should also be applied in other contexts and organizational environments to retest and validate its explanatory power. In this context, it would be also interesting to measure job dissatisfaction instead of job satisfaction and to compare the results against this present study.

Morrison and Milliken (2000) and Pinder and Harlos (2001) investigated employee silence primarily as a response to certain organizational determinants but also suggested to investigate silence as a cause. Drawing on the dual pathways of the JD-R theory and the mechanisms of the TPB, the results of the SEM of this thesis showed that employee silence is not just a *response* to job dissatisfaction and work engagement, but also a *cause* for job dissatisfaction. This accounts especially for individuals that show high levels of innovative performance. In addition, future studies should also investigate the influence of further organizational behaviors as a potential *causes* and *responses* to silence. In this context, more scientific support for the suggested dual role of certain constructs proposed by Vakola and Bouradas (2005) is needed. The researchers argued that silence climate, silence behavior, organizational commitment and job satisfaction can play a dual role and therefore be both, *causes* and *responses*. This assumption would indicate a vicious circle of constructs reinforcing each other and is also in line with the argumentation of Morrison and Milliken (2000) and Pinder and Harlos (2001) as mentioned above. Indeed, the present study revealed that employee silence is not just *causing* job dissatisfaction and reducing work engagement, but significantly *responding* to both as a depending variable. Hence, the finding is supporting the suggested dual role of Vakola and Bouradas (2005), but more empirical investigation is necessary.

As this study was conducted in an environment of disruptive change, characterized by high levels of uncertainty and fear of employees, more studies should be conducted in *positive* and *benign organizational situations* (Pinder & Harlos, 2001, p. 361). According to the definition of employee silence, withholding information is directed towards work-related improvements and therefore inherits a positive connotation. Thus, it would be of high interest to study organizations with very low levels of employee and organizational silence. This could allow to understand which antecedents predominantly show a strong impact in reducing this undesired behavior and by which concrete measures organizations are preventing its employees to be affected by this phenomenon. Additionally, the performance of *team-*

based studies could also reveal relevant insights. The results of a team-based benchmarking in or outside of the own organizations regarding the level of silence could allow to derive best practices and to transfer learnings across teams and organizations.

Moreover, the study found support for the combination of the JD-R theory and TPB as well as its application in the context of organizational silence and organizational change processes caused by disruptive business model transformation. As to the existing knowledge, this study was the first one (a) combining both theories and (b) to apply and to test the combination in the silence context. The empirical study (SEM) has revealed promising and significant results and therefore also supported the path directions of both theories suggested (e.g. the dual pathways of the JD-R). However, further applications of the combined theory are required, to provide further support for its explanatory power towards employee silence.

Moreover, scholars have largely examined silence behavior through the conduction of cross-sectional studies. However, the implementation of *longitudinal studies* could provide novel insights as certain trends or behaviors are evolving over time. But more importantly, those long-term studies would allow to investigate the effectiveness of specific measures aiming at reducing silence behavior. In this context, the theoretical implication provided by Knoll and Dick (2013, p. 358) should be emphasized as well: instead of just using self-reported data – as applied within this present quantitative study – , *participant observation* can complement this scientific approach. Observers (e.g. leader, peers, subordinates) could provide attributions to the employee's motives for remaining silent. In alignment with Knoll and Dick (2013, p. 358), this approach could also contribute to research dealing with the accuracy of observer attributions and misattributions as well as its consequences for employees (van Dyne et al., 2003, p. 1380). Supervisors may attribute wrong motives to the silent behavior of their subordinates due to a misinterpretation of the employee's actual underlying motives for remaining silent, with negative consequences for the respective employee (van Dyne et al., 2003).

