

Contextual and Personal Factors Contributing to the Mental Health of Norwegian
Professional Musicians

Master's Thesis in Work and Organizational Psychology

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Forord

Hvorfor har kunst og kanskje spesielt musikk vært en så stor del av nesten alle menneskers liv? Hvordan påvirkes hjerne og kropp av musikk? Og hva med de som faktisk har dette spesielle området som arbeid? Dette var de innledende tankene mine rundt musikk som forskningsområde. Nå ble ikke oppgaven helt i denne retningen, men grunnsteinene er der. Å få ta del i forskning på noe så “underforsket” og interessant som musikers mentale helse har vært morsomt og givende.

Datainnsamlingen for denne studien er gjennomført av Jonas Vaag og Ottar Bjerkeset. Utover dette er problemstilling, databearbeidelser, analyser og tekstskriving gjort av undertegnede. Jeg vil gjerne takke min veileder Per Øystein Saksvik for verdifull hjelp gjennom dette året. Samtidig vil jeg også rette en stor takk til doktorgradsstipendiat Jonas Vaag, som lot meg få være med på musikerhelseprosjektet, og viet tid til faglige diskusjoner og innspill om både løst og fast. Medstudenter fra arb.org. 2012-2014 fortjener også en takk. Denne studien er et selvstendig produkt, men datamaterialet er samlet inn for flere studier i musikerhelseprosjektet (se metodedelen).

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Abstract

This master's thesis investigates the contributing factors to Norwegian professional musicians' psychological distress. Several researchers have pointed out that musicians seem to be a risk group in regards to mental health and work environment. In contrast, research regarding the explanatory variables of their mental health is scarce. Recently, a study indicated a high prevalence of psychological distress in Norwegian musicians. A qualitative study on Norwegian musicians reported a combination of family, social, and personal factors to be of particular importance regarding their mental health. The present study adds to the accumulated research base by conceptualizing contributing factors of musicians' health in a job demands–resources framework, in which the total model as well as individual predictors are tested with a survey on 1,365 Norwegian professional musicians. Five out of ten hypotheses were supported using a hierarchical multiple regression procedure. Job demands and job control were positively related to psychological distress, whereas job-related social support, emotional stability and sense of mastery were negatively related to psychological distress. Work–nonwork interference, effort–reward imbalance and conscientiousness were not significantly related to the outcome. Unexpectedly, job control was positively related to psychological distress, which may have been influenced by the subjects' levels of personal resources. Overall, the main findings was that a combination of contextual and personal variables were most influential, but that the work environment concepts investigated were only weakly or non-significantly related to musicians' mental health. The highest single contributors were emotional stability, sense of mastery and general social support, indicating that personal dispositions of emotionality, a strong sense of control over one's life, and perceived social support from family and friends are of high significance for Norwegian professional musicians' experience of anxiety and depression-like symptoms.

Keywords: mental health, musicians, work environment, psychological distress, personality, job demands–resources, job demands–control–support, effort–reward imbalance, artists

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Contextual and Personal Factors Contributing to the Mental Health of Norwegian Professional Musicians

Musicians are reported to be at risk of a broad range of health problems, including musculoskeletal disorders (Wu, 2007), hearing disorders (Laitinen & Poulsen, 2008), occupational stress (Raeburn, 1987), and mental problems (Tynes, Eiken, Grimsrud, Sterud, & Aasnæss, 2008). In fact, epidemiological research has shown an alarmingly high mortality rate of famous musicians compared with a demographically matched population, as high as 1.7 times higher in musicians (Bellis et al., 2007). Furthermore, recent empirical data from Norwegian performing musicians revealed a high prevalence of psychological distress (indicating severe anxious and depressive symptoms) compared with a representative sample of the general workforce (Vaag, Bjørngaard, & Bjerkeset, 2014). It seems like pursuing a career as an artist is risky in terms of both career development and health, but despite this, the number of artists increases (Heian, Løyland, & Mangset, 2012). Concurrently, although the field of performing arts medicine has seen considerable growth since its emergence in the 1980s (Manchester, 2012), little attention is paid to identifying risks and developing interventions in the performing arts industry. Due to the special nature of musicians' work, the social stigmatization (Cooper & Wills, 1989), and the growing consensus concerning poor health, it is interesting to further investigate this work group.

Research on musicians' health has mainly been conducted within the classical genres, and has focused on physical health (e.g., playing-related musculoskeletal problems). Consequently, research on the contributing factors of mental health among performing musicians is scarce. Williamon (2006) underlined the importance of intervening in musicians' mental health, and pointed to the observation that music students have shown a significant inclination to not seek professional help for mental problems. In conclusion, there are several works that point to that artists, and musicians in particular, are among the work groups with most indicators of mental health problems, but the background for and causes of this are not well researched.

Occupational characteristics have been researched comprehensively, which has culminated in strong associations between work and mental problems as well as well-being. It has been shown that characteristics of the psychosocial work environment (e.g., high work load and/or low decision latitude from the job demands–control–support model [JDC-S], Karasek, 1979) can predict severe mental problems (Karasek, 1979; van der Doef & Maes, 1999) and are associated with sick leave, turnover, and earlier death (Siegrist, 1996; Stansfeld & Candy, 2006). At the same time, positive features of the job (e.g., skill discretion and

social support) have been shown to have buffering effects as well as direct effects on well-being (research on the job demands–resources model [JD-R], Bakker, 2011; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Moreover, it has been reported that over one half of employees not working due to mental health problems report the problems to be work-related (Tynes et al., 2008). Research specifically on musicians have indicated a risky working environment (e.g., Bellis et al., 2007; Holst, Paarup & Baelum, 2012; Raeburn, 1987; Vaag, Giæver & Bjerkeset, 2013). Thus, it is probable that features of the psychosocial work environment of musicians contribute to aspects of their mental health.

However, according to the biopsychosocial model of psychological illness (Engel, 1977; Manchester, 2011), individuals' personal dispositions and resources interact with the environment dynamically. Thus, the occurrence of mental health problems is not solely caused by work-related or personal factors, which points to a need to identify a diverse range of factors in order to investigate mental health comprehensively. In addition, although research has traditionally been centered round risk factors, resiliency and protective factors also are of interest. As argued by Losel and Bliesener (1990), “flipping the coin” and studying the healthy individual in an unhealthy setting could further explain the variance in the antecedents of illness, as well as contribute to diminishing stigmatization of risk groups, and focus on prevention in a more natural context than that of risk reduction. This perspective is also in line with the growing area of positive psychology (Seligman & Csikszentmihalyi, 2000).

In summary, theoretical perspectives and empirical data indicate a complex relationship of occupational, social, and personal factors that contribute to musicians' mental health. This leads to this master's thesis's research question:

How do contextual factors (the JDC-S and ERI models, work–nonwork interference, and general social support) and personal factors (sense of mastery, emotional stability, and conscientiousness) contribute to professional Norwegian musicians' psychological distress?

In the present study, I tested whether a model founded on theoretical and empirical research on musicians' work environment and mental health, with an emphasis on Vaag et al.'s (2013) qualitative research on freelance musicians, could explain musicians' mental health. The model was conceptualized within the JD-R framework (see Figure 1). In this regard, job demands, work–nonwork interference, and effort–reward imbalance were included as measures of job-related demands. Job-related resources included were job control and work-related social support. The social and personal resources measured were sense of mastery, general social support (family, friends, and neighbors), emotional stability, and

conscientiousness.

To date, as far as I know, no prior studies have investigated musicians' mental health quantitatively using a well-established framework like the JD-R model. Similarly, the present study incorporates personality measures along with other contextual and personal characteristics of musicians, which has not been done before.

Finally, musicians have reported that distinguishing the concepts of work and leisure is not natural to them (Juniu, Tedrick, & Boyd, 1996; Vaag, , 2013), indicating that the overarching models of work stress possibly are not as relevant as in typical work. Therefore, an implicit contribution of this study is to assess of the applicability of popular concepts in occupational psychology to this particular work group.

