The Relationship Between Organizational Climate, Work Fatigue, and Readiness for Change in the Norwegian Police Service

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Abstract

The aim of this study was to examine the relationship between organizational climate, individual readiness for change, and work fatigue. The thesis investigates global climate as conceptualized by Kuenzi (2008), based on the Competing Values Framework developed by Quinn and Rohrbaugh (1983), its direct effects on readiness for change and work fatigue, and its indirect effects on readiness through work fatigue. Following Frone and Tidwell (2015) work fatigue was conceptualized as a three-dimensional construct consisting of physical, mental, and emotional fatigue. Readiness for change has been found to play a central part in the successful implementation of change initiatives. As the police is currently undergoing a large reform, it is interesting to examine factors which may be of importance in this process. The study tested a total of 23 hypotheses using structural equation modeling, on a sample of 216 employees from a district of the Norwegian police service. Cross-sectional data was gathered as part of a collaborative research project between the research department at the Norwegian Police University College and the Department of Work and Organizational Psychology at the University of Oslo. The results suggest that global climate positively predicts individual readiness for change. Furthermore, climate had a positive direct effect on mental and emotional work fatigue, indicating that climate was associated with lower levels of fatigue. However, the direct effects of climate on physical fatigue, and of work fatigue on readiness for change were not significant. In addition, no support was found for an indirect effect of climate on readiness for change through work fatigue. The study contributes to the field by emphasizing the importance of examining the organizational climate in relation to a planned change approach to change management, as it is directly related to individual readiness for change and the well-being of the employees.
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Introduction

The ability to manage development and change is essential for any organization in order to meet the evolving demands of the environment they operate in (Burnes, 2004). The terrorist attacks in Norway on July 22nd, 2011 prompted a series of investigations into the police’s efficiency and ability to handle the demands they are faced with. A public inquiry (NOU 2012:14, 2012, p. 16) criticized the organization for having insufficient training, coordination and communication, and leadership. The Police Analysis (NOU 2013:9, 2013, p. 9) later concluded that the police was not equipped to meet the challenges brought on by today’s globalization, rapid technological development, and changing demographic patterns. The police has to adapt to both handling increasingly complex and organized crime, and to be able to meet the needs of the public. The discussions surrounding the future of the police finally culminated in the development of a new reform in 2015 (Justis- og beredskapsdepartementet, 2015), which is still in progress (Christensen, Lægreid, & Rykkja, 2018).

The implementation of the reform represents a planned approach to implementing organizational change (Burnes, 2017). Despite the widely acknowledged importance of appropriate change management in organizations, research suggests that as much as two thirds of change initiatives fail (Burnes, 2011). This has focused the attention of researchers on factors which contribute to a successful change process, and individual readiness for change has emerged as a central piece of the puzzle (Armenakis, Harris, & Mossholder, 1993; Jones, Jimmieson, & Griffiths, 2005).

Organizational climate, defined as the employees’ shared perceptions of events, policies and procedures in the organization (Schneider & Reichers, 1983), has more often been studied as a mediating variable than as a predictor (Kuenzi, 2008). However, a thorough understanding of the organizational climate in the police service can provide information that is essential to the planning and implementation of changes, and to understand how the perceptions of events in the organization can aid in facilitation of readiness for change. Previous research by Lone et al. (2016) suggests that climate dimensions salient in the Norwegian police can be described using the Competing Values Framework (CVF; Quinn & Rohrbaugh, 1983). Therefore, this thesis will draw on Kuenzi’s (2008) work on global climates based on the CVF to examine whether the framework is suitable to measure police climate, and to gain insight into the value configurations of the organization.

During the implementation of large changes, employees can experience high levels of
stress at work (Callan, 1993), and while the police occupation is assumed to be inherently stressful, research suggests that organizational factors contribute more to police stress than operational experiences (Abdollahi, 2002). In the context of a major reform it is therefore conceivable that employees can experience work-related fatigue and that this may affect their levels of readiness for change. However, to the author’s knowledge, there are no existing studies investigating the relationship between work fatigue and readiness, which suggests an opportunity to contribute to the understanding of antecedents to readiness for change.

Based on this, the aim of this study is to investigate how organizational climate, as conceptualized thought the CVF, affects work fatigue and readiness for change in the Norwegian police service. Specifically, the study examines the direct effects of organizational climate on work fatigue and readiness for change, the direct effect of work fatigue on readiness for change, and finally, the mediating effect of work fatigue on the relationship between climate and readiness. In the following, the thesis will address and discuss the concepts of readiness, climate, and fatigue, which leads to the development of 23 hypotheses. Then the method for testing the hypothesis is described, followed by the presentation and discussion of the results, and some suggestions for future research.
Background

Readiness for Change

The police organization is not alone in undergoing large structural changes. As the demands of the environment organizations operate in constantly develop, an organization’s ability to change has long been regarded essential for their survival (Burnes, 2011; By, 2005). Yet, there is substantial evidence that as much as 70% of change initiatives fail (Burnes, 2011; Burnes & Jackson, 2011). Many researchers attribute this to the management of the change processes. This has given rise to a substantial number of different approaches to change management over the last 50 years, as well as disagreements over which should be considered the most efficient one (Burnes, 2017; By, 2005). However, rather than imposing a supposed “best way” approach on the organization, more recent research emphasizes the importance of selecting an approach based on the organizational context and the nature of the changes managers wish to make (Burnes, 2004). This is well illustrated in Burnes’ (2017) framework for change, where two dimensions of change characteristics (slow vs. rapid change, and turbulent environment and large-scale transformation vs. stable environment and small-scale change) are combined to form four quadrants with their own distinct focus.

In addition to large structural changes in the districts, the police reform focuses on the attitudes and behaviors among employees at individual and group level (Justis- og beredskapsdepartementet, 2015). In accordance with the change framework, this has led to a planned change approach to developing the police organization. Planned change emphasizes the human side of the organization and has a collaborative and humanistic approach (Burnes, 2017). It has traditionally been contrasted with the emergent approach to change. The emergent approach developed as a response to the criticism of the planned approach, and its proponents appear to mostly be united by their skepticism of planned change rather than theoretical agreement (Burnes, 1996). Where the planned approach focuses on the sequences an organization must go through to successfully implement a change initiative, the emergent approach views change as a continuous process through which the organization can adapt to changing circumstances.

Organizational leaders often wish to introduce specific systemwide changes to improve the organization’s efficiency and ability to cope with market demands, but such changes can spur conflict between leaders and other members of the organization. This conflict must be resolved and resistance towards the change must be removed for the changes to be executed successfully (Holt, Armenakis, Field, & Harris, 2007; Jones et al., 2005). For
this to happen one of the most important factors are that the employees are psychologically ready to support the change (Armenakis et al., 1993; Jones et al., 2005). While Burnes’ model for change is a comprehensive theoretical framework, it has yet to be operationalized for measurement. However, as the focus of the planned change approach are the humans of the organization and due to the employees’ central role in the success of a change initiative, this thesis will examine individual readiness for change (RFC) in the Norwegian police service.

The term “readiness” has been applied to describe three different concepts (Vakola, 2014). These are the confidence in one’s abilities (individual readiness for change), perceived organizational readiness for change (confidence in the organization’s ability to manage change), and the organization’s actual ability to implement change. However, the research literatures inability to consistently distinguish between different levels of analysis for the readiness concept implies a lack of definitional clarity. This thesis aims to investigate readiness at the individual level of analysis and will therefore focus on literature which has emphasized this facet of the readiness concept, where these facets are separated, and not e.g. perceptions of organizational readiness for change (Callan, 1993).

Individual RFC involves the beliefs, attitudes, and intentions of the individual employees, and is considered a cognitive precursor to behaviors related to either resisting or supporting the change initiative (Armenakis et al., 1993). Individual level RFC is suggested to be a multidimensional construct shaped by numerous factors related to characteristics of the individual, the context, and the change process (Holt et al., 2007; Oreg, Vakola, & Armenakis, 2011). Holt et al. (2007) suggested that RFC is influenced by change-specific efficacy (involves the belief that they are capable of implementing the proposed change), appropriateness (the belief that the change is suitable), management support (the belief that the leaders in the organization are committed to the change), personal valence (the belief that the change will be of benefit to the employees themselves), organizational valence (the belief that the change will benefit the organization), and the belief that the change is necessary.

These findings were supported by later research, which also emphasized the importance of the way the change is implemented in the organization (Oreg et al., 2011; Vakola, 2014). RFC was found to also be affected by a climate for communication and access to relevant information, trust in the management, and core self-evaluation. Core self-evaluation refers to individuals’ beliefs about the self, such as the employees’ confidence in their abilities, their ability to cope with stressful events, and their tendency to perceive change as positive. When these factors are present the employees experience high levels of readiness for change, and on the other hand, when people are not confident in their abilities they will
not perform well related to change processes and may resist them (Armenakis et al., 1993; Cunningham et al., 2002; Oreg et al., 2011; Vakola, 2014). Oreg et al. also found support for the assumption that the anticipated personal impact of change is relevant for readiness. This implies that employees who perceive the change to be personally beneficial are more likely to support the change compared to employees who expect the change to affect them negatively. In addition, participation in the change process is associated with higher levels of readiness, acceptance, and support of the change, and with perceiving the change as less stressful (Oreg et al., 2011).

A review of research on recipients’ reactions to organizational change found an overall positive association between self-efficacy and change acceptance, readiness for change, engagement in the process, and commitment to the change (Oreg et al., 2011), suggesting that self-efficacy may play a central role in the experience of RFC. A common denominator of the factors essential to individual RFC appears to be their contributions to the employees’ sense of control, and anxiety reduction, which then may also influence self-efficacy.

Due to the importance of RFC for the successful implementation of organizational changes and for the well-being of the employees, it is essential to examine factors which may affect readiness. As RFC as mentioned above already has been found to be related to climate dimensions such as communication and trust in management, it is interesting to examine further how climate affects readiness. By developing a thorough understanding of such contextual factors, research can help managers to facilitate more efficient change processes. To that end, this thesis aims to further elaborate the knowledge on the relationship between organizational climate and RFC.

Organizational Climate

Organizational culture and organizational climate have been popular approaches to conceptualizing and investigating the ways employees describe and experience their work settings (Kuenzi, 2008; Schneider, Ehrhart, & Macey, 2013), and how this relates to organizational outcomes such as effectiveness, competitive advantage, and readiness for change (Haffar, Al-Karaghouli, & Ghoneim, 2014; Jones et al., 2005; Parker & Bradley, 2000; Schneider et al., 2013). While culture and climate have different origins and histories in the literature, researchers on both concepts have struggled with settling on a definition and on how to distinguish between them (Kuenzi, 2008; Patterson et al., 2005; Schneider et al., 2013). Because of these challenges, and because both branches have focused on some of the same research subjects I find it useful to briefly discuss what both concepts entail and the
differences between them.