Drawing a stronger focus on the (in-)dependent variables used within the SEM of this thesis, further theoretical implications can be stated. First, the quantitative study has applied the items and scales provided by Knoll and Dick (2013) to empirically measure *employee silence* but also the *respective sub-forms of silence* (acquiescent, quiescent, prosocial and opportunistic silence). Over the last years, the number of quantitative studies is increasing. This present thesis could also show the relevance and validity of those *sub-forms* – especially with attention to acquiescent and quiescent silence – and how they can contribute to better understand the mechanisms and underlying motives of the multidimensional phenomenon of organizational silence. However, research is still lacking further empirical studies investigating potential antecedents and effects of those *sub-forms of employee silence* developed by Knoll and Dick (2013). Moreover, further research is also required on the role of *authentic leadership* and the effect of employee silence on the *innovative performance*. Only very little research has drawn its attention on the impact of *authentic leadership* (e.g. Guenter et al., 2017; Monzani et al., 2016) and the relationship between *innovative performance* and silence behavior (e.g. Chenji & Sode, 2019; Guo et al., 2018). The study has demonstrated that silence can diminish the innovativeness of organizations as innovative employees decide due to certain motives to withhold their relevant information rather than speaking up. This is particularly critical for organizations undergoing change processes which require the involvement, creativity and taking charge attitude of employees.

Lastly, the investigation of *certain (socio-)demographic data* (e.g. tenure, organizational assignment, hierarchical levels) and their relationship to silence behavior would be of interest. It could be suggested that employees with high levels of corporate tenure rather tend to remain silent as bad experiences may cumulate over time and the level of resignation may increase. They may also perceive that they have “more to lose” as their career progresses. In addition, contract workers might also decide not to engage in voice due to perceived injustice and therefore resign in silence. On the other hand, it could be also suggested that new hires especially

in high knowledge-intensive organizations such as professional service firms (PSFs) display tendencies to predominately remain silent by fear of being labelled negatively or as a troublemaker as those organizations have their own powerful organizational forces such as the grow-or-go model. First insights in this noteworthy regard has been provided by Donovan et al. (2016) through the investigation of employee silence in auditing firms. However, additional research efforts would be required to shed more light on these aspects. In addition to these theoretical implications, the investigation of *individual differences* and their effects on silence behavior has already been addressed by Vakola and Bouradas (2005, p. 453). However, other scholars in different domains have shown that *personality types* and other *personality-related characteristics* may have an impact on whether employees withhold their ideas and concerns or speak up. Only a few studies have already investigated the relationship between self-esteem and voice expression (Brockner et al., 1997) or the relationship between voice behavior and openness to change (Wanberg & Banas, 2000) – but not in the context of silence. However, the investigation of which personality traits or characteristics make individuals kind of “immune” towards the phenomenon of employee and organizational silence would give novel insights and help organizations to better direct their measures.

To summarize, the last chapter of this thesis could clearly show that organizational and employee silence can be considered as a highly relevant multidimensional constructs for organizations and their employees, with partially tremendous negative consequences. As outlined, many research questions and topics are still neglected and further attempts by scholars are required to provide more relevant information regarding the functioning and underlying motives of silence behavior. Those research efforts could help turn around the old and well-known Arabic proverb from the early 9th century into a new and auspicious direction: “*speech is golden, silence is silver.*”

Appendix

Appendix 1 – Overview of Sample Papers (2000–2005)