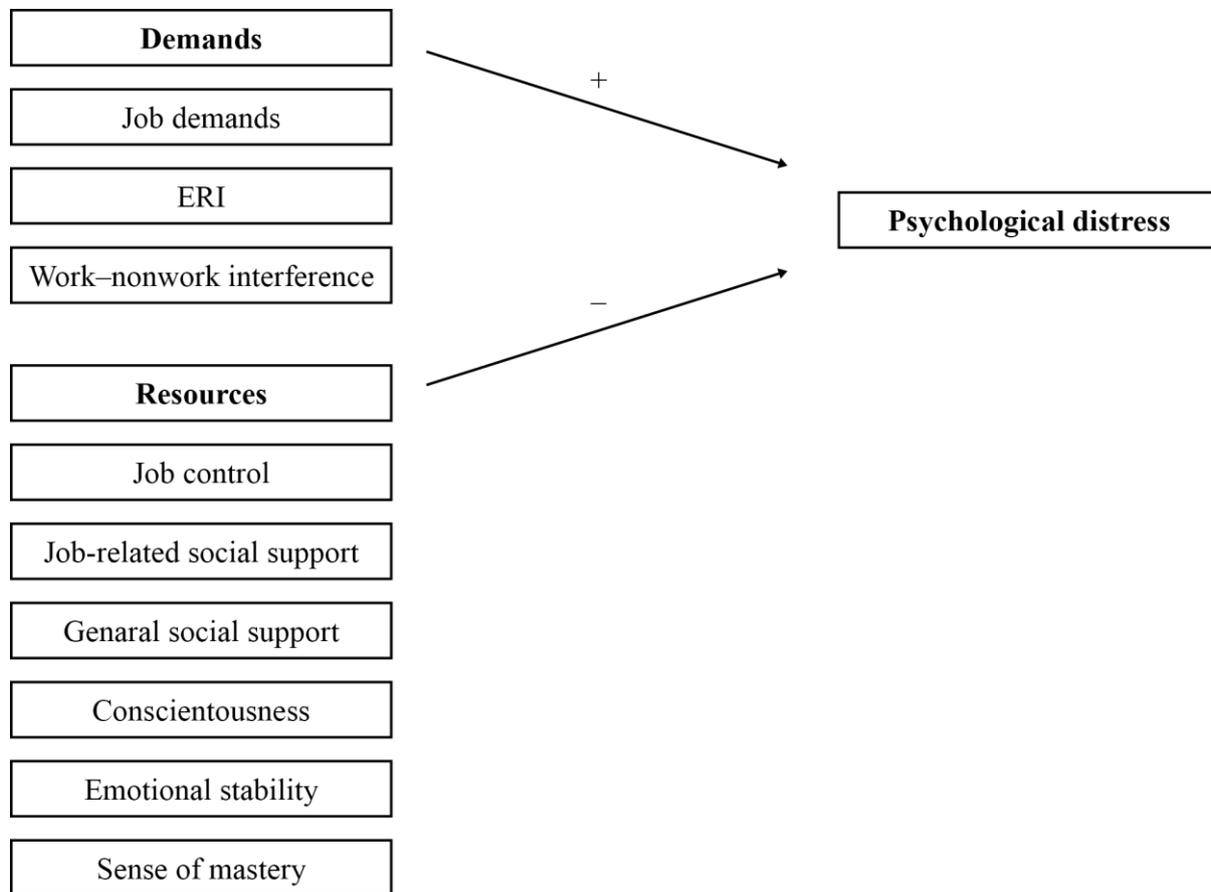


Figure 1. Hypothesized model of contributing factors to Norwegian professional musicians' psychological distress.

Theoretical Framework

The theoretical framework section of the present study is divided into three main parts. First, the job demands resources model and important issues regarding it will be presented, culminating in relevant hypotheses. Second, the concept of mental health will be introduced. Finally, a literature review on the mental health of musicians as well its correlates and potential antecedents is presented. In this regard, results from the recent Vaag et al. (2013) study are emphasized, and further hypotheses are formulated along with this presentation.

Psychosocial Work Environment – the Job Demands–Resources Model

The job demands–resources model is the framework into which the present study’s concepts are incorporated, and a review of important theoretical and empirical research connected to the model will now be presented. However, since the model is largely founded upon the earlier models JDC-S and ERI, a brief overview of these is presented first.

Job demands–control–support model. The JDC-S model (JDC-S, Karasek, 1979; Karasek & Theorell, 1990) postulates that the psychosocial work environment’s relation to health is predicted on the basis of a scale weighing between job demands, control, and social support. It has been immensely popular in stress research, and both praised and criticized for its simplicity. Karasek originally proposed that an employee’s strain is largely determined by jointly having high job demands (e.g., high workload) and concurrently low job control (e.g., control over the task), a proposition called the strain hypothesis. Social support was later included in the revised model (Karasek & Theorell, 1990), which led to the “iso-strain” hypothesis: a situation where the worker concurrently experiences high demands, low control, and low social support and is at even higher risk of health problems. The consistent findings regarding this model concern both the strain and iso-strain hypotheses, which are generally supported (van der Doef & Maes, 1999).

Effort–reward imbalance model. Based on the principle of reciprocity, Siegrist’s (1996) effort–reward imbalance (ERI) model describes a state of strain due to a psychological imbalance between effort and reward. Rewards can be salary, self-esteem, and job security or career opportunities. The model’s assumptions are primarily that high effort and low reward lead to sustained strain (the extrinsic hypothesis), the personality characteristic overcommitment leads to ill health (the intrinsic hypothesis), and finally that the combination of the two constitute the highest risk of health problems (the interaction hypothesis).

The dissonance between perceived effort and rewards has been associated with physical health (Irie, Tsutsumi, Shioji, & Kobayashi, 2004) and with anxiety and depression

(Stansfeld & Candy, 2006). A review of 45 empirical studies on the ERI model concluded that the extrinsic hypothesis (i.e., combination of high effort and low reward is associated with sustained strain) had a considerable amount of empirical support (van Vegchel, de Jonge, Bosma, & Schaufeli, 2005). In regards to psychological health, most studies showed that working during ERI was related to poor job-related well-being as well as emotional exhaustion (van Vegchel et al., 2005). The results regarding overcommitment's role were inconclusive. In conclusion, a balance between "costs" and "gains" of work seems to be of importance in order to maintain good mental health.

The JDC-S and the ERI models have been thoroughly researched, and their link with mental health has been empirically supported (Aboa-Éboulé et al., 2011; Kudielka et al., 2005). So what are the differences between the two? Academics have argued that the JDC-S and ERI models are not mutually exclusive, but rather different aspects of the work environment with distinctive perspectives. While the JDC-S focuses on task characteristics, the ERI model concerns the framework of the work situation (Eiken & Saksvik, 2011).

Both models have been criticized for having a limited amount of predictive variables (Bakker & Demerouti, 2007), and thus assuming that the same predictors are relevant for all work types. For example, the focus on job demands in JDC-S undermines the potential effects of, for example, emotional demands, which are prevalent in professions of patient care (de Jonge, Le Blanc, Peeters, & Noordam, 2008). Therefore, a broader model will now be presented.

Job demands–resources model. In recent years, the job demands–resources (JD-R) model (Demerouti et al., 2001) has been proposed as an alternative model that partly addresses some of the criticized aspects of JDC-S and ERI. The model hypothesizes two health-related processes initiated by job demands and job resources. Job demands refer to aspects of work that require persistent physical and psychological effort and are associated with strain in a health-impairment process (e.g., time pressure or work–home conflict). Thus, the general effect of job demands is negative in the sense that they drain a person's energy. On the other hand, job resources predict work engagement and buffer the effect of job demands on stress through a motivational process. Specifically, job resources are those physical, psychological, social or organizational aspects of a job that a) reduce job demands, b) are functional in achieving work goals, and/or c) stimulate personal growth, learning and development (Demerouti et al., 2001). Typical examples of job resources are feedback, job control and procedural fairness (Bakker, 2011). A recent review of the JD-R model indicate that the majority of assumptions of the model are supported by empirical data, although there

are unresolved issues (Schaufeli & Taris, 2014). Importantly, although JD-R is an occupational model, the outcome of the processes are general as well as job-related health measures (Demerouti & Bakker, 2011).

Personal resources. Recently, personal resources have been incorporated into the model, although somewhat differently across studies (Schaufeli & Taris, 2014). For example, Bakker et al. (2010) found that personality traits acted as third variables on job resources and organizational commitment (extraversion), and job demands and psychological strain (neuroticism), partly explaining their relation. Another study found self-efficacy, optimism and organizational-based self-esteem to be related to engagement and exhaustion through mediation, and simultaneously influencing the perception of the work environment (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Thus, the importance of personal resources in regards to JD-R and mental health is clear, but whether they act as third variables, mediators or moderators is yet to be fully understood.

JD-R compared with JDC-S and ERI. Similar to the JDC-S and ERI models, the JD-R model describes that equal amounts of positive resources and negative demands of the job lead to a state of equilibrium, which fosters health and productivity, thus, it is a balance model. The JD-R model mainly differs from the preceding models in its flexibility: Theoretically, any resources and any demands may affect workers' health and well-being (Schaufeli & Taris, 2014). Whereas the JDC-S model focuses on physical demands (e.g., hard physical work), the JD-R model's definition opens for emotional demands or work/family conflict. The heuristic nature of the model has led to the possibility of two studies using the same assumptions of the JD-R model while using completely different study concepts. One can view the JD-R model as an overarching framework of the preceding models; the concepts within the JDC-S and ERI models are often included in JD-R research. Irrespective of the similarities and differences, the JD-R, JDC-S, and ERI models have all been associated with both occupational stress and well-being, as well as physical and mental health (Aboa-Éboulé et al., 2011; Demerouti & Bakker, 2011; Irie et al., 2004; Schaufeli & Taris, 2014; van der Doef & Maes, 1999; van Vegchel et al., 2005).

Interaction effects. The JD-R model, as well as JDC-S and ERI, hypothesizes a buffer effect of job resources on the relationship between job demands and exhaustion or ill health. A meta-analysis investigating the JDC-S model (van der Doef & Maes, 1999) showed that job control and social support are expected to buffer the effect of demands on well-being, but only in circumstances where the concepts "match" in specificity and conceptual level (e.g., time pressure and the possibility of adjusting pace). Moreover, the buffer effect was evident

in certain individuals experiencing inner characteristics of self-efficacy or internal locus of control, indicating that personality characteristics are important in this regard (van der Doef & Maes, 1999). This means that a) social support and demands should be measured with a comparable specificity, and b) the concepts should be related somehow (e.g., emotional social support and emotional demands). Thus, by adopting this view, one cannot predict whether, for example, the resource decision latitude buffers the effect of the demand role conflict.

Additionally, the JD-R model proposes a coping hypothesis, where the effect of job resources on motivation is most salient when the worker experiences the job demands as high, thus using resources to cope with challenges (Demerouti & Bakker, 2011). The coping hypotheses was investigated in a study of Finnish teachers, yielding 16 of 18 significant interactions between demands and resources regarding work engagement (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Several of the matchups with demands and resources were not “matching” as described by Van der Doef and Maes, indicating a discrepancy needing further research. On the other hand, Brough et al. (2013) did not find sound support for the interaction terms in a large longitudinal study on Chinese and Australian workers. Hence, the nature of the interaction between demands and resources remains inconclusive.

Criticism. It is important to recognize the issues of the JD-R model in addition to its advantages. The main criticized areas seem to be regarding complexity, definition of concepts and theoretical background, which will be discussed next. Other issues include the role of personal resources, the nature of the two distinct processes (health-impairment and motivational) and indicators of reverse causation (Schaufeli & Taris, 2014).