**Organizational culture.** Early on there was an understanding in the literature of how organizational culture was an important factor related to performing changes in the organization. Handy (1976, p. 84) emphasized that “First, know your culture, then prescribe your remedy.” This means that before trying to change the way something works in an organization one must diagnose the present culture and then compare this to the preferred state to assess what the appropriate course of action may be. However, before being able to examine the culture, it is essential to know exactly what you are looking for; but culture has been notoriously difficult to define (Jung et al., 2009).

A popular definition was suggested by Schein (1984, p. 3), who described organizational culture as

> the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems.

The main focus of this definition is on culture as the property of a group, and as something that emerges through this group’s interactions with its surroundings. This is also the foundation of the definition proposed by Seel (2000, p. 2): “Organisation culture is the emergent result of the continuing negotiations about values, meanings and properties between the members of that organisation and with its environment.” The definitions also emphasize how culture is a social phenomenon.

Another issue in the culture literature has been on which level of analysis to study it (Schneider et al., 2013). According to Schneider et al., Schein’s (1984) framework for culture is the most commonly referred to regarding the different levels of organizational culture. Schein proposed that in order to understand how a given culture has developed it has to be analyzed on three different levels, and described these as an organization’s artifacts (the way the group has constructed its physical environment, and any discernable patterns of behavior), the values that governs this behavior (the conscious reasons people give for acting the way they do), and finally, the basic assumptions underlying these values (unconscious and taken-for-granted assumptions that determine how members of the group perceive their surroundings). The artifacts and values are considered the surface manifestations of the culture, whereas to really understand it one must analyze the underlying assumptions shaping
the observable behavior. However, there has been a tendency in the literature to focus on the values as a measure of culture, as the values are more accessible to researchers than the assumptions and more reliable than the artifacts (Parker & Bradley, 2000).

These three different components of a culture interact with each other over time, which feeds the development and retention of the cultural elements (Schein, 1984). This is in line with Seel’s (2000) definition of culture as an emergent result of the daily conversations in the organization.

Organizational climate. Climate researchers originally set out to understand the total situational influences in organizations and how these affect the individual. Organizational climates have indeed been found to affect nearly every aspect of organizational life, and to have implications for outcomes on both individual and organizational levels (Kuenzi & Schminke, 2009; Scheider et al., 2013). Reviews of climate literature (e.g. Kuenzi, 2008; Kuenzi & Schminke, 2009) conclude that overall there have been found strong relationships between work climates and job attitudes.

The dominant view of organizational climate defines it as the employees’ shared perceptions of events, policies, practices, and procedures that an organization rewards, supports, and expects (Kuenzi, 2008; Patterson et al., 2005; Schneider & Reichers, 1983). The individual evaluates their environment and attach meaning to their perceptions, which constitutes an individual-level construct termed psychological climate. When these perceptions are shared by the employees in an organization they can be aggregated to a meaningful measure of organizational climate (James et al., 2008; Kuenzi, 2008). A strong climate suggests a perceptual agreement on the goals of the organization and how these are expected to be obtained (James et al., 2008).

Schneider and Reichers (1983) emphasize how it is the interactions between the employees which create this shared perception of the also shared environment, and thus the climates. This makes both culture and climate the results of the social processes in the workplace.

The literature distinguishes between global climate and specific or focused climates. Global climate is defined as the shared perceptions of policies, practices, and procedures, and reflects the general work environment (Kuenzi, 2008). The global climate research has historically suffered most under lack of sound and common theoretical ground, and in an attempt to deal with these issues researchers turned to specific climates instead. Specific climates relate to a strategic focus or particular aspects of the organization, such as safety, service, or innovation. These focused climates are considered a better predictor of the specific
outcomes they focus on, whereas the global climate is more encompassing and assumed to be a better predictor of global outcomes (Kuenzi, 2008; Schneider, et al., 2013; Schneider & Reichers, 1983).

**Distinguishing between the constructs.** Both culture and climate deal with how employees make sense of their environment (Kuenzi & Schminke, 2009), and address the development, influence, and retention of the social context in organizations (Kuenzi, 2008). Some researchers have used the terms interchangeably and claim them to be nearly indistinguishable (Jung et al., 2009), yet there are some differences between them which indicate that they should be considered distinct constructs.

Culture can be viewed as a set of shared values and norms held by employees, which guide their interactions with other employees on different levels of the organization, and with their clients (Svyantek & Bott, 2004, in Patterson et al., 2005, p. 380). The climate can be understood as more oriented towards the behavior in the workplace, and thus as an observable manifestation of the underlying culture; much like the artefacts and values described by Schein (1984; Schneider et al., 2013). Additionally, the culture exists at a higher level of abstraction with deeper dimensions than the climate (Kuenzi, 2008). Culture has been described as a core attribute of organizations, which is more enduring and slower to change, while the climate in comparison can be more fleeting and change more quickly as it is grounded in attitudes (Cameron & Quinn, 2006).

Based on these differences culture and climate has been described as the why and the how of organizational behaviors (Patterson et al., 2005). Schneider et al. (2013) emphasize that the literature on culture and climate has now come to emphasize the mutually beneficial relationship between the concepts, in terms of explanatory power regarding the workings of organizational behavior.

The report following the attacks on July 22nd, 2011 emphasized the need to change organizational culture and attitudes (NOU 2012:14, 2012, p. 16), but without giving a definition of culture. However, as climate is concerned with the perceptions of events in the organization and as the literature has found climate to be strongly related to a range of job attitudes (Kuenzi & Schminke, 2009), organizational climate was found to be the better choice of predictor for this thesis.

**Measuring organizational climate.** Schein (1984) emphasized the influence values have on the observable behavior in an organization. Values have also become a focus of the climate literature (Kuenzi, 2008), and are assumed to play an important role in shaping the climate by influencing employee perceptions and behavior (Grojean, Resick, Dickson, &
Smith, 2004). Conceptualizing climate through models such as the Competing Values Framework (CVF) (Kuenzi, 2008; Quinn & Rohrbaugh, 1983), provides a helpful framework for studying values that have been found to be important in an organizational context. In her doctoral dissertation Kuenzi developed a survey measure for global work climate based on the CVF, which is applied in this thesis. This survey caters to Kuenzi and Schminke’s (2009) request for measures that are appropriately designed in relation to the definition and conceptualization of climate, and asks specifically about the policies, practices, and procedures that are valued in the organization.

The Competing Values Framework. The CVF was originally developed as a measure of organizational effectiveness (Quinn & Rohrbaugh, 1983), but due to its broad impact it has been applied in many different streams of research (Kuenzi, 2008). In later writings, Cameron and Quinn (2006) apply the framework as a tool for diagnosing and facilitating change in organizational culture.

Endeavoring to gather the major approaches to organizational values and effectiveness into one encompassing framework, Quinn and Rohrbaugh (1983) investigated how researchers view effectiveness criteria and developed three different value dimensions on which to sort them. The first dimension describes the focus of the organization, which according to the model, ranges from an internal focus on the development and well-being of the employees, to an external focus on the development and well-being of the organization. The second dimension describes the structure of the organization and whether it emphasizes flexibility, change, and innovation, or control and order. The last value dimension describes the organization’s focus on means and ends; what mechanisms drive the organization towards their desired criteria for effectiveness (Hartnell, Ou, & Kinicki, 2011; Quinn & Rohrbaugh, 1983.)

The integration of the three value dimensions into one model creates four different models of organizational effectiveness within the framework (Quinn & Rohrbaugh, 1983). These are illustrated in the four quadrants of figure 1.

The Human Relations Model (HR) is characterized by an internal focus and a flexible orientation. The model values quality, training and development, and seeing the value of human resources, which are achieved through an emphasis on cohesion, teamwork, trust, and morale (Quinn & Rohrbaugh, 1983; Patterson et al., 2005). The Internal Process Model (IP) is characterized by an internal focus and a control orientation. The model emphasizes stability, coordination, and control, which is achieved by information management and formal procedures (Quinn & Rohrbaugh, 1983; Patterson et al., 2005). The Open System Model (OS)
implies a dynamic environment characterized by an external focus and a flexible orientation. It emphasizes growth, innovation, and change, which is achieved through a focus on resource acquisition, adaption, utilizing the environment, and readiness (Quinn & Rohrbaugh, 1983; Patterson et al., 2005). The Rational Goal Model (RG) is characterized by an external focus and a control orientation. The model focuses on goal planning and achievement, and values productivity, efficiency, profit, competitiveness, and performance feedback (Quinn & Rohrbaugh, 1983; Patterson et al., 2005).

The three value dimensions represent basic dilemmas of organizational life. However, before they were integrated in the CVF they had only been recognized and discussed individually (Quinn & Rohrbaugh, 1983). The model is called competing because the core values that constitute the two continuums (flexibility vs. control and internal vs. external) represent opposing assumptions, meaning that the four quadrants in the framework are regarded as competing or contradictory both vertically, horizontally, and diagonally (Cameron & Quinn, 2006). Cameron and Quinn claim that their studies of organizational cultures have shown that over 80% of organizations have one dominant type of culture, and that the remaining organizations are either unsure about their culture or emphasize the different

Figure 1. The Competing Values Framework. Based on Quinn and Rohrbaugh (1983).
models equally. However, maximizing the emphasis on one end of each dimension may cause the other end to suffer, e.g. focusing too much on stability and control can make the organization rigid and less prepared to adapt and develop. Therefore, it is important to note that despite the model’s presentation of these concepts as competing, they are not mutually exclusive. Quinn and Rohrbaugh (1983) suggest that an effective organization may have to perform well on both flexibility, control, internal focus, and external focus, but that there always will be some extent of tradeoff between them.

Quinn and Rohrbaugh (1983) emphasized that ideally there should be a balance between the different culture types, and research has since suggested that the different models can coexist within one organization (Parker & Bradley, 2000). In fact, more recent research has suggested that the four models are not competing or paradoxical, but rather complement each other and work together. A meta-analysis of studies examining the relationship between three culture models and major indices of organizational effectiveness found that the culture types, on average, are moderately to strongly correlated (Hartnell et al., 2011). This implies that focusing on one dominant culture in an organization may lead researchers to miss out on the bigger picture. This issue of missing out may also relate to the approach of measuring climate as an aggregate of individual perceptions, and then using this group-level agreement as an indication of climate strength, as this may lead to the neglecting of the perceptions of the employees who are less in agreement with the majority (Kuenzi, 2008).