| Year | Title | Author(s) | Voice/Silence Focus | Level of Analysis | Concept or Theory applied | Methodology | Sample Size | (Independent) Variables | (Dependent) Variables | Published in |
|------|--|--|------------------------|--|--|--|---------------|---|---|---|
| 2000 | Organizational silence: A barrier to change and development in a pluralistic world | Morrison, E.; Milliken, F. | Organizational silence | Collective-level | • Climates of silence | Conceptual (defining and differentiating organizational silence) | / | <ul style="list-style-type: none"> Organizational structures/policies (e.g. centralization of decision making; lack of formal upward feedback mechanisms) Managerial practices (e.g. reject or respond negatively to dissent or negative feedback, lack of information solicitation of negative feedback) Degree of demographic dissimilarity between employees and top managers (e.g. differences in gender, race, ethnicity, age) Top management team and implicit managerial belief Communication and managerial practices Collective sense-making | <ul style="list-style-type: none"> Climate of silence Organizational silence | Academy of Management Review (A+) |
| 2001 | Employee silence: Quiescence and acquiescence as responses to perceived injustice | Pinder, C.; Harlos, K. | Employee silence | Individual-level | <ul style="list-style-type: none"> Exit, voice, loyalty and neglect (EVLN) Deaf ear syndrome Climates of silence Cultures of injustice | Conceptual (different types of silence) | / | e.g. organizational circumstances, individual predispositions, justice/injustice, situational variables (culture of injustice, deaf ear syndrome, climates of silence), demographic background, appraisal process | <ul style="list-style-type: none"> Employee quiescence (fear, anger, cynicism, despair) Employee acquiescence (resignation) | Research in Organizational Behavior (B) |
| 2003 | Speaking Up, Remaining Silent: The Dynamics of Voice and Silence in Organizations | Morrison, E.; Milliken, F. | Employee silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Employee voice Issue selling Whistle-blowing Championing Dissent Boat-rocking | / | / | / | / | Journal of Management Studies (A) |
| 2003 | An exploratory study of employee silence: Issues that employees don't communicate upward and why | Milliken, F.; Morrison, E.; & Hewlin, P. | Employee silence | Individual-level | <ul style="list-style-type: none"> MUM effect Organizational learning Exit, voice, loyalty and neglect (EVLN) Issue selling Whistle-blowing Fear | Empirical investigation (qualitative) | 40 interviews | <ul style="list-style-type: none"> Fear of being labeled negatively Fear of damaging relationships Feelings of hopelessness and futility Fear of trouble, retaliation, punishment | • Silence behavior | Journal of Management Studies (A) |

Appendix 1 – Overview of Sample Papers (2000–2005) – continued

| Year | Title | Author(s) | Voice/Silence Focus | Level of Analysis | Concept or Theory applied | Methodology | Sample Size | (Independent) Variables | (Dependent) Variables | Published in |
|------|--|-----------------------------------|------------------------|--|---|---|--------------------|---|--|-----------------------------------|
| 2003 | Conceptualizing employee silence and employee voice as multidimensional constructs | Van Dyne, L.; Ang, S.; Botero, I. | Employee silence | Individual-level | <ul style="list-style-type: none"> • Attribution theory • Theory of correspondent inference • Covariation principle of inferring motives • MUM effect • Organizational citizenship behavior (OCB) • Exit, voice, loyalty, and neglect (EVLN) • Civic virtue • Information manipulation theory | Conceptual (different types of silence) | / | <ul style="list-style-type: none"> • Resignation (disengaged as motive) • Fear (self-protective as motive) • Cooperation (other-oriented) | <ul style="list-style-type: none"> • Acquiescent silence • Defensive silence • Prosocial silence | Journal of Management Studies (A) |
| 2003 | Spirals of silence: The dynamic effects of diversity on organizational voice | Bowen, F.; Blackmon, K. | Organizational silence | <ul style="list-style-type: none"> • Individual-level • Collective-level | <ul style="list-style-type: none"> • Spiral of silence • Organizational voice • Social identity theory • Status construction theory • Expectation states theory • Social attribution theory | Conceptual (vertical spiral of silence) | / | <ul style="list-style-type: none"> • Climate of opinion • Fear of isolation • (Personal) identity • Pressure for repression • Workgroup processes • Social exchange | <ul style="list-style-type: none"> • Organizational voice • Organizational silence | Journal of Management Studies (A) |
| 2003 | Shades of silence: Emerging themes and future directions for research on silence in organizations | Milliken, F.; Morrison, E. | Organizational silence | <ul style="list-style-type: none"> • Individual-level • Collective-level | / | / | / | / | <ul style="list-style-type: none"> • Silence behavior | Journal of Management Studies (A) |
| 2003 | Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams | Edmondson, A. | Organizational silence | <ul style="list-style-type: none"> • Individual-level • Collective-level | <ul style="list-style-type: none"> • Team effectiveness • Climate of psychological safety | Empirical investigation (mixed methods) | Data from 16 teams | <ul style="list-style-type: none"> • Team preparation • Team leader coaching • Information infrastructure • Management support • Information infrastructure | <ul style="list-style-type: none"> • Speaking up • Implementation success (effect of speaking up) | Journal of Management Studies (A) |
| 2005 | Antecedents and consequences of organisational silence: an empirical investigation | Vakola, M.; Bouradas, D. | Organizational silence | Individual-level | <ul style="list-style-type: none"> • Double bind leadership • Exit, voice, loyalty, and neglect (EVLN) • Social cognitive theory | Empirical investigation (quantitative) | 677 employees | <ul style="list-style-type: none"> • Supervisor attitudes to silence • Top management attitudes to silence • Communication opportunities • Perceived climate of silence | <ul style="list-style-type: none"> • Employee silence behavior • Organizational commitment • Job Satisfaction | Employee Relations (B) |