While the JD-R model has been appreciated for its flexibility, although by doing so, the model compromises parsimony and simplicity. Since any resources and any demands could be conceptualized in the model, it is not given that the same concepts are usable in different contexts. For example, if one study finds an interaction between feedback and emotional demands regarding mental health, it does not imply that the interaction would exist between all other types of resources and demands.

Some JD-R research has been concerned with the conceptualization of demands and resources. In the model, these are two distinct concepts with their own outcome, but their orthogonality has been disputed. There are indicators of that job demands correlate positively with work engagement, indicating that some demands are appraised as challenging rather than a hindrance (Crawford, Lepine, & Rich, 2010). Moreover, a lack of resources may actually be construed as a job demand, pinpointing a paradoxical problem. Consequently, Schaufeli and Taris (2014) proposed a redefinition where job demands are negatively valued

and job resources are positively valued, in order to enhance the construct validity. The redefinition implies that a challenging demand would be conceptualized as a job resource. Further theoretical and empirical contributions are needed to clarify these conceptual issues.

The theoretical basis of why the psychological processes happen (i.e., demands lead to strain, resources lead to well-being) is not clearly defined in the model, and thus JD-R is a descriptive rather than explanatory framework (Schaufeli & Taris, 2014). The lack of theory compromises the understanding of the causal relations, and researchers are forced to draw upon other theories of human functioning, the most important being Hobfoll's (1989) theory of conservation of resources, and the theory of self-efficacy (Bandura, 1977).

The JD-R model in the present study. In summary, while the JD-R model is not fully understood nor in its final form, a convincing body of research shows that the model is applicable in understanding both occupational and personal factors of health in various settings. The flexibility of the overarching model allows for the possibility of implementing particular variables that are of interest in the specific occupational type, as opposed to adopting a laundry-list approach attempting to explain health outcomes without a theoretical foundation (Bakker & Demerouti, 2007) or limiting the factors to the narrower JDC-S and ERI models. Therefore, the JD-R model will serve as the framework for this study's attempt to investigate the contributing factors to musicians' mental health state. I emphasize that even though using JD-R as a framework, the prime goal of the present study is not to contribute theoretically the JD-R model, but rather using the JD-R model as a practical tool to investigate areas of mental health associated with this occupation.

Since the flexibility of the JD-R model implies that any resources and any demands could be implemented within the model, an important issue is to determine which concepts to include. The present study does this based on a) concepts traditionally viewed as resources and demands in the JD-R and, by extension, JDC-S and ERI models, and b) concepts researched regarding musicians' mental health and psychological distress in general. Of course, some of these areas overlap.

As a result, the extensively researched concepts of these models constitute this study's first hypotheses:

H1: High job demands are positively related to psychological distress in musicians.

H2: High job control is negatively related to psychological distress in musicians.

H3: High job-related social support is negatively related to psychological distress in musicians.

H4: High effort–reward imbalance is positively related to psychological distress in

musicians.

The Concept of Mental health – Psychological Distress

In considering the mental health of musicians, a clarifying paragraph regarding the definition of the heuristic and nonspecific term “mental health” is needed. Paradoxically, one could say, mental health often refers to (lack of) negative symptoms of emotional problems. This definition indicates a possible need for positive equivalents of the concepts of anxiety and depression (Veit & Ware, 1983), although there has recently been a growing focus on well-being and positive emotions (Seligman & Csikszentmihalyi, 2000; WHO, 2006).

A concept that is widely used as an indicator of population levels of mental health is psychological distress, which will be discussed next. Generally, psychological distress is an anxio-depressive concept that also includes somatic symptoms (Drapeau, Marchand, & Beaulieu-Prévost, 2011). There are several definitions of the construct; for example, it has been operationalized as experiencing any of the following: depression, anxiety, burnout, or related mental health problems (Dyrbye, Thomas, & Shanafelt, 2006) – in other words, it is not a concept in itself, but rather an umbrella term. More specifically, Mirowsky and Ross (2002) described psychological distress as a state of emotional suffering characterized by symptoms of depression (e.g., loss of interests, sadness, hopelessness) and anxiety (e.g., restlessness, feeling tense). In a review of the epidemiology of psychological distress, Drapeau et al., (2011) concluded that Mirowsky and Ross’s definition is the most prominent. Drapeau and colleagues also argued that psychological distress is an uncomfortable state but not a medical concern (i.e., a diagnosis) by itself.

In accordance with the stress–distress model, it has been noted that the difference between psychological distress and stress is the feeling of being unable to cope with a situation in the distressed person, whereas stress refers to biological responses (Ridner, 2004). According to Drapeau et al. (2011), however, the coping aspect does not find a consensus. Additionally, Ridner (2004) underlined that distress in itself is different from psychological distress, which emphasizes the emotional activation. Nevertheless, with Mirowsky and Ross’ (2002) description in mind, the two terms will be used interchangeably henceforth.

What are the contributing factors to distress? Regarding features of the job, the aforementioned work stress models have been prominent in research on the connection between work characteristics and distress (e.g., ERI, Aboa-Éboulé et al., 2011, and JDC-S: Barnett & Brennan, 1995). In particular, the work characteristics decision latitude and job demands have been found to be negatively and positively (respectively) related to

psychological distress in full-time workers (Barnett & Brennan, 1995), thus being in accordance with the JDC-S model. Prospective results also have shown support for these propositions, although finding no association for decision latitude and distress (Bültmann, Kant, van den Brandt, & Kasl, 2002). In essence, a meta-analysis by Stansfeld and Candy (2006) also concluded that the psychosocial work environment is an important factor concerning mental health.

Other contextual and personal variables have also been found to be related to distress: For example, socioeconomic factors like low income (Caron & Liu, 2011), psychosocial stressors (Drapeau et al., 2011). Social support from family and friends also seems to be of relevance: For example, Bøen, Dalgard, and Bjertness (2012) have found a strong association between low social support and psychological distress in a Norwegian-based sample of the elderly. Personal resources like locus of control (Wu, Tang, & Kwok, 2004) also seem to be related to distress. Hence, both the contextual and personal factors of one's life are important when focusing on mental health.

Personality and mental health problems. Personality characteristics have been linked to the experience and development of mental problems since the Hippocrates–Galen temperaments (e.g., phlegmatic personality type) were presented in the time of the ancient Greeks (Stelmack & Stalikas, 1991). Personality features can be related to mental health problems by predisposing individuals to, resulting from or modifying the clinical picture (Duggan, Lee, & Murray, 1990). Generally, personality traits are stable characteristics within the individual (Costa & McCrae, 1992; Soldz & Vaillant, 1999), and are considerably influenced by genetics (Jang, Livesley, & Vernon, 1996). The emergence of a consensus taxonomy of personality (i.e., the Big Five: agreeableness, extraversion, emotional stability, conscientiousness, and openness or intellect) combined with a rigorous classification of mental problems have led to interesting research concerning the link between personal dispositions and mental problems (Bogg & Roberts, 2004; Malouff, Thorsteinsson, & Schutte, 2005). A meta-analysis investigating mean levels of the Big Five personality domains across diagnostic groups showed that high scorers on all depressive, anxiety, and substance use disorders scored high on neuroticism and low on conscientiousness (Kotov, Gamez, Schmidt, & Watson, 2010).

Regarding neuroticism, a convincing base of studies show that high neuroticism, or low emotional stability, is strongly associated with symptoms of anxiety and depression (Brunes, Augestad, & Gudmundsdottir, 2013; Jylhä & Isometsä, 2006). However, a contamination between current mood or state and neuroticism may confound cross-sectional

studies. It has been reported that anxiety, depression or mood affects levels of neuroticism (Clark, Watson, & Mineka, 1994; Farmer et al., 2002), pointing out the need for prospective research. Measuring at three different times, Ormel (2009) found no difference between neuroticism, affect, and relevant symptoms, indicating a spill-over from the trait. On the other hand, another longitudinal study indicated that neuroticism (compared to extraversion, negative affect, and positive affect) was the only significant predictor of distress one year later, although in a small sample (McLennan, Buchanan, & Bates, 1994). Others have found that neuroticism acted as a third variable between alcohol use disorders and distress (Jackson & Sher, 2003) and a review concluded that neuroticism functioned as a vulnerability factor for development of anxiety and depression (Clark et al., 1994). An evident issue regarding the question of validity is that several of these studies use different scales of personality (e.g., Eysenck Personality Inventory [EPI] or Emotional, Activity, Sociability, Impulsivity [EASI]) and different scales of mental health (e.g., Hospital Anxiety and Depression Scale [HADS] or forms of the Hopkins Symptom CheckLists [HSCL]). In conclusion, the relationship neuroticism has with anxiety, depression, and general mental health is strong, but cross-sectional effect sizes may be artificially high, and the specific interaction between them is not yet fully understood.

Adopting the perspective of personality as a preceding factor that determines whether one experiences severe health problems or not, one can look at the relationship between traits and health-related behavior. In line with this perspective, a meta-analysis by Bogg and Roberts (2004) found that the personality trait of conscientiousness (i.e., task- and goal-directed, preference for structure, and being planful) was negatively related to all risky health-related behaviors and positively related to all beneficial health-related behaviors. Thus, having certain features in one's relatively stable behavioral and cognitive tendencies seem to correlate with behavioral pathways to health. Specifically, the theoretical basis of this process is the factor disinhibition, which distinguishes between individuals who are impulsive and controlled (Clark et al., 1994). Adding to this, Bogg and Roberts (2004) argued that disinhibition reflects the temperamental core of conscientiousness.

In conclusion, mental health is generally operationalized as symptoms of anxiety and depression, and is associated with work conditions as well as other personal and social resources, especially neuroticism and conscientiousness. Using psychological distress as an outcome variable when investigating contributing effects of demands and resources has been successful (Tremblay & Messervey, 2011), which supports the choice of using psychological distress as an outcome in the current study.