**Stress and Fatigue in the Police Service**

Major organizational change processes and the direct effects they can have on employees work experience can be very stressful (Callan, 1993). Ever since work-related stress started to interest researchers there have been numerous attempts at defining the concept of stress. Early definitions viewed stress as any environmental pressures on the individual, or the consequences of this pressure (Schuler, 1980; Arnold et al., 2010). Modern theories of work-related stress view it as a negative emotional state which is caused or made worse by work and can develop as a result of the interaction between the employee and their environment (Arnold et al., 2010).

Although the nature of stress in the context of police work and its effects on officers has been given much attention it is still challenging to make sense of it. Abdollahi’s (2002) examination of the literature revealed that it could be organized into four main categories; stress which is the result of police work, stress which is the result of organizational factors, intra-interpersonal stressors (research into whether certain personality factors may interfere
with the ability to function as a police officer, and if they contribute to the experience of
stress), and health consequences. Although personality styles are thought to interact with
work tasks, the literature on intra-interpersonal stressors appears to be inconclusive. Studies
examining health consequences of stress report a wide range of psychological and physical
issues and illnesses resulting from both police work (Abdollahi, 2002) and stress in general

When considering the possibility of experiencing stressful, traumatic, or even life-
threatening situations during operational work, it is no wonder that the assumption that police
work is stressful has face validity. However, it has been a debate in the literature regarding
whether the police profession is more or less stressful compared to other occupations
(Abdollahi, 2002). An Australian study found support for the assumption that police work was
more stressful (Hart & Cotton, 2002), results suggesting that, compared to other public sector
workers, police officers experienced higher levels of stress, and lower levels of morale and
quality of work life. However, when taking a closer look at how operational and
organizational experiences contributed to this finding it became apparent that the
organizational experiences were more important than the operational ones in determining
police officers’ occupational well-being.

Even though organizational stressors are irrefutably related to police stress, this
category of research has received less attention (Abdollahi, 2002). Nevertheless, research has
emphasized the impact of factors such as shift work, inadequate supervision, unskilled
supervisors, injustice, exclusion from decision-making, lack of recognition and support,
insufficient pay, poor resources, and role conflict and ambiguity.

Several more recent studies suggest that the stress responses appear to mostly be
related to the job context stressors (organizational stressors; the organizational environment
and managerial practices) rather than the job content stressors (occupational stressors;
operational experiences such as violence and dealing with victims) (e.g. Berg, Hem, Lau,
Håseth, & Ekeberg, 2005; Biggam, Power, MacDonald, Carcary, & Moodie, 1997; Davey,
Obst, & Sheehan, 2001; Hart & Cotton, 2002; Hassel & Brandl, 2009). Hart and Cotton even
found that even though some operational experiences were a source of distress, officers also
derived satisfaction from the operational work, e.g. from being able to help people injured in
an accident.

Davey et al. (2001) found that among Australian police officers long work hours, lack
of organizational support, and organizational change were significant predictors of stress,
whereas shiftwork, and dangerous and uncontrollable duties were not. A nationwide study of
police stress in Norway (Berg et al., 2005) found significant differences in severity and frequency of stress with respect to rank, gender, and age. Younger officers reported more job pressure severity, and while female officers experienced job stressors less frequently, they perceived them as more severe than the male officers. Participants rated incidents such as work injuries and serious operational tasks as the most stressful, but least frequent stressors on the job. They also rated job pressure, including inherent systemic factors, as a less serious, but much more frequent stressor. This is supported by research from the USA indicating that the stressors that originate from within the organization and relate to job characteristics shared with most other professions that contribute the most to police stress; not the physical danger involved in the work (Hassel & Brandl, 2009).

Abdollahi (2002) concludes her review by stressing that the debate regarding the status of the police profession as inherently stressful has yet to be settled, and that progress is required on the topic of the contribution of organizational factors to police stress.

**Work fatigue.** This thesis aims to contribute to this stream of research by focusing on work fatigue. Research on work-related stress emphasizes the importance of considering the possible adverse personal effects organizational factors may have on the individual. This is also true in the context of the major reform the Norwegian police service has gone through, and which effects these may have. It had been suggested that work fatigue is related to factors such as hectic work, overtime, physical strenuous work, psychological demands or mental strain, personal and family demands, and work stress (Hystad, Saus, Sætrevik, & Eid, 2013; Stuetzle, Pavlin, Smith, & Weston, 2018; Åkerstedt, Fredlund, Gillberg, & Jansson, 2002). Although the literature on fatigue in police officers so far is rather limited, it has emphasized its relationship with long work hours and shift work, and the risk fatigue poses to health, safety, and performance (e.g. Vila, 2006; Vila & Kenney, 2002; Violanti et al., 2018).

After reviewing the existing literature on work fatigue and acknowledging its weaknesses in the absence of an explicit definition and valid measure of the construct (Australian Safety and Compensation Council, 2006; Frone & Tidwell, 2015), Frone and Tidwell suggested defining work fatigue as “extreme tiredness and reduced functional capacity that is experienced during and at the end of the workday” (p. 274). The depletion of energy, and reduced motivation and commitment that follows it, has an onset when the job demands exceed the resources available to handle stressors, and is offset by removal of the demands and restoration of energy through rest (Frone & Tidwell, 2015; Garrick et al., 2014). Fatigue can thus be considered the result of experiencing stress without getting the opportunity to recharge (Australian Safety and Compensation Council, 2006), which is why it
is important to see it in relation to factors contributing to work stress. Depending on how long
the fatigue is experienced it can be considered an acute or a chronic condition.

Based on the preexisting literature on the subject, it was proposed that tiredness and
reduced functional capacity can occur in relation to three different resources, making the
definition three-dimensional (Frone & Tidwell, 2015). These are physical energy (involving
muscular movement), mental energy (involving cognitive processing), and emotional energy
(involving expression and regulation of emotions). The conceptualization of work fatigue
resembles that of work stress in the focus on the negative effect the demands of work may
have on the employees, but in contrast to the stress concept, fatigue to a larger degree include
the mental and physical aspects of external demands as well.

The three-dimensionality was supported by the development and testing of the Three-
Dimensional Work Fatigue Inventory (3D-WFI) (Frone, Reins, & Ottenstein, 2018; Frone &
Tidwell, 2015). The initial study (Frone & Tidwell, 2015) suggested that physical and mental
job demands were positively related to physical and mental work fatigue, respectively, and
exhibited a weaker relation with the other two dimensions. Emotional job demands, however,
showed an equally strong positive relation to all three dimensions. They also found that
physical and emotional work fatigue was negatively related to physical and mental health, job
satisfaction, and organizational commitment, and positively related to an inability to relax
after work, and to turnover intentions. Their results taken together were interpreted to suggest
that it may be only work conditions that either deplete or protect and renew employees’
ergetic resources that are related to fatigue.

The present study will apply the 3D-WFI on a sample from the Norwegian police, to
investigate whether the inventory is suitable for measuring work fatigue in the organization.
Additionally, this can provide valuable insight in the effect of the reform on the employees.

Hypotheses Development

Competing Values Framework and Readiness for Change

The research literature has so far given relatively little attention to the relationship
between the contextual factors such as organizational climate and individual readiness for
change. As mentioned above have reviews of climate literature (e.g. Kuenzi, 2008; Kuenzi &
Schminke, 2009) found strong relationships between work climates and job attitudes, but
there is a substantially smaller amount of research on the relationship between climate and
RFC. RFC is an important concept in organizations and researchers stress the importance of
the human factor in the change implementation process (Armenakis et al., 1993; Holt et al., 2007; Jones et al., 2005). RFC depends on the organizational context, and as climate and job attitudes are strongly related, the relationship between RFC and climate warrants closer inspection.

Jones et al. (2005) found a positive association between a HR climate and RFC. Haffar et al. (2014) suggested that all four climate models in the CVF were correlated with RFC, but that only HR and OS had a significant positive association with readiness in the regression analysis. Zammuto and Krakower (1991, in Gifford, Zammuto, & Goodman, 2002) found that IP and RG models among other things were positively related to resistance to change.

Several researchers highlight the need to investigate the effect of multiple types of climates simultaneously, (e.g. Haffar et al., 2014; Kuenzi, 2008; Lone et al., 2017; Schenider et al., 2013), as much research has chosen to focus on only a few climate models at the time. In addition, despite the CVF’s emphasis on organizational values as competing (Quinn & Rohrbaugh, 1983), research suggests that the different climate models are moderately to strongly intercorrelated and thus complement each other rather than compete (Hartnell et al., 2011; Parker & Bradley, 2000). Based on these recent advances in the understanding of the framework, all four climate models in the CVF are retained in this thesis.

The HR model emphasizes factors such as flexibility, cohesion, morale, trust, and human resources development (Quinn & Rohrbaugh, 1983). An HR climate is likely to value communication and participation, which are important factors in the development of RFC (Holt et al., 2007). Rafferty and Griffin (2006) also found perceived organizational support, flexible policies and procedures, and trust in senior organizational leaders to be positively associated with readiness, and these are values one may expect to find in an HR climate. Thus, this supportive and employee centered focus is likely to be positively related to individual RCF. The IP model on the other hand, with its internal focus on stability and control, bureaucratic style, and formal procedures (Quinn & Rohrbaugh, 1983), is more likely to be negatively related to RFC. The OS model has the same flexible orientation as the HR model, but an external focus rather than an internal one. This type of active climate emphasizes innovation and change, which is achieved through means such as resource acquisition, adaption, and readiness, and should thus be expected to be positively associated with RFC. Finally, the RG model with its external focus, and stability and control orientation, has a strong goal orientation which may cause the trust and morale among the employees to suffer in times of uncertainty (Haffar et al., 2014; Patterson et al., 2005). Results suggesting that RG is positively related to resistance to change (Zammuto and Krakower, 1991, in
Gifford et al., 2002) indicate that the RG model should be negatively related to RFC. However, another factor valued within an RG climate is the focus on planning to achieve efficiency and organizational goals. Planning is found to be negatively related to psychological uncertainty, and indirectly positively related to job satisfaction through uncertainty (Rafferty & Griffin, 2006), as planning makes change more predictable and may reduce the novelty of the change. In a previous study of the Norwegian police Nilsen (2018) found RG climate to have a positive direct effect on RFC. This result is theoretically somewhat unexpected, but as the sample for the present thesis is similar to that of Nilsen’s study, this may be considered an opportunity to replicate this finding. Thus, the following hypotheses are proposed:

**H1a:** There is a positive direct effect of human resources climate on individual readiness for change.

**H1b:** There is a negative direct effect of internal process climate individual readiness for change.

**H1c:** There is a positive direct effect of open systems climate on individual readiness for change.

**H1d:** There is a positive direct effect of rational goals climate on individual readiness for change.

**Competing Values Framework and Work Fatigue**

Organizational structure and climate posed one of the five major categories of workplace stress discussed by Colligan and Higgins (2008), and as discussed above may thus also have an impact on work fatigue. To the author’s knowledge there has been relatively little research into the relation between organizational climate (particularly global climate) and work fatigue. However, studies of focused climates indicate that these may be related to work fatigue. Hystad et al. (2013) found that variance in mental fatigue and lack of energy was explained by organizational-level safety climate among seafarers working offshore, and Garrick et al. (2014) found that psychosocial safety climate moderated the effects of job demands on both fatigue and engagement. These studies imply that the climate and fatigue-relation may be on the rise in the consciousness of researchers, but the absence of literature on the subject serves to emphasize the need for further investigations. This thesis therefore aims to investigate how global organizational climate is related to fatigue in the police service.
A separate stream of research investigates the relationship between climate or culture and employee well-being or quality of work life. Goodman, Zammuto and Gifford (2001) examined organizational culture conceptualized through the CVF, thus making their findings particularly relevant for this discussion. Their results suggested that the HR model was positively, and the IP model negatively related to quality of work life factors. Hart and Cotton (2002) measured police officers’ perceptions of some selected climate factors (appraisal and recognition, coworker interaction, goal congruency, opportunities for development, participative decision-making, role clarity and supportive leadership), which strongly resemble general descriptions of important factors of an HR climate. In their study these climate dimensions had the strongest overall influence on police officers’ well-being. This is supported by several studies (e.g. Davey et al., 2001; Hassel & Brandl, 2009).