Appendix 1 – Overview of Sample Papers (2006 – 2019)

| Year | Title | Author(s) | Voice/Silence Focus | Level of Analysis | Concept or Theory applied | Methodology | Sample Size | (Independent) Variables | (Dependent) Variables | Published in |
|------|---|--|------------------------|--|---|--|--|---|---|---|
| 2006 | Organizational silence and hidden threats to patient safety | Henriksen, K.; Dayton, E. | Organizational silence | Individual-level | <ul style="list-style-type: none"> Cultural censorship Consensual neglect Climates of silence | Conceptual (examination of underlying factors from the cognitive, social, organizational science and study of sociotechnical systems shaping organizational silence) | / | <ul style="list-style-type: none"> Individual factors (availability heuristic, self-serving bias, status quo trap) Social factors (conformity, diffusion of responsibility, microclimates of distrust) Cultural censorship (unchallenged beliefs, good provider fallacy, neglect of interdependencies) | <ul style="list-style-type: none"> Organizational silence | Health Services Research (A) |
| 2007 | Leadership behavior and employee voice: Is the door really open? | Detert, J.; Burris, E. | Organizational silence | Individual-level | <ul style="list-style-type: none"> Issue selling Extant leadership theory Climate of psychological safety Top management receptiveness concept | Empirical investigation (quantitative) | 3,372 respondents (3,149 employees; 223 managers) | <ul style="list-style-type: none"> Management openness Transformational leadership style Perceived psychological safety (mediator) Personality, satisfaction, job demographic (control variables) | <ul style="list-style-type: none"> Motivation to speak up Subordinate performance | Academy of Management Journal (A+) |
| 2008 | Employee silence on critical work issues: The cross level effects of procedural justice climate | Tangirala, S.; Ramanujam, R. | Employee silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Procedural justice climate Issue selling Whistle-blowing Principled organizational dissent Exit, voice, loyalty, and neglect (EVLN) | Empirical investigation (quantitative) | 606 respondents (nurses) | <ul style="list-style-type: none"> Procedural justice climate (moderator of individual-level antecedents) Workgroup identification Professional commitment Perceived supervisory status | <ul style="list-style-type: none"> Employee silence | Personnel Psychology (A) |
| 2009 | Organizational Silence and Whistle-Blowing on IT Projects: An Integrated Model | Park, C.; Keil, M. | Organizational silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> MUM effect Whistle-blowing Climates of silence | Experimental and empirical investigation (quantitative) | <ul style="list-style-type: none"> 250 respondents 308 cases | <ul style="list-style-type: none"> Organizational structures/policies Managerial practices Degree of demographic dissimilarity between employees and top managers | <ul style="list-style-type: none"> Employee silence Climate of silence | Decision Sciences (B) |
| 2009 | The Silent and the Silenced in Organizational Knowing and Learning | Blackman, D.; Sadler-Smith, E. | Organizational silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Tacit knowledge Tacit learning | Conceptual (development of forms of silence and silenced) | / | / | / | Decision Sciences (B) |
| 2009 | Silenced by fear: The nature, sources, and consequences of fear at work | Kish-Gephart, J.; Detert, J.; Treviño, L.; & Edmondson, A. | Organizational silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Culture of fear Anger theory Learned helplessness theory Dominance theory | Conceptual (development of different forms of defensive silence) | / | / | <ul style="list-style-type: none"> Non-deliberative defensive silence Schema-driven defensive silence Deliberative defensive silence Habituated silence Anger/fear-based silence | Research in Organizational Behavior (B) |