Musicians' Work Environment and Mental Health

I now turn to a review of research on musicians' work and mental health, to provide the basis for the hypothesized correlates of psychological distress in Norwegian professional musicians. Several studies have been conducted on music students, but this review focuses on music as a profession.

Employment and income. Heian, Løyland, and Mangset (2012;2008) conducted a large study researching descriptive features of the artist's profession. Some of the main findings will now be presented. Artists in general are increasing in number; there was an estimated 30-40 % increase between 1994 and 2006, although the authors expressed caution regarding the numbers. Moreover, artists seem to be more highly educated compared with the general population, but experience a lower education-to-income ratio than other work groups. The average income as a full time performing musician is NOK 278 200 (345 000 when adjusted for non-artistic income). For comparison, the average income for employed individuals with ordinary full-time jobs and with equivalent levels of education is NOK 450 000 (Heian et al., 2012). Hence, the difference may indicate an imbalance between efforts and rewards as well as a possible connection with psychological distress (Caroin & Lui, 2011).

Men tend to be overrepresented among musicians, but it has been reported that the female proportion of artistic employment is generally increasing (Heian et al., 2008). Musicians are often in regular employment relationships in addition to other attachment forms (e.g., self-employed, freelance etc.) and average around three to four employers at a time, an estimate probably biased by extreme outliers (freelancers). The rate of musicians who are permanent employed decreased substantially between 1994 and 2006, a decline the authors attributed to more available employees – but equal or fewer available jobs. Thus, there is a shift in the demand-supply equilibrium with the industry having a permanent “reserve force” of artists (Heian et al., 2012).

In brief, there are indicators that musicians are at risk for unemployment due to overrepresentation, tend to have several employers, and earn less than average wages.

Indicators of musicians' mental health status. Although the indicators of musicians as a risk group for mental problems was pointed out by Raeburn (1987) over 25 years ago, the research is still scarce. Empirical data from the National Institute of Occupational Health (NIOH) on the Norwegian workforce suggest that mental health problems are more prevalent in musicians than in the general population (Tynes et al., 2008). Tynes and colleagues reported that artists (text, music, scene, and photography) composed the work type that

experienced most work-related psychological problems, including feelings of anxiety and depression. Moreover, artists were the highest scorers regarding whether demands at work interfered with one's private life. However, considering that only 72 of the respondents were artists, with the amount of musicians being unknown, the results are not satisfactory in terms of statistical inference.

Another indicator is Voltmer et al.'s (2012) study, which reported that while the musicians' physical health was higher than a reference sample of the general population, their mental health was significantly lower. However, the authors attributed the higher physical health to an unhealthy normalizing of physical complaints. Furthermore, they found no difference between musicians' mental health compared to physicians and aircraft manufacturers. On the other hand, a Danish study found that only 1 % of 145 symphony orchestra musicians reported often experiencing stress (Laitinen & Poulsen, 2008), while another study found that 23 % among 2,212 symphony orchestra musicians perceived more stress than other types of music work (Middlestadt & Fishbein, 1988). A recent survey investigating Australian professional orchestral musicians revealed a significant pattern of anxiety, depression and health-related behavior that point to that the work group needs further attention (Kenny, Driscoll, & Ackermann, 2012).

Insomnia has been reported to be highly prevalent in musicians compared with a population-based representative sample (Vaag, Saksvik-Lehoullier, Bjørngaard, & Bjerkeset, 2014), with a prevalence difference of 6.9 (percentage points, 95 % CI [3.9, 1.0]) compared with the general work force. When considering work-related factors, insomnia is associated with poor performance and sickness absenteeism (Daley et al., 2009). Moreover, sleep disturbances have been linked to general mental health (Shaver, 2002) and specifically depressive symptoms (Tsuno, Besset, & Ritchie, 2005).

In a recent analysis in the present project (and on the same data material as this study), professional Norwegian musicians ($N = 1,607$) reported a prevalence difference of 8.1 (95 % CI [5.5, 1.8]) in psychological distress among musicians (using a cut-off value of 1.75) compared to the general workforce. In essence, there are recent indicators of higher likelihood of experiencing severe anxious and depressive symptoms as well as insomnia symptoms in Norwegian professional musicians.

Finally, relevant in this regard, a prominent problem among musicians is performance anxiety (Kenny & Osborne, 2006; Stern, Khalsa, & Hofmann, 2012). There are reasons to believe that musicians with performance anxiety can develop other forms of mental health problems due to its severe interference with their work. Moreover, other mental health

aspects could spill-over to performance anxiety and thus preserve the effects through a negative spiral. Indeed, tendencies of trait-like anxiety has been associated with performance anxiety in young musicians (Kenny & Osborne, 2006).

To sum up, there are few studies that have explored the mental health of musicians, but the overall implication of the ones that exist is that musicians seem to be a risk group.

The correlates of musicians' mental health. Few of the studies identified have jointly studied occupational factors and mental health of musicians. The connection has been pointed out by Middlestadt and Fishbein (1988) in a study on symphony orchestra musicians. Their findings indicate a relationship between perceived occupational stress and psychological health, in line with the JD-R model. Variables like instrument played, status as a soloist, and the orchestra in which the musician plays were also found to be related to perceived stress.

In a Scandinavian study, Holst et al. (2012) investigated the psychosocial work environment and stress in Danish symphony orchestra musicians. Compared with a random sample of the general Danish population, the orchestra musicians reported higher emotional demands, lower influence (a hierarchical orchestral structure could constrains co-determination in the orchestra), lower social support, lower sense of community, and lower job satisfaction. The authors conclude that the psychosocial work environment of the musicians in symphony orchestras is more demanding compared with the general Danish work force.

Another quantitative study (Parasuraman & Purohit, 2000) found that among 63 professional musicians, work-related psychological distress was significantly predicted by task difficulty and lack of artistic integrity (i.e., agreeing that playing in an orchestra undermines their artistic integrity). The relation to the demands–control–support model is evident in the decision latitude (control) variable which includes the elements of creativity, freedom and skill level (Karasek, 1979).

Cooper and Wills (1989) did a large qualitative study on the relation between occupational factors and stress among 70 male, British, professional popular musicians. They found that the major sources of stress were performance anxiety, public ignorance, low esteem, work overload or underload, career development worries, and relationships at work.

In brief, the research on occupational factors and mental health has unearthed several correlates spanning from both occupational and personal demands and resources. In particular, most studies indicate that there are inherent stressors of the work type that influences the mental health (e.g., artistic integrity, workload). However, it is reasonable to

think that several of these studies are severely influenced by the specific samples and populations under study.

Specific demands and resources of the freelance musician. As a part of this project, Vaag et al. (2013) conducted a qualitative study on the factors contributing to Norwegian freelance musicians' mental health within the JD-R framework. In the present study, as previously mentioned, it is a goal to test these findings to see whether they are applicable to a broader range of musicians. Due to practical and operationalization factors, some of the concepts found in Vaag et al.'s study are not included in the present study, and therefore not extensively elaborated here.

Three broad factors were identified that musicians perceived as demands of their professional life: unpredictable future, family/work balance and external pressure. When asked questions regarding buffering effects on the demands, the informants reported two types of resources: Support from family, band/professional network and audience and personal resources including entrepreneurial skills, flexibility, internal locus of control, and core values.

First, the freelance musicians reported difficulty balancing work and family life as a demand on their mental health. Others have also found that work–family conflict is associated with the creative industries (Tynes et al., 2008) and with psychological distress (Major, Klein, & Ehrhart, 2002). In general, work–nonwork interference (i.e., home, leisure and family life, thus, a broader concept than work–family conflict) is very common in most work groups (Schieman, Glavin, & Milkie, 2009). However, musicians also have reported that distinguishing between work and leisure is somewhat difficult (referring to the fact that most music careers start as hobbies), indicating that the concepts of work and nonwork are not perfectly applicable in this work group. Nevertheless, due to the reporting of balance between work and non-work as a demand, I hypothesize the following:

H5: High work–nonwork interference is positively related to psychological distress in Norwegian professional musicians.

A prominent resource reported by the freelance musicians was support. They mentioned both family support as well as support from their professional network, the latter being with the JDC-S model (and hypothesis 3) but the former being a new aspect, in accordance with family support being recognized as an important coping resource in resilience research (Pinkerton & Dolan, 2007). Generally, nurturing close relationships has been set in close connection with distress (e.g., Bøen et al., 2012), and by some characterized as a biological need (Baumeister & Leary, 1995). Social support from family being recognized as an

important resource by professional musicians leads to hypothesis 6:

H6: High general social support is negatively related to psychological distress in Norwegian professional musicians.

Considering the two social support aspects included in the present study's model, a musician stated that family support was "vital for further pursuit of career goals" (Vaag et al., 2013, p. 14). From this finding, I derive hypothesis 6b:

H6b: High general social support has better predictive ability than high job-related social support in regards to psychological distress in Norwegian professional musicians.

At the same time, the musicians noted that struggling in an unpredictable and unstructured work life was demanding in the sense that it required creating structure and stability in chaotic situations. Being able to adjust to instability at in their work may be related to a person's level of the personality trait conscientiousness. On the conscientiousness dimension of the Big Five personality model, people differ in how they manage to plan, organize and finish tasks (Costa & McCrae, 1992). Thus, it is probable that the conscientious musicians have valuable assets that help them organize in the unorganized setting. A high level of conscientiousness has been shown to predict work performance across work types (Barrick & Mount, 1991), thus perhaps bringing instrumental resources in a competitive industry. As previously discussed, conscientious individuals also seem to engage in several beneficial health-related behaviors (Bogg & Roberts, 2004). Therefore, based on the conscientious person's tendency to be planful and avoid risky health-related behavior, conscientiousness may be conceptualized as a personal resource in musicians' professional life. In conclusion, the following is hypothesized:

H7: High conscientiousness is negatively related to psychological distress in Norwegian professional musicians.