To the author’s knowledge have nobody previously examined the relation between global climate, particularly conceptualized through the CVF, and work fatigue, which makes the present study all the more interesting. As mentioned above, all four climate models are retained for the following hypotheses as well, due to research suggesting that the models are intercorrelated (Hartnell et al., 2011; Parker & Bradley, 2000). Because studies so far indicate that work fatigue indeed can be separated into three dimensions (Frone, Reins, & Ottenstein, 2018; Frone & Tidwell, 2015), all of them are also here retained for analysis. Note that the fatigue scales are reverse scored, so a higher score indicates a lower level of fatigue and vice versa.

After the initial testing of the Three-Dimensional Work Fatigue Inventory (Frone & Tidwell, 2015) the authors suggested that only work conditions that deplete or renew energetic resources are related to fatigue. This, in conjunction with the results discussed above suggests that values associated with an HR climate may contribute to preventing or reducing work fatigue by aiding in development and protection of employee resources. As Goodman et al. (2001) found the IP model to be negatively related to quality of work life, and due to the bureaucratic values associated with the model, an IP climate is expected to be negatively associate with work fatigue. The OS climate’s focus on resource acquisition and ability to adapt may also affect how employees respond to and handle job demands, so for this thesis it is suggested that an OS climate is positively related to fatigue, as a climate for resource acquisition may help prevent development of or reduce work fatigue. The goal achievement focus associated with the RG climate combined with tight internal control may be expected to be negatively associated with work fatigue.

Hence, based on the discussion above the following hypotheses are proposed:
**H2a:** There is a positive direct effect of human resources climate on physical fatigue.

**H2b:** There is a positive direct effect of human resources climate on mental fatigue.

**H2c:** There is a positive direct effect of human resources climate on emotional fatigue.

**H3a:** There is a negative direct effect of internal process climate on physical fatigue.

**H3b:** There is a negative direct effect of internal process climate on mental fatigue.

**H3c:** There is a negative direct effect of internal process climate on emotional fatigue.

**H4a:** There is a positive direct effect of open systems climate on physical fatigue.

**H4b:** There is a positive direct effect of open systems climate on mental fatigue.

**H4c:** There is a positive direct effect of open systems climate on emotional fatigue.

**H5a:** There is a negative direct effect of rational goals climate on physical fatigue.

**H5b:** There is a negative direct effect of rational goals climate on mental fatigue.

**H5c:** There is a negative direct effect of rational goals climate on emotional fatigue.

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**Work Fatigue and Readiness for Change**

One of the factors that are found to affect individual RFC and how employees perform in change initiatives is their confidence in their own abilities (Armenakis et al., 1993; Cunningham et al., 2002; Holt et al., 2007; Vakola, 2012). A review of research on change reactions suggests that self-efficacy plays a central role in RFC (Oreg et al., 2011), as it was overall positively associated with acceptance, readiness, engagement, and commitment, making it an attractive concept to study in this context.

While research on the effect of work fatigue on self-efficacy appears to be limited, it can be argued that the overextension of resources that leads to fatigue may also cause lowered self-efficacy. If employees feel they no longer have available the resources necessary to deal with job demands this may decrease their confidence in their abilities, which in turn is expected to affect RFC. However, building on Frone et al. (2018), there are grounds to suggest that the different dimensions of work fatigue have different relations to outcome variables. Frone et al. found that while mental and emotional fatigue predicted lower levels of work engagement, physical fatigue did not. Based on this it is expected that only mental and emotional fatigue affect RFC.
On the measurement of fatigue used for this study a higher score implies lower levels of fatigue, meaning that a positive effect of fatigue on RFC suggests that lower levels of fatigue are related to higher levels of RFC. In conjunction with the discussion above, this leads to proposing the following hypotheses:

**H6a:** Physical fatigue is unrelated to individual readiness for change.

**H6b:** There is a positive direct effect of mental fatigue individual readiness for change.

**H6c:** There is a positive direct effect of emotional fatigue on individual readiness for change.

**Mediation of the Relationship Between Climate and Readiness**

Following from the discussions above, which led to the hypothesized direct effects between the variables in this study, it is also reasonable to examine whether work fatigue mediates the relationship between organizational climate and RFC. While work climates often are studied as mediators of different relationships, fewer studies have focused on mediators between work climate and outcomes (Kuenzi, 2008). To test if the fatigue dimensions mediate the relationship between the different models of organizational climate and RFC, the following hypotheses are proposed:

**H7:** There is an indirect effect of human resources climate on individual readiness for change through physical, mental, and emotional fatigue.

**H8:** There is an indirect effect of internal process climate on individual readiness for change through physical, mental, and emotional fatigue.

**H9:** There is an indirect effect of open systems climate on individual readiness for change through physical, mental, and emotional fatigue.

**H10:** There is a indirect effect of rational goals climate on individual readiness for change through physical, mental, and emotional fatigue.
In sum, there are 23 hypotheses proposed in this thesis. These are presented graphically in figure 2.

![Graphical representation of the hypothesized relations among the variables](image)

**Figure 2. Graphical representation of the hypothesized relations among the variables**

*Note: Hypotheses H7, H8, H9, and H10 (concerning the mediations of the relationships between the climate models and RFC, through the three dimensions of fatigue), are not displayed in the figure.*

### Method

**The Project**

This study is part of an ongoing collaborative research project between the research department at the Norwegian Police University College and the department of Work and Organizational Psychology at the University of Oslo. After the events in Oslo and on Utøya on the 22nd of July 2011, and in relation to the national reform of the Norwegian Police (Nærpolitireformen), there has been a substantial focus on the culture and climate in the Police as an organization (Christensen et al., 2018; Difi, 2017; Johannessen, 2013). Therefore, the main aim of the project is to examine the organizational climate among employees with
different areas of expertise, and from different work units and districts in the Norwegian Police.

This thesis focuses on the relationship between organizational climate, as defined by the Competing Values Framework (Kuenzi, 2008; Quinn & Rohrbaugh, 1983), and how it relates to individual readiness for organizational change (Vakola, 2014). The thesis will also examine work fatigue (Frone & Tidwell, 2015) and whether the concept mediates the relationship between organizational climate and readiness for change.

**Data Collection**

A total of 1005 participants with different areas of expertise were invited to participate in the study in May 2018. The survey was distributed electronically along with information about the study from both the chief of police and the project manager. Participants were asked to base their responses on their personal experiences and perceptions. They were informed of the importance of answering all questions to ensure representativeness. The survey contained nine measures, in total 146 items in addition to questions regarding demographics such as gender, age, area of expertise, and length of employment in the service. This thesis will only use the scales measuring organizational climate, readiness for change, and work fatigue. These measures are presented below.

**Sample**

The survey was distributed among employees in one of the new police districts, at an early stage of the restructuring process. All cases with missing data were removed before proceeding with the analysis, leaving a sample of N=216 and yielding a response rate of 21 %. 43 % of the respondents were female, and 57 % were male (0,5 % did not provide gender information). Age groups ranged from “23 years or younger” to “64 years or older” with the most frequent age groups being 48-51 years (21,8 %), 44-47 years (13 %), and 56-59 years (12,5 %).

**Measures**

This thesis applies three different scales for measuring the constructs of interest: organizational climate, work fatigue, and readiness for change. A complete list of items in Norwegian can be found in Appendix 1. All negatively worded items were reverse coded before proceeding with the analysis. Each measure’s degree of internal consistency – the degree to which responses are consistent across items – was evaluated by calculating their Cronbach’s alpha, where reliability generally is considered adequate for values of $\alpha \geq .70$, very good for values of $\alpha \geq .80$, and excellent for values of $\alpha \geq .90$ (Kline, 2011).
Organizational climate. The measure of organizational climate is based on the Competing Values Framework (Quinn & Rohrbaugh, 1983) and Kuenzi’s (2008) global work climate and aims to capture the perceived climate at an organizational unit level by aggregating individual perceptions. The scales have been translated by the Work and Organizational Psychology research group at the University of Oslo, and previously used and evaluated in a study of the measurement of Norwegian police climate (Koritzinsky, 2015). This thesis used all four scales to measure the four different models of climate found in the CVF. The scales originally consisted of 8 items measuring the Human Resource Model ($\alpha=.87$), 7 items measuring the Internal Process Model ($\alpha=.88$), 7 items measuring the Open Systems Model ($\alpha=.88$), and 7 items measuring the Rational Goal Model ($\alpha=.87$). The scales apply a 5-point Likert normative scale response format, ranging from definitely false (1) to definitely true (5). Example items are: “In my organization each employee has an opportunity for growth and development.” and “In my organization employees are flexible enough to take on new tasks.”