Appendix 1 – Overview of Sample Papers (2006–2019) – continued (I)

| Year | Title | Author(s) | Voice/Silence Focus | Level of Analysis | Concept or Theory applied | Methodology | Sample Size | (Independent) Variables | (Dependent) Variables | Published in |
|------|--|-------------------------------|------------------------|--|---|---|---|---|--|--|
| 2013 | Employee silence motives: Investigation of dimensionality and development of measures | Brinsfield, C. | Employee silence | Individual-level | <ul style="list-style-type: none"> Gestalt psychology Psychological safety | Scale Development (mixed methods - conduction of 4 studies) | <ul style="list-style-type: none"> Study 1: open-end survey for determination of nature and scope of silence motives Study 2: measure development of silence motives and exploration of their factor structure Study 3: Definition of measures and provision of confirmatory evidence Study 4: Examination of relationship between measures and related factors | <ul style="list-style-type: none"> Employee voice behavior Psychological safety Neuroticism | <ul style="list-style-type: none"> Ineffectual silence motive Relational silence motive Defensive silence motive Diffident silence motive Disengaged silence motive Deviant silence motive | Journal of Organizational Behavior (A) |
| 2013 | Do I Hear the Whistle Euro broken vertical bar? A First Attempt to Measure Four Forms of Employee Silence and Their Correlates | Knoll, M.; van Dick, R. | Employee silence | Individual-level | <ul style="list-style-type: none"> Cultural censorship MUM effect Spiral of silence Climates of silence | Scale Development (conduction of 2 studies) | <ul style="list-style-type: none"> Study 1: development of silence measures via online-survey (n=373 employees) and EFA & CFA application Study 2: construct validation of the four forms of employee silence (n=184 employees) | <ul style="list-style-type: none"> Job satisfaction (correlates) Organizational identification (correlates) Strain (effect) Well-being (effect) Turnover intentions (effect) Climate of silence (antecedent) Demographic and employment characteristics (control variable) | <ul style="list-style-type: none"> Quiescent silence Acquiescent silence Prosocial silence Opportunistic silence | Journal of Business Ethics (B) |
| 2013 | Organizational ethical climate, perceived organizational support, and employee silence: A cross-level investigation | Wang, Y.; Hsieh, H. | Employee silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Organizational ethical climate Theory of cognitive moral development | Empirical investigation (quantitative multi-level analysis) | 408 respondents (24 high-technology firms in Taiwan) | <ul style="list-style-type: none"> Types of organizational ethical climate: <ul style="list-style-type: none"> Instrumental climate Caring climate Independence climate Perceived organizational support (mediator) | <ul style="list-style-type: none"> Acquiescent silence Defensive climate | Human Relations (B) |
| 2013 | Echoes of Silence: Employee Silence as a Mediator Between Overall Justice and Employee Outcomes | Whiteside, D.; Barclay, L. | Employee silence | Individual-level | <ul style="list-style-type: none"> Exit, voice, loyalty, and neglect (EVLN) Organizational justice theory | Experimental and empirical investigation (quantitative) | <ul style="list-style-type: none"> Experimental study 1a (n=91) and 1b (n=152) Experimental study 2 (n=308) | <ul style="list-style-type: none"> Overall justice Emotional exhaustion Psychological withdrawal Physical withdrawal Performance Gender (control variable) | <ul style="list-style-type: none"> Quiescent silence Acquiescent silence | Journal of Business Ethics (B) |
| 2014 | The Silent Samaritan Syndrome: Why the Whistle Remains Unblown | MacGregor, J.; Stuebs, M. | Organizational silence | Individual-level | <ul style="list-style-type: none"> Fraud triangle Whistle-blowing Model of moral behavior Exit, voice, loyalty and neglect (EVLN) | Conceptual (development of fallacious silence) | • Experimental study (n=72) | <ul style="list-style-type: none"> Individual characteristics (awareness, group/community influence, performance culture, professional standards, moral competence) Gender (control variable) | <ul style="list-style-type: none"> Fallacious silence (acquiescent silence, quiescent silence, prosocial silence, opportunistic silence) | Journal of Business Ethics (B) |