When speaking of instability, a category discussed in the interviews was flexibility and tolerance for ambiguity. Vaag et al. (2013) argued further that the need for adaptability in musicians' work may be related to personality domains and resilience. The concept of psychological flexibility refers to being able adapt to environmental differences and to shift mindsets in order to function. Psychological flexibility has been linked with the personality trait of emotional stability (Latzman & Masuda, 2013) and indeed with psychological distress (Masuda & Tully, 2011). Persons with high emotional stability tend to experience a low number of negative emotions and are able to handle stress more efficiently (Costa & McCrae, 1992). Costa and McCrae also argued that neurotic persons (low emotional stability) tend to

be overly sensitive to criticism in social situations, which is reasonable to think are inherent as a performing musician, both in regards to the performance act as well as other aspects of the work. In conclusion, emotional stability is believed to be related to musicians' mental health partly because of the construct's close relation to mental health problems (Jylhä & Isometsä, 2006; Kotov et al., 2010) both in conceptualization and in empirical investigations, and partly indirectly through the informants' notion of psychological flexibility as a resource. Based on the arguments regarding the definitions of resources and demands (see earlier description or Schaufeli & Taris, 2014), the fact that psychological flexibility was positively valued (as opposed to psychological inflexibility being negatively valued) by the informants led to the conceptualization of emotional stability as a personal resource in the present study. Hence, hypothesis 8 is formulated:

H8: High emotional stability is negatively related to psychological distress in Norwegian professional musicians.

Entrepreneurial skills are needed for a successful career and sustained mental health of freelance musicians (Vaag et al., 2013). This could be related to the need for feeling in control over one's life, bringing the concepts of locus of control or mastery into relevance. Indeed, in a study investigating entrepreneurial traits, Lee and Tsang (2001) found that entrepreneurial traits were closely related to sense of mastery. The mastery concept is globally directed, that is, an overall sense of control over salient areas of one's life (Skaff, Pearlman, & Mullan, 1996) that has been linked with psychological distress (Dalgard, Mykletun, Rognerud, Johansen, & Zahl, 2007). In Dalgard et al.'s (2007) study, sense of mastery acted as a strong mediator between low education and distress. The authors attribute the contributing factor to distress by referring to low sense of mastery as a stressor in itself. Others have also pointed out the feeling of control over one's own life and environment as a strong determinant of psychological well-being (Pearlin & Schooler, 1978). Indeed, the informants in the Vaag et al. (2013) study emphasized the need for a sense of control over their life. Therefore, sense of mastery constitute hypothesis 9:

H9: High sense of mastery is negatively related to psychological distress in Norwegian professional musicians.

Since Vaag et al.'s (2013) research was conducted on freelance musicians, it is interesting to explore differences in a separate regression analysis on the freelance sample, and compare the regression with the same model on other employment types. It is reasonable to believe that the model will explain more in the freelance sample since the model is largely founded upon the research on freelancers. The differences in the overall effect will indicate

whether the complete model explains psychological distress better in freelance musicians.

Thus, the final hypothesis is:

H10: The hypothesized model of contributing factors to musicians' psychological distress explains more total variance in the sample of freelance musicians compared with musicians in other employment types.

Method

The method section contains the following subsections: project, methodological choice, procedure and sample, instruments, statistical analyses, and ethical aspects.

Project

The present study is a part of a large-scale project concerning Norwegian musicians' work environment, psychological health and attitudes towards health services. The project was initiated by the Norwegian Entertainment Medicine Institute (NUMI), and is now in collaboration with the Norwegian University of Science and Technology (NTNU) and Nord-Trøndelag Health. The same data material gathered for this study is used for several other studies, including some cited in this study. Further analyses will be conducted on different indicators of musicians' health and work environment in the future.

Methodological Choice

The choice to conduct a quantitative study was based upon the original research question, which concerned the factors of musicians' health. After an initial literature review I concluded that there was a prominent lack of research regarding the distribution of mental health in musicians, specifically its contributing factors. A natural choice when investigating a large group is quantitative inquiry. The present study's design is cross-sectional and it should be noted that common method variance may exist. Although it often can be a problematic factor of survey research, an indicator of its influence in the particular study can be investigated by the Harmon's single factor test. The test is a factor analysis often used as an indicator of common method variance (Podsakoff, 1986), where a one-factor structure indicates substantial common method bias. Using the Kaiser criteria of eigenvalue greater than 1.0, the results showed a six-factor structure of all variables included in the analyses, indicating a non-substantial bias by common method variance in the present study (see Appendix A). However, it should be noted that the number of included variables influences the Harman's single factor test (it becomes easier to obtain more than one factor as you increase the variables included), so I emphasize that the measurement is only an indicator, and additional sources of data would be more optimal.

Procedure and Sample

The survey used was administered to musicians who are members of Norwegian Musicians' Union [MFO] ($N = 4,168$) in 2013. The response rate was 51 % ($N = 2,121$). The defining requirement for inclusion in the present study was that the respondents considered their role as a musician to be their main occupation. Consequently, the remaining N was 1,607. Finally, one of the variables (general social support) had an option for "don't know",

which was coded as missing. Thus, using listwise deletion, the total number of respondents included in the main analysis was 1,365 (56.9 % males). The sample was fairly narrowly distributed around the onset of mid adulthood ($M = 43.39$, $SD = 9.85$), and somewhat comparable to the mean age of members in MFO (48, Heian et al., 2008) although with almost five years discrepancy. Non-organized musicians are not included in the study, and therefore it is important to recognize that there is estimated to be 4,800 non-organized artists in Norway, although the exact number of musicians is not known (Heian et al., 2012). The respondents were not allowed to register their survey responses without answering all questions. For further information on the survey, as well as the measures included, see Appendix B.

Measures

Psychological distress. This study's dependent variable was measured by the widely used Hopkins Symptom Checklist (HSCL-25), which is an abbreviated version of the original instrument (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). It has shown satisfactory concordance with its longer versions (Nettelbladt, Hansson, Stefansson, Borgquist, & Nordström, 1993). The HSCL-25 assesses whether the respondent has been bothered by general and unspecific psychosomatic symptoms the last 14 days, including 10 items concerning symptoms of anxiety and 15 concerning depressive symptoms. The scale ranges from 1 = (*not at all*) to 4 = (*extremely*) and the total score is an averaged index.

The scale has a strong historical tradition of being used as a population indicator of psychological health in Norway (Dalgard, 2002). Lavik, Hauff, Solberg, and Laake (2009) investigated the validity of the scale on traumatized refugees and reported that the results “seem to confirm that the HSCL-25 has a substantial validity in detecting the general level of symptoms and social dysfunctions.” (p. 20).

Furthermore, HSCL-25 has often been used with screening of psychiatric cases, by categorizing mean scores over 1.7, indicating severe distress, the “severe” category has indicated a large use of medical services (Sandanger et al., 1998). Whereas several studies operate with such dichotomization of psychological distress (Drapeau et al., 2011), the unreliability and non-logical nature of dichotomization has been argued by others (Mirowsky & Ross, 2002). Nevertheless, the fact that variance is lost (thus limiting statistical power) when creating a binary variable from a continuous one is indisputable. Consequently, in the present study, the psychological distress scale is analyzed as a continuous variable. Cronbach's alpha was .93.

Job demands. Based on the Job Content Questionnaire (JCQ, Karasek, 1979) and the

QPS-Nordic questionnaire (Skogstad et al., 2001), job demands were measured by asking respondents questions about how often they find themselves in situations of too much to do ($\alpha = .78$). An example is “How often is it necessary to work at a fast pace?” The scale consists of three items scoring from 1 = (*very rarely or never*) to 5 = (*very often or always*). One item was reversed. It should be noted that two of the items had different value labels, but were still on a 5-point scale. Furthermore, two questions assess quantitative demands, while the latter three are other aspects of job demands. In considering the different operationalizations and content, an exploratory factor analysis was conducted in order to ensure that the different items seemed to be one latent factor of job demands. Using the Kaiser criterion of eigenvalues greater than 1.0, and investigating the scree plot, a satisfactory one-factor structure was found. Subsequently, Cronbach’s alpha of the full scale was revealed to be sufficient ($\alpha = .78$).

Job control. The concept of job control is measured with four items ($\alpha = .87$), also from JCQ, assessing the level of the worker’s possibility to adjust pace and tasks. Specifically, there are two items assessing decision latitude (e.g., “To what degree can you influence decisions which are important to your work?”), and two items assessing skill discretion (e.g., “To what degree can you decide your own working pace?”). All items are scored on a 5-point scale ranging from 1 = (*to a very small degree*) to 5 = (*to a very large degree*). The four items are summed and averaged to provide an overall score of control over one’s work.

Effort–reward Imbalance. The ERI concept is measured with two items ($\alpha = .56$) directly assessing the dissonance between perceived effort and reward (Tynes et al., 2008). The scale is a short version with items similar to the full ERI scale (Siegrist et al., 2004). An important notion regarding the content is that one questions directly assesses salaries: “The size of my salary is correct compared to my efforts and performances at work,” but the second item is more open for subjective interpretation: “In comparison with my efforts and performances at work, I get the respect and acknowledgment I deserve.” The 5-point scale ranges from 1 = (*completely disagree*) and 5 = (*completely agree*).

Work–nonwork interference. To measure a balance conflict between work life and leisure life an item from the QPS-Nordic questionnaire (Skogstad et al., 2001) was used. It assesses spillover from work to family and home life: “Do the demands at work interfere with your home life and family life?” The scoring was from 1 = (*very rarely or never*) to 5 = (*very often or always*). The item is similar to that used in other work studies (e.g., Schieman et al., 2009), although the full scale consists of three items. Thus, the measure does not fully grasp

the content of the concept, although Schieman et al. (2009) pointed out that, “although both directions are important, the work-to-nonwork direction is more common.” (p. 967).