Work fatigue. Work fatigue was measured using the Three-Dimensional Work Fatigue Inventory (3D-WFI), developed by Frone & Tidwell (2015) to capture three different dimensions of fatigue. The scale has been translated by the Work and Organizational Psychology research group at the University of Oslo. It originally consisted of 6 items measuring physical fatigue ($\alpha=.94$), 6 items measuring mental fatigue ($\alpha=.96$), and 6 items measuring emotional fatigue ($\alpha=.97$). The scales apply a 5-point Likert scale, ranging from everyday (1) to never (5), meaning that higher scores imply low levels of work fatigue. Example items are: “During the past 12 months, how often did you feel physically worn out at the end of the workday?” (physical fatigue), “During the past 12 months, how often did you have difficulty thinking and concentrating at the end of the workday?” (mental fatigue), and “During the past 12 months, how often did you want to avoid anything that took too much emotional energy at the end of the workday?” (emotional fatigue). The 3D-WFI is a relatively newly developed scale of measurement and although it has not yet been used extensively in the literature, it has been promising so far.

Readiness for change. Individual readiness for change has been found to be important to the successful implementation of organizational changes (Jones, et al. 2005; Vakola, 2014), and is hence measured as the outcome variable in this study. The measure of RFC originally consisted of 6 items developed by Vakola (2014), translated to Norwegian by the Work and Organizational Psychology research group at the University of Oslo (Koritzinsky, 2015). The scale applies a 5-point Likert scale, ranging from definitely false (1) to definitely true (5). An
example items is: “I usually try to convince people in my company to accept change”. A seventh item has been added to the original six, namely item RFC7, which can be found in the list of items in Norwegian in Appendix 1. The item may be translated to “I am confident that I can adapt quickly to changes on my unit.” (author’s translation). The item was formulated by the research group, motivated by Holt et al. (2007) and their discussion of the role of self-efficacy in readiness for change. The scale displayed very good reliability with $\alpha=.85$.

**Analysis**

**Preliminary analysis.** Preliminary and descriptive analysis was conducted using the IBM SPSS 25 software. Before proceeding with structural equation modeling the data was evaluated for normality, examining the degrees of skewness and kurtosis. Skew is considered serious for values of +/- 3.0, while kurtosis is considered problematic for values of +/- 10.0 (Kline, 2011). None of the items exhibited problematic values as skewness values ranged from -1.257 to 0.265, and kurtosis values ranged from +/- (-1) to +/- 1, with one value as high as 2.42. Linearity was assessed by examining the scatter plots between each construct, and all were found to be satisfactory.

**Structural Equation Modeling.** The hypotheses in this thesis were tested using structural equation modeling (SEM), conducted using IBM SPSS Amos 25. SEM is a collection of statistical techniques which allows you to simultaneously examine multiple relationships between one or more independent variables and one or more dependent variables (Ullman & Bentler, 2013), and represents an extension of general linear modeling procedures (Lei & Wu, 2007). One major advantage of using this method is that measurement error is estimated and removed from the analysis, leaving only common variance. Another advantage is its ability to test indirect effects.

There are different types of SEM, but the method employed for this thesis entailed the specification and testing of a measurement model and a structural model. The measurement model is also known as confirmatory factor analysis (CFA). The CFA relates the measured variables to latent factors and is used to verify the appropriateness of the measurement model before proceeding with regression. The structural model is then used to test the hypothesized relationships among the latent variables (Ullman & Bentler, 2013). The model produces an estimated covariance matrix which is then compared to an empirical covariance matrix (i.e. your observed dataset). The fit of the estimated model is then assessed based on how close the model fits your observed dataset. To determine the fit of the model the researcher evaluates different estimates produced by the analysis. The global fit of the overall model is assessed by
evaluating a range of goodness-of-fit indices, and the local fit is assessed by examining residuals, modification indices, and the size and significance of parameter estimates (Kline, 2011). Based on these indices the researcher then must decide whether to retain, modify or reject the model. If the model fits the data well, it is thought to be consistent with the reality the data has captured, and the model is retained. If the model fits the data poorly, the model is rejected. SEM can thus be thought of as a disconfirmatory technique, as the evaluation of the model fit allows the researcher to falsify their hypothesized model (Kline, 2011).

The goodness-of-fit (GOF) indices estimate global fit by evaluating the correspondence of the model to the data (Kline, 2011). These tests indicate how well the model reproduces the model reproduces the covariance matrix. The test statistics applied in this thesis are chi-square, Comparative Fit Index, Tucker-Lewis Index, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residual.

Chi-square ($\chi^2$) is the most basic model test statistic and assesses whether the specified model is significantly different from the observed covariance matrix. A $\chi^2$ which is not significant implies that the model is consistent with covariance data, but whether the model actually is correct remains unknown (Kline, 2011). However, the $\chi^2$ is extremely sensitive to sample size, and may come out as significant despite the model fitting the data reasonably well (Kline, 2011; Lei & Wu, 2007). In addition to sample size, $\chi^2$ can also be affected by multivariate non-normality, bigger correlations among observed variables, and high proportions of unique variance (Kline, 2011). Due to these weaknesses it has been termed a notoriously bad measure of fit (Ullman & Bentler, 2013). Several goodness-of-fit-indices have been developed to supplement the $\chi^2$, some of which will be applied in this study and are presented in the following.

The Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) are both incremental fit indices, which measure the relative improvement of the specified model compared to a baseline model which assumes zero covariance among the observed variables (Kline, 2011). Values on these indexes range from 0 to 1, where higher values indicate better model fit. Rules of thumb for threshold values indicating an acceptable fit range from .90 to .95 or above for good fit (Kline, 2011; Lei & Wu, 2007).

The Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) are approximate fit indices. They measure the extent to which the specified model reproduces the covariance matrix of the observed dataset and provide descriptive information about model fit (Kline, 2011; Lei & Wu, 2007). The indices are scaled as a badness-of-fit index, meaning that values closer to 0 indicate a better fit. A RMSEA
value of < .05 has been suggested as a rule of thumb for good model fit (Kline, 2011). The SRMR is based on the differences between observed and predicted covariances, meaning that these residuals should approach 0 for good model fit. A SRMR of < .08 is suggested a as a threshold value indicating good model fit (Kline, 2011).

As a model solution may be improper despite decent GOF-indices, it is also important to examine the local fit of the model. This is done by assessing residuals, the magnitude and direction of individual parameter estimates (Kline, 2011; Lei & Wu, 2007). Residual values of over four raises concerns and indicate a problematic item. Factor loadings in the measurement model should be at least .50, but values of more than .70 are preferred (Hair et al., 2014).

Reliability and validity. As hypothetical constructs used in research are latent and cannot be directly observed, researchers must assess whether the scores measure what they are designed to measure. This is known as construct validity. While there is no established definitive test of construct validity, researchers usually test particular facets of it (Kline, 2011). Convergent validity concerns whether a set of variables can be said to measure the same construct, which is demonstrated by at least moderate intercorrelations between them. On the other hand, if the intercorrelations are low they are said to exhibit discriminant validity, meaning that variables are presumed to measure different constructs. Thus, items should load highly on one factor and low on others, and different constructs should not be highly correlated.

In SEM-analysis the internal consistency of the scales is also assessed by calculating their composite reliability (CR), which is represented by the ratio of its true score variance divided by its observed score variance (Peterson & Kim, 2013). CR has become a popular alternative to coefficient alpha as the α tends to slightly underestimate the true reliability of a measure. Acceptable reliability is demonstrated by CR values of .70 or higher (Hair et al., 2014).

Sample size. There are debates around what constitutes a sample size suitable for analysis using SEM, as the method is vulnerable to small sample sizes (Kline, 2011). Generally, a sample of at least 200 cases should suffice, but this depends on the complexity of the model to be tested. For maximum likelihood estimation, which is the method applied for this thesis, Kline suggests the N:q rule as a useful rule of thumb, where N = the number of cases in the sample, and q = the number of model parameters that require statistical estimates. Ideally the ratio of N to q would be at least 20:1, and should the ratio decrease below 10:1 the results would be less trustworthy. This implies an ideal ratio of 20 cases per parameter in the
model. In this thesis the ratio is about 11:1 for structural model 2, and 216 respondents can thus be considered an adequate sample for this study.

Ethical Considerations

The study was approved by the Norwegian Centre for Research Data. The survey contained information about the purpose of the study, data storage, that participation was voluntary and the right to withdraw at any time, and that individual responses would not be disclosed. There were no known benefits or detriments of participating in the study.

Results

Results of the Descriptive and Preliminary Analysis

The means, standard deviations, Cronbach’s alpha and inter-correlations between the sum scores of all constructs are presented in Table 1. The results displayed low to large correlations among all the constructs. The largest correlations were among the climate dimensions, where all were between .70 and .80. All construct averages were above the response scale center (3), indicating a positive degree of all constructs.

Table 1

<table>
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<th>4</th>
<th>5</th>
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<td>5. PHYS</td>
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<td>.176**</td>
<td>.141*</td>
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<td>6. MENT</td>
<td>3.20</td>
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<td>.186**</td>
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<td>.173*</td>
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<td>.143*</td>
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Note: Constructs 5, 6, and 7 are reverse scored. This means that higher scores indicate lower levels of fatigue.

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Hypothesis Testing – Structural Equation Model

Measurement model. The first CFA constructed in Amos (model 1) contained all
items on their respective latent variables and did not meet any of the criteria for good model fit (see table 3). The path diagram for model 1 can be found in Appendix 2. Respecifications of the model were made stepwise while checking the fit indices for improved fit. RFC4 was excluded due to low factor loadings. A CFA done in IBM SPSS on the readiness for change scale alone also showed that model fit for that scale was much improved by removing the fourth item. The phrasing of item ("I believe that I am more ready to accept change than my colleagues") may cause it to have lower criterion-related validity compared to the rest of the scale. The scale generally focuses on the individual’s reactions to change, whereas RFC4 may make the participants focus more on comparing themselves to their colleagues.

An exploratory factor analysis (EFA) was performed in IBM SPSS on the fatigue scale due to higher covariances on item E1 in the CFA. The analysis was run with Promax rotation, as the variables in the preliminary analysis were found to be correlated. The EFA showed that item E1 loaded on both emotional and mental fatigue, and that its loadings were considerably lower than those of the other items. Thus, this item was removed. Even though the variables were correlated, a significant t-test and the factor analysis supported the three-factor solution suggested by Frone & Tidwell (2015). The pattern matrix is presented in table 2.