Appendix 1 – Overview of Sample Papers (2006 – 2019) – continued (II)

| Year | Title | Author(s) | Voice/Silence Focus | Level of Analysis | Concept or Theory applied | Methodology | Sample Size | (Independent) Variables | (Dependent) Variables | Published in |
|------|--|--|------------------------|--|---|--|---|--|---|---|
| 2015 | Negative Core Affect and Employee Silence: How Differences in Activation, Cognitive Rumination, and Problem-Solving Demands Matter | Madrid, H.; Patterson, M.; Leiva, P. | Employee silence | Individual-level | <ul style="list-style-type: none"> • Core effect theory • Cognitive appraisal theory | Empirical investigation (quantitative) | <ul style="list-style-type: none"> • Diary study (n=44) and multilevel analysis (342 observations in 9 waves) | <ul style="list-style-type: none"> • Core affect (low/high-activated negative; low/high-activated positive) • Problem-solving demands • Rumination (moderator) • Gender, age, tenure (control variables) | <ul style="list-style-type: none"> • Employee silence • Employee voice | Journal of Applied Psychology (A) |
| 2015 | An Approach-Inhibition Model of Employee Silence: The Joint Effects of Personal Sense of Power and Target Openness | Morrison, E.; See, K.; Pan, C. | Employee silence | Individual-level | <ul style="list-style-type: none"> • Approach-inhibition theory of power | Empirical investigation (mixed method) | <ul style="list-style-type: none"> • Study 1: laboratory experiment (n=84) • Study 2: survey study (n=207) • Study 3: survey study (n=308) | <ul style="list-style-type: none"> • Personal sense of power • Perceived target openness (moderator) | <ul style="list-style-type: none"> • Employee silence | Personnel Psychology (A) |
| 2015 | The bad boss takes it all: How abusive supervision and leader-member exchange interact to influence employee silence | Xu, A.; Loi, R.; Lam, L. | Employee silence | Individual-level | <ul style="list-style-type: none"> • Conservation of resources theory • Leader-member exchange (LMX) | Empirical investigation (quantitative) | 152 respondents (two-wave data collection) | <ul style="list-style-type: none"> • Abusive supervision • Emotional exhaustion • Leader-member exchange (moderator) • Gender and organizational tenure (control variables) | <ul style="list-style-type: none"> • Silence behavior | Leadership Quarterly (A) |
| 2016 | Suffering in silence: Investigating the role of fear in the relationship between abusive supervision and defensive silence | Kiewitz, C.; Restubog, S.; Shoss, M.; Garcia, P.; Tang, R. | Organizational silence | Individual-level | <ul style="list-style-type: none"> • Avoidance tendencies • Theory of biologically-based motivational systems | Empirical investigation (quantitative) | <ul style="list-style-type: none"> • Study 1: survey study (three-wave data collection: n=264, n=239, n=190) • Study 2: survey study (n=267) • Study 3: survey study (n=162-166) | <ul style="list-style-type: none"> • Abusive supervision • Fear • Assertiveness (moderator) • Climate of fear (moderator) • Anger (control variable) | <ul style="list-style-type: none"> • Defensive silence | Journal of Applied Psychology (A) |
| 2016 | Does the presence of voice imply the absence of silence? The necessity to consider employees' affective attachment and job engagement | Knoll, M.; Redman, T. | Employee silence | <ul style="list-style-type: none"> • Individual-level • Collective-level | <ul style="list-style-type: none"> • Employer-sponsored voice practices | Empirical investigation (quantitative) | 201 respondents | <ul style="list-style-type: none"> • Employer-sponsored voice practices • Affective attachment to the organization (moderator) • Job engagement (moderator) | <ul style="list-style-type: none"> • Promotive voice • Cooperative silence | Human Resource Management (B) |
| 2016 | Silence as a mediator between organizational factors and stress | Dedahanov, A.; Lee, D.; Rhee, J. | Organizational silence | Individual-level | <ul style="list-style-type: none"> • Person-environment fit theory • Theory of planned behavior (TPB) | Empirical investigation (quantitative) | 687 respondents | <ul style="list-style-type: none"> • Punishment • Communication opportunities • Silence (mediator) | <ul style="list-style-type: none"> • Stress | Journal of Managerial Psychology (B) |
| 2016 | It takes two to tango: The interactive effect of authentic leadership and organizational identification on employee silence intentions | Monzani, L.; Braun, S.; van Dick, R. | Employee silence | <ul style="list-style-type: none"> • Individual-level • Collective-level | <ul style="list-style-type: none"> • Exit, voice, loyalty, and neglect (EVLN) • Social learning theory • Self-concept • Self-determination theory | Empirical investigation (quantitative) | 458 respondents (vignette study) | <ul style="list-style-type: none"> • Organizational identification • Authentic leadership • Control variables (age, gender, national cluster, contract type, managerial role, voice) | <ul style="list-style-type: none"> • Organizational silence (exit, neglect, loyalty) | German Journal of Research in Human Resource Management (C) |