Sense of mastery. Sense of mastery is a global scale measuring to what degree a person feels in control of events in his life. The mastery scale is related to concepts such as self-efficacy and locus of control. Whereas the main idea of the concept of locus of control is to differentiate between a locus of control within the individual or in the external world, the sense of mastery concept does not specify the source of the control but focuses on a global sense of control over one’s life. The Sense of Mastery Scale (SMS, Pearlin & Schooler, 1978) is originally a scale of seven items, but this study uses an abbreviated scale of five statements ($\alpha = .82$), that has been successfully used in other studies (e.g., Dalgard et al., 2007; Penninx et al., 1998). The answers are scored on a 5-point Likert scale where 1 = (*completely disagree*) and 5 = (*completely agree*), after reversed coding of all five questions. An example statement is “I have little control over the things that happen to me.”

Social support. The respondents’ level of social support is in this study measured by two separate variables, one assessing work-related social support as put forth by Karasek and Theorell (1990), and one measuring a more general level of social support from family and neighbors. First, work-related social support is measured with one item asking, “If you need it, how often can you get support and help in your work from your work colleagues?” and ranging from 1 = (*very rarely or never*) to 5 = (*very often or always*). As mentioned earlier, as a part of the JDC-S model, job-related social support has been connected with mental health and occupational well-being (van der Doef & Maes, 1999) and is widely used in studies investigating the psychosocial work environment.

The second variable, the Oslo-3 Social Support Scale (OSS-3, Meltzer, 2003), assesses a more general level of social support. It contains three questions regarding the number of people the participant reports being close to, to what level others feel concern for the respondent, and last, the ease of getting practical help from neighbors. For example, “How many people are you so close to that you can count on them if you have great personal problems?” and “How much interest and concern do people show in what you do?” Lower scores indicate a low level of general social support. The OSS-3 scale’s feasibility is based upon several studies using it as a predictor of psychological distress (e.g., Bøen et al., 2012). A somewhat low alpha was observed in the present study ($\alpha = .54$), although comparable to an OSS-3 psychometric validation study ($\alpha = .52$, Abiola, Udofia, & Zakari, 2013). Furthermore, Dalgård (2008, as cited in Abiola et al., 2013) has argued that the low alpha is a manifestation of the scale’s multidimensionality. Thus, I chose to use the scale as a formative

(sum) rather than a reflexive (mean) scale. Furthermore, Meltzer (2003) has put forth that the scale is useful as a categorical scale as well as continuous, thus leading to the present study's choice of dummy coding scores into low (3–8, reference category), medium (8–11), and high (12–14) scores of general social support.

Personality. The two scales of personality included in the model are subscales from the Big Five Inventory 20 (BFI-20, Engvik & Clausen, 2011), which is an abbreviated scale of the larger BFI-44. The original BFI measure has shown substantial divergent and convergent validity results, for example with peer ratings and other Big Five measures (John & Srivastava, 1999). Furthermore, BFI-20 has shown acceptable psychometric qualities (Engvik & Clausen, 2011), but due to the limited number of items, it is not a comprehensive measurement of personality. The BFI measures are based upon the lexical tradition of personality research, but nevertheless correlate well with the popular NEO-PI-R from the questionnaire tradition (Engvik & Føllesdal, 2005). The practical value of the scale is evident in situations like the present study, where the sole focus is not personality alone.

First, conscientiousness is as previously mentioned a trait reflecting a person's tendency to organize and finish tasks, and is measured with four items such as "I usually set plans and follow through" and "I usually do my work thoroughly" on a scale from 1 = (*does not fit*) to 7 = (*completely fits*). Cronbach's alpha was quite lower than optimal ($\alpha = .56$), but similar to that of a Norwegian validity study ($\alpha = .56$), where the authors conclude that the scale is acceptable having investigated test–retest reliability (Engvik & Clausen, 2011).

Second, emotional stability (or low neuroticism) concerns one's tendency to have positive emotions and flexibility and was operationalized similar to conscientiousness. This scale is also from BFI-2. Example statements are "I worry a lot" and "I am relaxed, handle stress well" ($\alpha = .76$). The scale also includes four items, scoring on a scale from 1 = (*does not fit*) to 7 = (*completely fits*).

Employment type. Finally, employment type was divided into two subcategories: freelance or self-employed and other employment types (permanently employed, both permanently employed and freelance).

Statistical Analyses

The software IBM SPSS Statistics 21.0 was used for all statistical analyses in the present study.

Reliability analyses. Reliability in this case refers to the variables' stability and consistency. In this study reliability was tested by two forms of statistical analysis, namely Cronbach's alpha and principal component analysis. Cronbach's alpha is a widely used

measure of a scale's internal consistency. The procedure is to break down a scale (two or more items) into sub-items and correlate all sub-items with all other sub-items in the scale. This procedure creates a coefficient that ranges from 0 to 1, where 1 is perfect internal consistency. A Cronbach's alpha level should be greater than .70 to be considered sufficient, although depending on the context (Field, 2009). For example, it has been argued that psychological constructs have inevitable multidimensionality and therefore certain scales could have low alphas yet still be considered sufficient (Field, 2009).

Principal component analysis. A principal component analysis investigates the presence of latent factors within a scale. Latent factors are not directly observable, but they are considered to explain common variance between items of a scale. In reliability analysis it serves as a method to ensure that the variance of the scale explained by the latent factor is satisfactory, in other words, whether the scale could be used as a one-dimensional variable. In the present study, principal component analysis was conducted on job demands.

Correlational measure. Initial investigations regarding the associations between the variables were conducted with two-tailed Pearson's product-moment correlation coefficients (r) with pairwise deletion of cases (strictly speaking, the correlation between the categorical variables is "phi", but Pearson's r yield the same coefficient). The correlation coefficient gives both direction and strength of the investigated bivariate association, but excludes the possibility of controlling for other variables and predicting levels in the outcome variable.

Hierarchical multiple regression. The main analyses and specific hypotheses in this study were investigated with hierarchical multiple regression analysis. A regression analysis in general measures the amount of variance shared by one or more independent variables with one dependent variable. This procedure is performed by calculating the sum of squares of a sample and the sum of squares of residuals (errors) to a regression line. In its simplest form this means that perfect covariance between an independent variable and a dependent variable has a sum of square residuals of zero; thus, the regression line fits the data perfectly. In a multiple regression model the procedure is somewhat different, and the interpretation of the regression line is more complicated due to the adding of dimensions to the model.

The important effect sizes in multiple regressions are mainly the R^2 and the standardized beta (β), in addition to diagnostics mainly for exploring violations of the analysis' statistical assumptions. The R^2 statistic tells us the total variance of the dependent variable explained by the model, thus answering the overarching research question in the present study. A variation of the R^2 statistic is the adjusted R^2 ($R^2_{adj.}$), which takes the amount of explanatory variables into account when calculating the effect size. It is useful for

inferential purposes (Field, 2009). In this study, both statistics are used. R^2 is used for the final hypothesis to explore differences in the complete models' fit, whereas the $R^2_{adj.}$ is used for the main coefficient determining the model's fit on the full sample.

For individual relationships, the standardized beta shows us the increase or decrease in the dependent variable (in standard deviation units) when the predictor increases by one standard deviation. An important assumption in this regard is that the standardized beta implies that the values of other predictors remain stable. The coefficients' respective significance values are, of course, of high interest due to the inferential goal of the present study. The standardized betas provided by the regression analysis are the main resulting effect sizes regarding the individual hypotheses in this study. For hypothesis 6b, which states that general social support has a higher predictive ability than job-related social support, I calculated the corresponding confidence intervals (95 % significance level) for the beta values.

For the final hypothesis the regression model was tested on the extracted subsample of freelancers to explore differences compared with musicians in other employment types. To test differences between two regression models, there are several different possibilities. I computed a significance test for overlapping confidence intervals of the two samples' R^2 values. In this procedure, I calculated the confidence intervals (95 % significance level) of R^2 by following a procedure proposed by Cohen, Cohen, West, and Aiken (2003) involving the standard error of the estimates. An alternative procedure is to calculate Fisher's Z-test, but the overlapping confidence interval test is more conservative – that is, it reduces the type I error rate (Cumming, 2009).

The hierarchical regression procedure is relatively similar to a stepwise regression. However, stepwise regression provides a more precise answer to the question “Which variable(s) is the single most important predictor for psychological distress?” Although this is a compelling feature, at least two advantages with a hierarchical procedure are prominent (Lewis, 2007): First, using stepwise regression, it is not possible to discover suppressor effects (i.e., an interaction effect when the inclusion of a suppressor variable successfully creates a significant relationship in a previously non-significant relationship). Second, an advantage of hierarchical regression is the full calculation of degrees of freedom, as opposed to stepwise regression which calculates degrees of freedom based on the final step, and by this fails to acknowledge that the statistic has included more variables and should have higher degrees of freedom. Thus, the probability of a type I error is reduced in hierarchical regression.

In a hierarchical multiple regression analysis the predictors are included in the model in blocks. This procedure allows the researcher to explore the differences between blocks of variables, by calculating a R^2 change coefficient (ΔR^2 , Field, 2009). Consequently, the crucial part of this analysis is deciding which variables to include in which blocks, as the order can produce different results. Therefore, the process of deciding the order of variables should be carefully considered. According to Petrocelli (2003), choosing a hierarchical regression analysis requires a sound background, and the reason behind the choice will now be explained. The primary goal for this regression analysis is the total R^2 and the individual coefficients for the complete final model. However, I make use of the hierarchical procedure through three separate blocks to explore differences between different hierarchical levels. I first enter background variables, then contextual variables and finally personal variables in a separate block. The reason for this block entry is to demonstrate whether the contextual variable's predictions from the preceding block are changed, indicating an influence of personality variables on the effects of work environment and social support. This is based on that for example Xanthopoulou et al. (2007) showed that personal resources influenced the perception of the psychosocial work environment. In this regard, it is important to acknowledge that the results of the ΔR^2 could be different with a reversed block entry.