An EFA was also performed on the CVF scales. As the climate variables were found to be highly correlated, Promax rotation was applied for this analysis as well. The EFA uncovered that items HR7 and HR8 loaded highly on a factor of their own. These two items were thus excluded. Both items focus on the opportunities for individual development at work and are very similarly phrased, which can explain why they

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<td>M3</td>
<td></td>
<td></td>
<td>.943</td>
</tr>
<tr>
<td>M1</td>
<td></td>
<td></td>
<td>.885</td>
</tr>
<tr>
<td>M2</td>
<td></td>
<td></td>
<td>.830</td>
</tr>
<tr>
<td>M5</td>
<td></td>
<td></td>
<td>.825</td>
</tr>
<tr>
<td>M4</td>
<td></td>
<td></td>
<td>.792</td>
</tr>
<tr>
<td>M6</td>
<td></td>
<td></td>
<td>.665</td>
</tr>
</tbody>
</table>

Note: Extraction method: Maximum Likelihood. Rotation method: Promax with Kaiser Normalization. Factor loadings below .30 are not displayed.
formed an additional factor. Items IP5, IP6, and IP7 were found to exhibit high loadings on the OS dimension and were subsequently excluded as well. It can be argued that these three items seem to relate to values expressed through the items on the OS model more than the other items measuring the IP model. Items IP1 through IP4 focus more on unit procedures and rules. Lastly, RG5 was excluded due to a low factor loading, which may be caused by the phrasing turning the participants’ attention toward rewards at work rather than whether goal achievement is an emphasized value.

Based on the modification indices, the error terms between RG1 and RG2, and the error terms between P1 and M1 were allowed to covary. The RG items both seemed to tap into the same sentiment and were presented in consecutive order, which may affect the response patterns. P1 and M1 were very similarly phrased.

Table 3

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA [CI]</th>
<th>SRMR</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2602.334**</td>
<td>1349</td>
<td>1.92</td>
<td>.862</td>
<td>.870</td>
<td>.066 [.062-.070]</td>
<td>.0643</td>
<td>All items are included.</td>
</tr>
<tr>
<td>2</td>
<td>1572.47**</td>
<td>959</td>
<td>1.63</td>
<td>.920</td>
<td>.926</td>
<td>.055 [.050-.059]</td>
<td>.0574</td>
<td>Items HR7, HR8, IP5, IP6, IP7, RG5, RFC4, and E1 are excluded.</td>
</tr>
</tbody>
</table>

** Chi-squares significant at p = .001

1 90% confidence interval of the RMSEA

A path diagram of the respecified and improved measurement model (model 2) can be found in Appendix 3. GOF indices for model 2 are presented in table 3, showing an acceptable model fit. When modifying a model, researchers risk overspecifying the model to fit the sample, which can limit the generalizability of the findings beyond that specific sample. Therefore, it may be unwise to continue modifying the model when it fits well (MacCallum, Roznowski, & Necowitz, 1992). It was thus decided to stop modifying the model after excluding the afore mentioned items.

**Reliability and validity.** Composite reliability (CR) was above .70 for all constructs in the final measurement model, indicating that reliability and convergent validity for all scales were satisfactory. Human Resource climate CR = .89, Internal Process climate CR =
.88, Open Systems climate CR = .92, Rational Goal climate CR = .90, Readiness for change CR = .90, physical fatigue CR = .93, mental fatigue CR = .95, and emotional fatigue CR = .96.

**Structural model.** Once a measurement model of acceptable fit has been developed, the next step in SEM is to specify the structural model in order to test all hypothesized relationships. This is done by drawing the paths between the latent variables; from the predictor variables to the outcome variables. Structural model 2 is presented in Appendix 4. The estimates between the latent variables are interpreted as standardized regression coefficients (β), the estimates between the latent variables and the indicators are factor loadings, and the estimates connected to double headed arrows are correlations.

Table 4

<table>
<thead>
<tr>
<th>Structural model Goodness of Fit Statistics</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>χ²</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
</tr>
<tr>
<td>2</td>
<td>1572.47**</td>
</tr>
<tr>
<td>3</td>
<td>1628.53**</td>
</tr>
</tbody>
</table>

** Chi-squares significant at p = .001
1 90 % confidence interval of the RMSEA

The goodness of fit indices for structural model 2 (see table 4) indicate that the model fits well with the observed data at the global level of fit. However, upon closer inspection of the regression coefficients at the local level of fit it became evident that further adjustments were necessary. The paths from HR to RFC, from OS to physical fatigue, and from OS to emotional fatigue were all 0. The only significant path was from RG to RFC (β = .84, p = .009). The CVF dimensions were highly intercorrelated, displaying coefficients up to .88. In SEM-analysis the beta weights are adjusted for any intercorrelations among the latent variables (Kline, 2011), which means that they only display their unique contributions.

Because of the high intercorrelations between the CVF quadrants in model 2, it was decided to further modify it by adding a second order factor for the climate variables. Model 3, with the second order factor *Climate*, is displayed in figure 3, and its goodness of fit indices
are presented in table 4. Although the fit of this model was marginally poorer compared to model 2, the standardized regression weights indicated clearer relationships between the latent variables.

Table 5 displays the direct, indirect, and total effects between the latent variables. The direct effect of Climate on RFC, and mental and emotional fatigue were the only significant paths in the model. The effect of Climate on physical fatigue was almost significant on a .05-level (p=.053).

Figure 3. Structural model path diagram
Note: Estimation method: Maximum Likelihood. Displaying standardized coefficients. Circles represent latent variables (factors), while rectangles represent observed variables (indicators). Circles with $e^{**}$ denotes error variance.
Table 5
Estimates of direct, total, and indirect effects between the latent variables

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Coefficients</th>
<th>Standard Error of b</th>
<th>90 % CI of the indirect effect</th>
<th>Total effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate → PHYS</td>
<td>.14</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate → MENT</td>
<td>.23**</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.31)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate → EMOT</td>
<td>.19**</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.25)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate → RFC</td>
<td>.46**</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.39)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS → RFC</td>
<td>.06</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.04)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MENT → RFC</td>
<td>-.13</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-.08)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMOT → RFC</td>
<td>.17</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate → PHYS → RFC</td>
<td>.01</td>
<td>.05</td>
<td>-.01 -.04</td>
<td>.47</td>
</tr>
<tr>
<td>Climate → MENT → RFC</td>
<td>-.03</td>
<td>.03</td>
<td>-.01 -.01</td>
<td>.43</td>
</tr>
<tr>
<td>Climate → EMOT → RFC</td>
<td>.03</td>
<td>.05</td>
<td>0 -.08</td>
<td>.49</td>
</tr>
</tbody>
</table>

Note: RFC = readiness for change, PHYS = physical fatigue, MENT = mental fatigue, EMOT = emotional fatigue, CI = confidence interval.

1 Displaying standardized coefficients: \( \beta \), numbers in parentheses are the unstandardized coefficients: \( b \)

** Coefficient is significant at the 0.01 level.

Discussion

The aim of this study was to further explore the relationship between organizational climate and individual readiness for change, and how this relationship may be affected by work fatigue. This was investigated in the Norwegian police service in the context of a major restructuring process. The thesis has more specifically investigated whether the climate models of the Competing Values Framework could predict individual readiness for change, and if work fatigue mediated this relationship. A total of 23 hypotheses were developed and presented in a structural equation model.

The four climate models derived from the CVF were used as predictors of readiness
for change for the majority of the hypotheses. Thus, the respecification of the structural model by adding Climate as a second order factor causes all these hypotheses to be rejected. This applies for hypotheses 1a through 5c, regarding the relationships between the climate models and fatigue and RFC, and 7 through 10, regarding the indirect effect of the climate models on RFC through the fatigue dimensions.

The remaining hypotheses 6a, 6b, and 6c concerned the relationship between the three dimensions of work fatigue and individual RFC. As these paths were not significant, hypothesis 6b and 6c were rejected. Hypothesis 6a stated that physical fatigue would be unrelated to RFC, and as this relationship was not significant in the analysis, the hypothesis was retained.

However, despite having to reject most initial hypotheses the final model does support the suggested relationships between organizational climate and both RFC and work fatigue. Climate had a positive direct effect on RFC, mental, and emotional fatigue (p < .01) (see table 5). The CVF can be argued to measure more persistent and stable states compared to the fatigue concept, which is more dynamic and goes through changes at a faster pace. This might explain why while climate was related to fatigue, it did not explain a large amount of the variance in the latter variable. The more dynamic nature of fatigue can also explain why it was not related to RFC, as fatigue levels could change too rapidly to have a stable effect on perceptions of readiness.

**Implications for Theory and Practice**

This thesis contributes to psychological research by adding to the knowledge of organizational climate, and how it relates to readiness for change and work fatigue. It increases the theoretical and operational understanding of climate in general, and in the Norwegian police specifically. The results illustrate that the CVF is suitable for examining organizational climate in the police, as the responses indicate that it captures aspects of work that are relevant for the respondents. The study additionally suggests that global climate affects work fatigue and RFC. Furthermore, results indicate that both the 3D-WFI and the measure of RFC capture important aspects of police work and can be applied to investigate their respective constructs in the Norwegian police.

**Readiness for change.** As a substantial amount of change initiatives are found to fail (Burnes, 2011), it is essential to understand why and what to do about it. One of the most important factors related to successful implementation of organizational changes is that the employees are psychologically ready to support the change (Armenakis et al., 1993; Jones et
al., 2005). While earlier research on the relationship between the CVF and RFC is limited, it has indicated that HR and OS climates are positively related to readiness (Haffar et al., 2014; Jones et al., 2005). This thesis’ addition of the second order factor Climate removes any possible effects of competing values on readiness and makes it impossible to say anything about the relationships between the different quadrant of the CVF and RFC. This does make it more difficult to assess how different dimensions of the climate affects readiness attitudes. However, the results suggest that the CVF measures a global climate in the police and that climate was positively related to RFC.

The planned change approach involves a series of steps through which changemakers identify the need for change, work to understand the problem, develop an appropriate plan of action, implementation of the changes, and finally, integration of the changes into everyday operation (Burnes, 2017). For this process to be efficient and successful the openness and readiness of the employees to these are central, particularly when the attitudes and behaviors of the employees themselves are part of the change goals. While the planned and emergent approach to change may appear to be competitors for the title of “best approach”, they should rather be regarded as complementary (Burnes, 2004). The environment the police is operating in and the challenges they face are constantly developing, suggesting that going forward, the organization should also focus on emergent changes to continuously adapt to the changing conditions. Furthermore, the emergent approach also views change as a learning process (Burnes, 1996), which can be considered appropriate for the police as a problem-solving organization (Gottschalk, 2007).

Research suggests that a significant explanation for failure in implementing changes may be that values of the intervention are not aligned with the existing values of the employees (Burnes & Jackson, 2011). This emphasizes the importance of examining and assessing the organization’s climate before initiating a change process. Doing this provides a more accurate and comprehensive understanding of the current situation in the organization, and thus of how an intervention should be designed to be more likely to succeed. A perceived appropriate alignment of values may next affect employees’ RFC and intention to support the change.