Appendix 1 – Overview of Sample Papers (2006–2019) – continued (III)

| Year | Title | Author(s) | Voice/Silence Focus | Level of Analysis | Concept or Theory applied | Methodology | Sample Size | (Independent) Variables | (Dependent) Variables | Published in |
|------|---|---|------------------------|--|--|--|---|--|---|-----------------------------------|
| 2017 | What Does it Take to Break the Silence in Teams: Authentic Leadership and/or Proactive Followership? | Guenter, H.; Schreurs, B.; van Emmerik, I.; Sun, S. | Organizational silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Behavioral plasticity theory | Empirical investigation (quantitative) | 223 respondents | <ul style="list-style-type: none"> Authentic leadership Proactive personality Control variables (age, team size, team tenure) | Employee silence | Applied Psychology (B) |
| 2018 | Navigating Ambivalence: Perceived Organizational Prestige-Support Discrepancy and Its Relation to Employee Cynicism and Silence | Mignonac, K.; Herrbach, O.; Archimi, C.; Manville, C. | Employee silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Social identity theory Cognitive dissonance | Empirical investigation (quantitative) | <ul style="list-style-type: none"> Study 1: survey study (n=119) Study 2: survey study (n=743) Study 3: survey study (n=237) - focus on employee silence | <ul style="list-style-type: none"> Perceived external prestige Perceived organizational support Organizational cynicism Control variables (age, gender, tenure) | Employee Silence | Journal of Management Studies (A) |
| 2018 | Authoritarian leadership and employee creativity: The moderating role of psychological capital and the mediating role of fear and defensive silence | Guo, L.; Decoster, S.; Babalola, M.; De Schutter, L.; Garba, O.; Riisla, K. | Employee silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Transactional theory of stress | Empirical investigation (quantitative) | <ul style="list-style-type: none"> Study 1: survey study (n=115) Study 2: survey study (n=192) | <ul style="list-style-type: none"> Authoritarian leadership Fear Defensive silence Psychological capital (moderator) | Creativity | Journal of Business Research (B) |
| 2019 | Performative Silences: Potentiality of Organizational Change | Dupret, K. | Organizational silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Actor-network theory | Empirical investigation (quantitative) | Ethnographic study | Silence | <ul style="list-style-type: none"> Decision-making processes New work practices | Organization Studies (A) |
| 2019 | How empowering leadership reduces employee silence in public organizations | Hassan, S.; DeHart-Davis, L.; Jiang, Z. | Employee silence | <ul style="list-style-type: none"> Individual-level Collective-level | <ul style="list-style-type: none"> Social exchange theory | Empirical investigation (quantitative) | <ul style="list-style-type: none"> Study 1: survey study (n=1,060) Study 2: survey study (n=552) | <ul style="list-style-type: none"> Empowering leadership Trust in supervisor (mediator) Job control (mediator) Organizational identification (mediator) Control variables (female, nonwhite, age, tenure) | Silence | Public Administration (B) |
| 2019 | Power Imbalance and Employee Silence: The Role of Abusive Leadership, Power Distance Orientation, and Perceived Organisational Politics | Lam, L.; Xu, A. | Employee silence | Individual-level | <ul style="list-style-type: none"> Approach-inhibition theory of power Trait activation theory | Empirical investigation (quantitative) | 159 respondents | <ul style="list-style-type: none"> Abusive supervision Power distance orientation Perceived organizational politics (moderator) | <ul style="list-style-type: none"> Defensive silence Acquiescent silence | Applied Psychology (B) |

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