Assumptions for regression. A hierarchical regression analysis requires several assumptions to be met in order to adequately analyze and interpret the results. Preliminary investigations of the present study's data material in this regard will be discussed next. Other relevant assumption diagnostics are presented in the result section.

A normally distributed outcome variable is an important assumption for regression. The so-called "eye-ball test" was conducted, and as there was clearly a Gaussian curve in the distribution, a positive skew was present. Therefore, a Shapiro–Wilk test and a Kolmogorov–Smirnov test were run. Both yielded significant results indicating a non-normal distribution. However, authors have pointed out that the tests are biased in samples above 300, and one should rather rely on a combination of the eye-ball test and maximum values of skewness and kurtosis (Kim, 2013). According to West, Finch and Curran (1995, as cited in Kim, 2013) an absolute kurtosis value of greater than 7.0 and an absolute skewness value of greater than 2.1 indicate a significant deviation from a normal distribution. Both critical values were accommodated in this data material, and thus I concluded that the dependent variable was satisfactorily normally distributed.

Regarding the assumption of linearity between the independent variables and the outcome (Field, 2009), all independent variables were checked for significant deviations from

a linear relationship. All variables, with two exceptions, seemed to be of acceptable linearity, although some scatter plots indicated no relationship between the variables. Concerning the exceptions, the general social support variable (OSS-3, analyzed as a continuous variable) showed a linear relationship, but tended towards a curvilinear relationship at the end of the scatter plot, indicating that higher scorers of social support had higher distress than did medium scorers. This supported the choice of categorizing the general social support variable. The second variable was job control, which was difficult to categorize but showed some signs of linearity.

Homoscedasticity of the residuals was also tested by inspecting a series of scatter plots with superimposed lines of best fit across the residual terms. None of the lines indicated heteroscedasticity.

Ethical Aspects

In considering the anonymity and ethical aspects of the present study, the survey and project are approved by the Norwegian Social Science Data Services (NSD) and the Regional Committees for Medical and Health Research Ethics (REK). The project's approval from REK could be inspected in Appendix C. The internet-based survey informed the participants of anonymity, the research's purpose, and the project's approval from REK.

Results

The presentation of the current study's findings is divided into three sections. In the first part, descriptive statistics of the included variables will be presented. Thereafter, I turn to exploring the correlations between the independent variables and the outcome. In the final section, the main analysis, the results of the regression analyses will be examined in the order of the hypotheses, after a presentation of the analyses' assumption diagnostics.

Descriptive Statistics

An overview of all included categorical variables' descriptive statistics can be viewed in Tables D1 and D2. First, the categorical variables will be explored. I considered inspecting the mean values of distress on the respective categorical variables of interest. In this regard, as a guidance, values exceeding 1.7 can predict extensive use of medical services (Sandanger et al., 1998). It is especially evident that for low scorers on general social support, the mean value of psychological distress was high, 1.82 ($SD = .55$) for the full sample and 1.93 ($SD = .57$) for the freelance musicians. On the other hand, high scorers on the particular variable exhibited quite low distress in comparison (a .49 decrease). A reversed but predictable pattern was found for income in the whole sample, where subjects with low income (lower than 100,000 NOK) showed higher psychological distress (1.59) than for example medium to high income (400,000 – 800,000 NOK) which had a distress score of 1.28. A similar structure was also evident in the subsample of freelancers. The difference between employment statuses was low in regards to psychological distress.

Descriptive statistics of the present study's continuous parameters are presented in Tables D3 and D4 in Appendix D. The mean values across the independent variables were somewhat higher than the mid values of the scales. There was considerable likeness between the two samples when comparing their values on most of the independent variables, with one notable exception. As one could expect, freelancers experienced higher levels of job control ($M = 3.71$, $SD = .75$) than did the full sample ($M = 3.48$, $SD = .84$).

Correlations

Estimated correlation coefficients for all independent and dependent variables can be seen in Table D5. In general, all variables were significantly related to psychological distress, with absolute r values ranging from .13 to .67. The contextual measures (job demands, job control, job-related social support, work–nonwork interference, ERI, and general social support) ranged from .18 to .33 in absolute values. Regarding personal variables, the absolute values of correlations with the outcome were higher in terms of both variation and effect size, ranging from .26 to .67. The highest associations between the independent

variables and the outcome were emotional stability ($r = -.67, p < .01$) and sense of mastery ($r = -.57, p < .01$). The high correlation between emotional stability and distress was further addressed with a factor analysis, which showed that emotional stability had somewhat large loadings on the same factor as distress, indicating an overlap between the two measurements. However, as we will see in the regression analysis, the variance inflation factor was acceptable, and since neuroticism can be regarded as a stable construct influencing the state of distress (McLennan et al., 1994), I included emotional stability in further analyses. This issue will be discussed later in the thesis.

Regarding intercorrelations between the independent variables, some notable relationships were found: The inter-correlation between emotional stability and sense of mastery was moderately strong ($r = .54, p < .01$), conscientiousness correlated weakly with all other variables (from $r = .01$ to $r = .15$), and the relationship between work–nonwork interference and job demands was moderately strong ($r = .54, p < .01$).

Main Analysis

Regarding the main analysis, assumptions for regression will be described, and then the regression analysis on the whole sample is explored. Finally, a comparison with relevant parts of the regression model conducted on freelance musicians is briefly reviewed.

Assumptions for multiple linear regression. The assumption diagnostics for the regression analysis are based on the full sample of respondents. See methods section for more information regarding the regression assumptions. First, concerning the independence of residuals, the null hypothesis was not rejected using the critical values of the Durbin–Watson test (Field, 2009). This means that I can conclude that the model is not biased by dependent residuals among the variables. Results regarding multicollinearity and outliers/influential cases will be presented next.

Multicollinearity was assessed with the variance inflation factor (VIF) and tolerance values. The VIF measures how well the independent variables correlate with each other in a linear fashion. A common rule of thumb is to consider multicollinearity as a probable bias of a model if the VIF is close to 10 (Field, 2009; O’Brien, 2007). All but two variance inflation coefficients were less than 1.7, indicating that multicollinearity is not biasing the regression model. The coefficients of the two OSS-3 dummy variables were greater than 4, indicating some multicollinearity, although not exceeding thresholds (Field, 2009). The reason for this multicollinearity is probably the lower amount of observations in the reference category compared with the other categories. Due to theoretical reasons, the low scorer category of OSS-3 was chosen as a reference category in order to be able to compare high and medium

against low. Importantly, high multicollinearity only affects the variables with high VIFs. Based on this, and considering that multicollinearity leads to more difficulty obtaining significant results rather than increasing the probability of false positives, I chose to keep the variable coding.

Although outliers are most influential when the number of total respondents is low, it is still important to check for substantial deviations that could bias the model fit. Using the standardized residuals (of the outcome variable) and comparing to the z -scores of a normal distribution, I found that 9 (0.7 %) cases were over the .1 % critical value of 3.29. Similarly, 29 (2.1 %) cases had standardized residuals exceeding the 1 % critical value of 2.58, and 76 (5.5 %) cases were higher than the 5 % critical value of 1.96. In this regard, it is important to emphasize that in order for an outlier to truly bias the model, it has to deviate on the predictors as well as the outcome (Stevens, 2009). Consequently, the data material was investigated to find out whether a few cases exert undue influence over the parameters of the model (Field, 2009). A widely used measure to estimate the effect of a single case on the complete model is Cook's distance. Cook's distances exceeding 1.0 have been argued to indicate a strong influential case (Field, 2009). In the present study, no values in the regression material exceeded 0.07. In conclusion, the overall error caused by outliers and influential cases was not significantly biasing the model fit.

Regression analysis predicting musicians' psychological distress. Complete information concerning the three regression analyses can be inspected in Table 1.

Main effects. The complete model (from the regressions' final step) explained 52 % variance in professional musicians' psychological distress as measured by the $R^2_{adj.}$ value ($R^2_{adj.} = .52$, $F(13, 1351) = 115.794$, $p < .001$). Specifically, model 1 included the background variables age, gender, and income and showed a weak but significant model fit ($\Delta R^2 = .04$, $F(3,1361) = 22.116$, $p < .001$). Model 2 included contextual variables (job demands, job control, job-related social support, ERI, work–nonwork interference, and general social support) and had an ΔR^2 of .18 ($F(7,1354) = 43.561$, $p < .001$). Finally, the last model included personal variables (emotional stability, conscientiousness and sense of mastery), and the contributions was strong and significant ($\Delta R^2 = .31$, $F(3,1351) = 29.646$, $p < .001$). Thus, the largest inclination in R^2 was provided by personal variables, which also had the two highest regression coefficients, as we will see next. In brief, work environment, general social support, and personal resources combined were strongly associated with distress among the musicians and gave clear indicators regarding the overarching research question.

Table 1
Summary of Hierarchical Regression Analyses Predicting Musicians' Psychological Distress

Variable	Employment type				
	All types			Freelance	Other
	Model 1	Model 2	Model 3	Model 3	Model 3
	β	β	β	β	β
Age	-.08**	-.06*	-.02	-.01	-.03
Gender ^a	.08**	.08**	.02	.01	.02
Income	-.15***	-.15***	-.06**	-.08*	-.07*
Job demands		.13***	.08**	.08*	.08*
Job control		-.07**	.06**	.07*	.05
Job-related social support		-.08**	-.04*	-.01	-.07*
ERI		.07**	.03	-.02	.07*
Work/nonwork interference		.12***	.04	.05	.03
General social support ^b					
Medium		-.42***	-.25***	-.34***	-.19***
High		-.5***	-.24***	-.37***	-.14*
Emotional stability			.45***	.50***	.41***
Conscientiousness			-.03	.01	-.05
Sense of mastery			-.26***	-.24***	-.27***
$R^2_{adj.}$.04	.22	.52	.57	.48
F for R^2	22.116***	38.580***	115.794***	64.658***	54.224***
ΔR^2	.05	.18	.31		
F for ΔR^2	22.116***	43.561***	29.646***		
N		1,365		626	739

Note: ^aFemale = 0, Male = 1.