Lastly, this thesis also contributes to the development of the scale applied for measuring individual RFC. It originally consisted of 6 items (Vakola, 2014), and one more was added for this study. The seventh item (RFC7) was designed to account for the self-efficacy aspect of RFC discussed by Holt et al. (2007) (“I am confident that I can adapt quickly to changes on my unit.”, author’s translation). The item performed well in the analysis
with a factor loading of .83. Item RFC4 (“I believe that I am more ready to accept change than my colleagues”) on the other hand had to be excluded from both the present study and has previously been excluded from studies on the Norwegian police with a different sample (Julsrud, 2018; Motland, 2018; Nilsen, 2018). This may suggest that at least for studying RFC in the police this item does not measure what it is designed to measure, and it should be discussed whether to retain this item in future research. However, the results in the thesis otherwise support the validity and reliability of the Norwegian translation of the scale and shows that it is suitable for measuring RFC in the Norwegian police.

**Organizational climate.** Climate literature reviews have found that organizational climate affects nearly every aspect of organizational life and is strongly related to job attitudes (Kuenzi, 2008; Kuenzi & Schminke, 2009). This is supported by the impact of climate on RFC found in this thesis. This study contributes to the discourse regarding the CVF and of predictors of RFC, as there are few studies examining both all CVF quadrants together as predictors, and all CVF quadrants as predictors of RFC. However, when developing the hypotheses, it was expected that the results would show different relations between the four quadrants of the CVF and the outcome variables, which did not turn out to be the case. In structural model 2 it was only an RG climate that had a significant positive relation to RFC (supporting Nilsen, 2018) due to the high correlations between the climate models. In SEM analysis, when so much of the variance was explained by one variable, there was no variance left for the remaining variables to predict.

The fact that this study found the mean values for all four climate models to be just above the scale center, combined with the high correlations between them, suggests that the perceived climate in the Norwegian police is complex. Additionally, the mean values for the climates were very similar, indicating that no dominant model could be found in the current sample. Previous master theses on this project have only investigated one or two climate models as opposed to using all four quadrants (e.g. Nilsen, 2018; Johnsen, 2018), which may have underemphasized the complexity that can be found in such a large organization. Therefore, using all models may have given a more holistic picture of how organizational practices are perceived and valued in the Norwegian police. The results thus also support Kuenzi’s (2008) view of the CVF as a measure of a global climate. Compared to a narrower facet-specific approach to measuring climate, a global approach has the advantage of providing a snapshot of how the whole organization functions at the time of measurement. It can be argued that this is particularly relevant to climate investigations conducted prior to initiating a change process, and particularly such large-scale changes as those performed in
In the development of the CVF Quinn and Rohrbaugh (1983) emphasized the contradicting values found in the quadrants of the model, which since have been focused on in the research literature on both culture and climate. Cameron and Quinn (2006) have examined many organizations and claim that over 80% of them had a clearly dominant culture. They suggest that whether an organization needs a balanced or dominant culture depends on the circumstances of the individual organization, the environment they operate in, and the challenges they face. However, the focus on contradiction and competition is argued against by research suggesting that the four climate models can coexist in the same organization (Parker & Bradley, 2000) and that they are moderately to highly intercorrelated (Hartnell et al., 2011). This stream of research is supported by the results of this study. It may indicate that the models work together rather than compete, and that researchers should account for this when investigating or mapping climates. Focusing excessively on one type of climate without keeping in mind how it is related to others might cause practitioners to make flawed judgements about the present climate in an organization and what interventions to initiate in a change process.

This disagreement about the relationships between the CVF quadrants may be tied to the choice of response scales. The ipsative response scale is a forced choice scale and has been popular for researching organizational values (Cameron & Quinn, 2006; van Eijnatten, van der Ark, & Holloway, 2014), despite the serious statistical limitations associated with such forced choice formats (Hicks, 1970). Scores are said to be ipsative when the sum of the raw scores are constant for any individual (Baron, 1996). For measurement of the CVF quadrants this typically entails asking respondents to distribute 100 points between the four models and the resulting score for each model represents its relative strength compared to the other three models. The scores are thus dependent on each other, which is a violation of one of the basic assumptions of classical test theory; the independence of error variance (Baron, 1996). This makes the data impossible to analyze using methods that use correlations or covariances as input; it is either technically impossible due to singular covariance matrices, or possible, but results in a meaningless output (van Eijnatten et al., 2014). The Likert scale response format on the other hand, assumes items are independent and does not result in a constant sum of scores, which makes it suitable for statistical analysis.

Cameron and Quinn (2006) have indeed found different results depending on which type of scale was used. Their research showed that ipsative scales resulted in more differentiation in ratings of culture models, while Likert scales resulted in less, as respondents
then tended to rate cultures more equally. For this reason, the authors consciously use the
ipsative format to force respondents to rate one quadrant higher than the others, to highlight
the uniqueness of the individual cultures. This may cause the results to overemphasize one
type of culture or climate and amplify the assumption that there must be tradeoffs between the
quadrants.

Another issue with the ipsative response format is that the data cannot be used for
normative measurement, as scores cannot be compared across individuals (Baron, 1996;
Hicks, 1970; van Eijnatten et al., 2014). This makes it unsuitable for quantitative studies such
as this one, as global climate here is measured by aggregation of individual responses, in line
with the definition of organizational climate as the employees’ shared perceptions of their
immediate environment. Therefore, this line of research requires the use of a Likert scale
response format. This is also essential in order to analyze the data with tools such as a SEM
analysis.

The climate literature is mixed on the existence of a second order factor for types of
global climates (Kuenzi, 2008), and both Kuenzi and Patterson et al. (2005) neither predicted
nor found a second-order factor structure in their studies building on the CVF. In addition, the
CFAs Kuenzi performed for her dissertation indicated that the models in the framework are
distinct from each other. Patterson et al. argue that the CVF emphasizes that organizations
should be understood based on the relative importance they give to the competing values, and
that organizations would not emphasize them equally. The results from the present study have
not indicated that there is a dominant climate model in the police. Hence, this suggests that
the organization has a complex climate and emphasizes the importance of examining it as a
part of the process in a planned change approach.

**Work fatigue.** This thesis sought to examine the relationship between work fatigue
and both global climate and RFC. Firstly, the effect of a global climate on work fatigue has
received little attention so far. Frone and Tidwell (2015) suggested that only work conditions
that deplete or protect and renew energetic resources are related to fatigue. The results of this
study showed that a global climate was positively related to mental and emotional fatigue,
indicating that the climate lead to lower levels of fatigue for these dimensions. The relation
between climate and physical fatigue, however, was not significant. This supports Frone and
Tidwell’s finding that physical job demands were more strongly related to physical fatigue
than mental and emotional job demands. Taken together, these results suggest that the
perceptions of policies and practices in the organization affects the mental and emotional
tiredness and functional capacity of employees but does not affect physical functioning.
The climate variable was expected to explain somewhat more of the variance in work fatigue, but as mentioned above, one explanation for this may be that whereas global climate is a rather consistent and stable concept, fatigue can be seen as considerably more dynamic and easier to affect. Fatigue levels might fluctuate from day to day, or even from hour to hour, depending on the stressors the employees are faced with and whether they are followed by an opportunity to recharge.

On the other hand, work fatigue was not found to be significantly related to RFC. In the development of the hypotheses it was suggested that being fatigued might lower self-efficacy, which in turn could reduce individual RFC. As Oreg et al. (2011) have suggested that self-efficacy plays a central role in RFC these results may indicate that work fatigue did not affect employees’ self-efficacy in this sample.

Lastly, this thesis has also contributed to the validation of the 3D-WFI as a tool through which to conceptualize and measure work fatigue. The factor analysis supported the three-dimensionality of the construct, the scale exhibited a satisfying construct validity, and small to medium correlations with the other constructs in the study. Furthermore, the results support the Norwegian translation of the scales and their continued use to measure work fatigue in the Norwegian police.

**Limitations**

There are some theoretical and methodological limitations in this study that need to be addressed. First, the study uses a cross-sectional research design. Here, all variables are measured at the same point in time, which makes it impossible to infer direction of causality between the variables. This means that while the study suggests a positive association between climate, and work fatigue and RFC, respectively, the causal directions may be different from what was hypothesized. The positive association may also be explained by variables not included in the study. Further research would be necessary to establish causality.

Second, the results may be affected by common method variance (CMV), which is a common challenge in behavioral research. CMV refers to “variance that is attributable to the measurement method rather than to the constructs the measures represent” (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003, p. 879). Measurement error may deflate or inflate the correlations observed between the measures, and thus pose as an alternative explanation for the relationships between the variables. There are a number of biases which might affect how respondents answer the survey questions, and only a few will be presented here. A more comprehensive overview of potential sources of CMV can be found in Podsakoff et al.
The present study focuses on individual perceptions and measures these with self-report measures, which increases the risk of CMV. One reason for this is because the data on both predictor and criterion variables comes from the same source, also called common rater effects. A second cause of CMV is social desirability bias, which is described as the individual’s tendency to attempt to present themselves in a favorable light; this can both bias the answers on the survey and distort the true relationship between variables. Another cause may be acquiescence biases, also known as yea-saying and nay-saying. This refers to the tendency to agree or disagree with items independently of their content (Podsakoff et al., 2003). A final bias example is the central tendency bias, which causes respondents to avoid using the extreme response categories and may lead answers to regress towards the scale midpoint (Baron, 1996). These potential causes of CMV may explain some of the variation in the sores in the study and might have e.g. inflated the intercorrelations between the climate models. There are methods one can use to try to counteract CMV. One of them is applying a mixed methods design, where measures are obtained from different sources. For this study the results could have been supplemented using interviews. However, a mixed method design may be a lot more demanding to implement, both in terms of time, effort, and money (Podsakoff et al., 2003).

Third, the generalizability of the findings in this study may be limited. The survey was distributed to only one police district, and the response rate was low. Therefore, the extent to which the results can be generalized to other districts and whether it represents the police organization as a whole can be questioned. The same goes for whether the results are equally representative of the different areas of expertise of the employees in the police service. Additionally, the results may not be generalizable to other organizations (in both public and private sector) or occupations due to the complexity and distinctiveness of the climate found in the police.

Finally, the conceptualization and measurement of RFC may also constitute a limitation, as it can be argued that the scale developed by Vakola (2014) might represent a narrow understanding of the readiness concept. It treats RFC as a one-dimensional construct with a focus on the individual’s beliefs about their ability to cope with change. Other researchers, such as Holt et al. (2007) have a multidimensional approach to RFC which includes several additional factors. Some studies also distinguish between individual and organizational RFC, the latter regarding the shared commitment to the change and the shared belief in the employees’ collective capability to implement it (Weiner, 2009). In the context of the change processes in the police, knowing more about the perceptions of the organization’s
RFC and how this is related to individual RFC could be relevant to the change planning and management.

**Future Research**

The findings, discussion, and limitations of this thesis suggest some interesting areas that should receive more attention. Further research is needed on the theoretical basis of organizational climate, on the CVF as a method of conceptualization and on what type of response scale climate should be measured. This would be particularly interesting to investigate more closely both in the police and in other highly specialized organizations. To contribute to the understanding of the effect of response scales on the scoring of climate models future research should consider having samples evaluate the climate on both an ipsative and a Likert scale. This could provide more information about the issue of competing versus complementing values in the CVF, especially if the measurements were supplemented with in-depth interviews. Furthermore, such qualitative investigations should be performed to get a more comprehensive understanding of the factors affecting the climate configurations in the police. Extensive knowledge of how the climate is formed and reinforced in the police can provide a valuable background for future change management in the organization.

As mentioned in the limitations section, the change processes in the police could conceivably benefit from more insight into the perceptions of organizational RFC as well as individual readiness. A mixed method approach to measuring organizational RFC and its relationship with individual RFC could provide valuable information about factors that may affect change initiatives negatively and how to counteract them.

In order to remedy the issue of causality in cross-sectional studies, researchers should also consider performing longitudinal studies of the relationships between climate, work fatigue, and RFC. This would also be an opportunity to monitor changes in the variables over time. Unfortunately, there are issues with longitudinal studies as well, one of which being the so called third variable problem. Unknown confounding variables can lead researchers to draw false conclusions about the relationships between variables in the study. Using a Solomon four group design would allow the researcher to control for confounding variables, but this is a time consuming and costly research method which requires a large number of participants. It also poses the challenge of ethical considerations limiting the storage of data that can be linked to individual respondents and repeated measurements on individual level.
Conclusion

RFC and its antecedents have become attractive stream of research due to RFC’s central role in successful implementation of organizational change (Armenakis et al., 1993). This thesis aimed to investigate the relationships between organizational climate, work fatigue, and individual readiness for change in the Norwegian police service, in the context of a major nationwide restructuring process. The results indicate that the CVF, work fatigue, and RFC all represent important dimensions of police work climate. More specifically, the CVF serves as a model suitable to predict RFC, and the results suggest that a global climate had a noteworthy direct effect on both RFC and work fatigue. Furthermore, the results support previous research suggesting that work fatigue is a three-dimensional construct divided into physical, mental, and emotional fatigue. However, the study did not indicate any effects of the dimensions of work fatigue on RFC. Neither did the results support the hypothesized indirect effects of climate on RFC through work fatigue.

This study adds to the existing literature by emphasizing the importance of examining the climate of an organization in relation to initiating a planned change process, as it can have a considerable effect on individual RFC and on the well-being of the employees. In addition, the results contribute to the controversy surrounding the climate concept and how it should be studied. Hopefully, future research can build on these findings and develop a deeper understanding of the relationship between organizational climate and RFC in general, and in the Norwegian police service specifically, as this could have important practical implications for the further development of the police service and thus enabling the organization to face the changing demands and challenges of today’s society.
References


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doi: 10.1177/2165079918754586


### APPENDIX 1: Measures in Norwegian

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item name</th>
<th>Item statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human relation model</td>
<td>HR1</td>
<td>Vi utvikler støttende, positive arbeidsforhold her på enheten</td>
</tr>
<tr>
<td></td>
<td>HR2</td>
<td>Arbeidsmiljøet er sånn at vi på enheten kommer godt overens med hverandre</td>
</tr>
<tr>
<td></td>
<td>HR3</td>
<td>Vi har lite konflikt mellom oss på enheten</td>
</tr>
<tr>
<td></td>
<td>HR4</td>
<td>Vi er forpliktet til hverandre her på enheten</td>
</tr>
<tr>
<td></td>
<td>HR5</td>
<td>Det er høy moral blant ansatte på enheten</td>
</tr>
<tr>
<td></td>
<td>HR6</td>
<td>På min enhet hjelper vi ansatte hverandre når det trengs</td>
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<tr>
<td></td>
<td>HR7</td>
<td>Hver ansatt har muligheter for utvikling her på enheten</td>
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<td>HR8</td>
<td>Hver ansatt har muligheter for faglig utvikling her på enheten</td>
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<tr>
<td>Internal prosesse model</td>
<td>IP1</td>
<td>Regler og retningslinjer er tydelig kommunisert til oss her på enheten</td>
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<tr>
<td></td>
<td>IP2</td>
<td>Etablerte prosedyrer og retningslinjer styrer generelt hvordan vi løser våre arbeidsoppgaver her på enheten</td>
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<td></td>
<td>IP3</td>
<td>Vi på enheten blir oppfordret til å følge vår stillingsinstruks/stillingsbeskrivelse</td>
</tr>
<tr>
<td></td>
<td>IP4</td>
<td>Vi på enheten passer på at arbeidsoppgaver er organisert og forutsigbare</td>
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<tr>
<td></td>
<td>IP5</td>
<td>Vi er kjent for å gjøre jobben vår effektivt her på enheten</td>
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<tr>
<td></td>
<td>IP6</td>
<td>Vi utfører arbeid som alltid er av høy standard her på enheten</td>
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<tr>
<td></td>
<td>IP7</td>
<td>Vi jobbet for å oppnå maks effektivitet her på enheten</td>
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<tr>
<td>Open system model</td>
<td>OS1</td>
<td>På denne enheten er vi i stand til å tilpasse oss nye krav når de oppstår</td>
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<tr>
<td></td>
<td>OS2</td>
<td>Vi er fleksible nok til å ta på oss nye oppgaver etter hvert som de oppstår her på enheten</td>
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<thead>
<tr>
<th>Construct</th>
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<tr>
<td>OS3</td>
<td>Endring blir godt tatt imot på denne enheten</td>
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<td>OS4</td>
<td>Vi er i stand til å gjøre endringer på driftsrutiner som kreves her på enheten</td>
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<td>OS5</td>
<td>Vi er alltid klare for å ta tak i nye utfordringer her på enheten</td>
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<td>OS6</td>
<td>På min enhet er vi opptatt av å holde oss oppdatert med utviklingen i samfunnet</td>
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<td>OS7</td>
<td>Vi blir oppmunrt til å finne nye løsninger på problemer her på enheten</td>
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<tr>
<td>Rational goal</td>
<td>RG1</td>
<td>Det er viktig for oss på enheten å nå våre satte mål</td>
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<tr>
<td>model</td>
<td>RG2</td>
<td>Vi legger vekt på å sette mål for enheten</td>
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<tr>
<td></td>
<td>RG3</td>
<td>Det er viktig at vi på enheten planlegger for fremtiden</td>
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<tr>
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<td>RG4</td>
<td>Vi her på enheten har alltid planer om å gjøre forbedringer</td>
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<td>RG5</td>
<td>Vi blir belønnet for å nå mål her på enheten</td>
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<td>RG6</td>
<td>Vi her på enheten leter etter nye måter å gjøre ting på</td>
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<td></td>
<td>RG7</td>
<td>På min enhet er vi kjent med de langsiktige planene og retningen for Politiets</td>
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<tr>
<td>Physical fatigue</td>
<td>P1</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg fysisk utmattet mot slutten av arbeidsdagen?</td>
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<td>P2</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du hatt problemer med å holde på med fysiske aktiviteter mot slutten av arbeidsdagen?</td>
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<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg fysisk utslitt mot slutten av arbeidsdagen?</td>
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<tr>
<td></td>
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<td>I løpet av de siste 12 månedene, hvor ofte har du ønsket å fysisk «skru av» mot slutten av arbeidsdagen?</td>
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<tr>
<td>Construct</td>
<td>Item name</td>
<td>Item statement</td>
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<td></td>
<td>P5</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg fysisk uttømt mot slutten av arbeidsdagen?</td>
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<tr>
<td></td>
<td>P6</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du ønsket å unngå alt som tok for mye fysisk energi mot slutten av arbeidsdagen?</td>
</tr>
<tr>
<td>Mental fatigue</td>
<td>M1</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg mentalt utmattet mot slutten av arbeidsdagen?</td>
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<tr>
<td></td>
<td>M2</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du hatt problemer med tenkning og konsentrasjon mot slutten av arbeidsdagen?</td>
</tr>
<tr>
<td></td>
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<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg mentalt utslitt mot slutten av arbeidsdagen?</td>
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<tr>
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<td>I løpet av de siste 12 månedene, hvor ofte har du ønsket å mentalt «skru av» mot slutten av arbeidsdagen?</td>
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<td>M5</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg mentalt uttømt mot slutten av arbeidsdagen?</td>
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<td>M6</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du ønsket å unngå alt som tok for mye mental energi mot slutten av arbeidsdagen?</td>
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<td>Emotional fatigue</td>
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<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg følelsesmessig utmattet mot slutten av arbeidsdagen?</td>
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<td>E2</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du hatt problemer med å vise og håndtere følelser mot slutten av arbeidsdagen?</td>
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<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg følelsesmessig utslitt mot slutten av arbeidsdagen?</td>
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<td>Construct</td>
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<td>E4</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du ønsket å følelsesmessig «skru av» mot slutten av arbeidsdagen?</td>
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<td>E5</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du følt deg følelsesmessig uttømt mot slutten av arbeidsdagen?</td>
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<td>E6</td>
<td>I løpet av de siste 12 månedene, hvor ofte har du ønsket å unngå alt som tok for mye følelsesmessig energi mot slutten av arbeidsdagen?</td>
</tr>
<tr>
<td>Readiness for change</td>
<td>RFC1</td>
<td>Når endringer skjer på min enhet tror jeg at jeg er klar for å takle dem</td>
</tr>
<tr>
<td></td>
<td>RFC2</td>
<td>Jeg prøver vanligvis å overbevise folk på min enhet om å akseptere endring</td>
</tr>
<tr>
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<td>RFC3</td>
<td>Når endringer skjer på min enhet pleier jeg å klage på dem heller enn å gjøre noe med dem</td>
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<tr>
<td></td>
<td>RFC4</td>
<td>Jeg tror at jeg er mer klar for å akseptere endring enn mine kollegaer på min enhet</td>
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<tr>
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<td>RFC5</td>
<td>Jeg er ikke bekymret for endringer på min enhet fordi jeg tror at det er en måte å takle dem på</td>
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<tr>
<td></td>
<td>RFC6</td>
<td>Når endringer skjer på min enhet har jeg stort sett til hensikt å støtte dem</td>
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<tr>
<td></td>
<td>RFC7</td>
<td>Jeg er sikker på at jeg raskt vil kunne tilpasse meg endringer på min enhet</td>
</tr>
</tbody>
</table>
APPENDIX 2 – Measurement model 1
APPENDIX 3 – Measurement model 2
Appendix 4 – Structural model 2