^bGeneral social support was represented as two dummy variables with low general social support serving as the reference category.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Individual effects and hypotheses. As for hypotheses 1 to 9, the standardized beta values along with their respective p -values are of most interest in this regard. Unless stated otherwise, the reported coefficients in text in this subsection are taken from the last step of the regression analysis (Model 3). In general, 8 out of 13 individual predictors were statistically significant with an alpha level of .05. Regarding background variables, income had a negative association with distress ($\beta = -.06$, $p < .01$), while age and gender were not significant. All significant standardized beta coefficients for contextual variables were low, with absolute values ranging from .04 to .08, except general social support ($\beta = .24$ to .25). The final three included variables had stronger contributions ($\beta = .26$ and .45) except conscientiousness, which was non-significant.

JDC-S and ERI. With hypothesis 1, 2, and 3 in mind, all three measured concepts of the JDC-S model were significantly related to psychological distress. Hypothesis 1 stated that

job demands would be positively associated with distress, which was supported in the analysis ($\beta = .08, p < .01$). However, hypothesis 2 stated that job control would be negatively associated with distress, which was not supported ($\beta = .06, p < .01$). Finally, hypothesis 3 stated that job-related social support would be negatively associated with distress, for which the analysis yielded support ($\beta = -.04, p < .05$).

Regarding job control, some elaboration is needed considering I hypothesized to contribute negatively to distress. Indeed, job control was significantly negatively associated with psychological distress in model 2 ($\beta = -.07, p < .01$), in line with the hypothesis. Interestingly, in model 3 the relationship was reversed: Job control showed a significant positive trend ($\beta = .06, p < .01$). This relatively contradictory finding indicates that variation added from the last block of the regression was correlated with the part of job control that was negatively related to psychological distress. Subsequently, the remaining variance was (mildly) positively related to distress. As previously mentioned, the linearity of job control and distress was somewhat difficult to pinpoint. Overall, the regression analysis yielded inconclusive results for hypothesis 2.

Regarding effort–reward imbalance, there was no clear indicator of a relation with distress. Although being positively related to psychological distress in model 2 ($\beta = .07, p < .01$), it was not significant after the inclusion of personal resources ($p = .17$). In conclusion, the results showed no support for hypothesis 4.

Work–nonwork interference and general social support. Work–nonwork interference was positively related to distress ($\beta = .04$) but not significantly ($p = .08$). Thus, hypothesis 5 was not supported. High general social support was related to a significantly lower psychological distress score than respondents with low levels of support ($\beta = -.24, p < .001$). Similar, but slightly stronger results were evident for medium compared with low scorers ($\beta = -.25, p < .001$). Together these results gave support for hypothesis 6.

Regarding hypothesis 6b, I hypothesized that the support from family and friends is of greater importance than work-related support for professional musicians. By comparing the effect sizes, general social support has higher beta coefficients ($\beta = -.24$ and $\beta = -.25$ than work-related social support ($\beta = -.04$). Moreover, to check for significant difference between the beta coefficients, I calculated the confidence intervals of the beta coefficients of high general social support, 95 % CI [-.32, -.16] and job-related social support, 95 % CI [-.08, -.0004]. Thus, the confidence intervals were not overlapping. The considerable gap between the two variables was in line with hypothesis 6b.

Personal variables. In contrast with the hypothesis, conscientiousness showed no

significant relation to psychological distress in our sample of musicians ($p = .09$). This was not in line with the predictions of hypothesis 7. On the other hand, the highest regression coefficient in the analysis was emotional stability (low neuroticism) and was consistent with hypothesis 8. Emotional stability was found to be significantly negatively related to psychological distress ($\beta = .45, p < .001$). As the second most influential predictor, sense of mastery was also negatively related to distress ($\beta = -.26, p < .001$), thus providing support to hypothesis 9.

Employment type. Finally, since the theoretical and empirical background of this study was largely based on freelance musicians, I hypothesized that the overall model fit (R^2) was higher in the subsample of freelancers. The results showed a difference between the two regressions' R^2 : For the freelance sample, the R^2 was .58, 95 % CI [.53 - .63], and for other employment types the R^2 was .50, 95 % CI [.44, .54]. However, the confidence intervals were overlapping. Thus, there was an evident increase in R^2 , but this difference was not statistically significant. Nevertheless, for individual predictors on the freelance sample, the same patterns as in the full sample emerged, job-related social support, which was not significantly related to distress in the freelance subsample.

To sum up, the results support five out of ten possible hypotheses and culminated in a strong proportion of variance factor in all samples.

Discussion

The discussion section is divided into the following topics: brief summary of results, specific hypotheses and variables, practical implications, the present study's strengths and limitations, and conclusions.

Brief Summary

In the present study I was concerned with constructing and testing a hypothesized model based upon research in musicians' mental health, with an emphasis on a recent qualitative study of Norwegian freelance musicians. I conceptualized the variables as demands and resources within the JD-R framework, with a further subdivision into contextual and personal variables. In summary, the model of contributing factors to professional Norwegian musicians' psychological distress showed a strong overall effect size with 52 % variance explained in the outcome. Contextual characteristics of work and home life had an impact on the respondents' distress scores, but personal characteristics had the highest contributing factors. A considerable heterogeneity of effect sizes among the individual significant explanatory variables was present. Overall, the most important variables in the regression analysis were the musician's level of emotional stability, sense of mastery, and general social support. Thus, relatively stable traits indicating psychological flexibility and low levels of nervousness seem to be strongly related to the state of psychological distress, in addition to the experience of being able to effectively manage and control important areas of the musician's own life, as well as having adequate instrumental and emotional support. The results also showed a tendency towards a greater importance of these factors on freelancers specifically compared with other employment relationships, but the differences were not statistically significant.

Specific Hypotheses and Variables

In this section, the theoretical and empirical background of the specific constructs will be discussed in light of the results of this study. The order of discussion follows the chronology of the hypotheses, but since some variables and hypotheses overlap significantly, they will be discussed accordingly. First, the contextual variables will be discussed, then the personal factors. However, before turning to the specific hypotheses, it should be noted that, although not a hypothesis, income was significantly negatively related to distress. This is in line with previous discussions and results indicating that low income is associated with a high effort–reward imbalance (Siegrist, 1996) and psychological distress (Carin & Lui, 2011). Income was measured on an ordinal level and thus not with an optimal level of specificity. The range between 250,000 NOK and 400,000 NOK is especially wide, and individuals in

the lower region have substantially lower income than the average in Norway.

Work context. The work concepts' results will now be discussed. *Job demands.* In line with the hypothesis, job demands were positively related to distress, although with a low standardized beta. Thus, when all other variables are held constant, increased job demands can lead to higher mental discomfort. This is in accordance with the JDC-S model, which states that when isolated, job demands lead to stress (Karasek & Theorell, 1990). Moreover, the overall level of task demands can be understood as a job demand in the JD-R framework, in the sense that they require persistent effort and are related to health-impairment (Demerouti et al., 2001). Previous research on musicians have also noted that, among other correlates, work overload contributes to stress (Raeburn, 1987). In conclusion, increased demands of high pace, too much to do and similar work demands contributed significantly, but with a low effect size, to musicians feelings of psychological distress.

Job control. Job control was found to be mildly positively related to distress in the present sample, contrary to the hypothesis and previous findings of the JDC-S model (Mausner-Dorsch & Eaton, 2000; van der Doef & Maes, 1999). Interestingly, the isolated correlation coefficient of job control showed a significant negative relation to distress. Moreover, in the regression analysis' model 2, the relationship was in the same direction ($\beta = -.06, p < .05$). Thus, to that point, it seemed that the amount of control over one's work contributes (weakly) to maintaining mental health. In contrast, when the personal resources emotional stability and sense of mastery were included in the analysis, job control's contribution to the model was positive ($\beta = .05, p < .001$). Thus, a proportion of job control's variance was shared with the personal variables, and that variance was negatively related to distress.

Regarding job controls contradictory regression coefficients, it is plausible that sense of mastery, neuroticism and/or conscientiousness play a role in the interplay between job control and psychological health. A possible explanation of this result is that concurrently having low emotional stability (neurotic, anxious, and perceived lack of control), low sense of mastery (low feelings of control over one's life), low conscientiousness (laid back and less driven by goals and orderliness), or any combination of the three, together with high job control is not beneficial for these individuals. Considering that the job control concept is contextual (i.e., is it an environment where you are able to make decisions?) whereas emotional stability, conscientiousness and sense of mastery are individual concepts (i.e., tendencies in behavior, cognition and emotions), they are not mutually exclusive. One could think that the positive effect of the contextual variable (on mental health) could be influenced

by personal characteristics through a moderating effect. Consider a person with, say, a low sense of control over one's life; that is, the worker does not think that he can influence important areas of her life. If she is given a high level of decision authority regarding her work, she may not embrace it as a positive asset, because she does not consider her actions as influential anyway. For conscientiousness, it is possible that, for example, the planfulness inherent in the conscientious individual is an important asset to have when faced with the decision latitude or skill discretion. Consequently, by adopting this view, having this particular combination of traits and contextual work characteristics is not particularly related to mental health. In conclusion, although the specific dynamics are difficult to pinpoint, it seems that, depending on certain characteristics of personal resources, increased job control is either weakly related to higher or lower distress. On a relevant note, as mentioned earlier, personal resources have been found to influence the perception of the working environment (Xanthopoulou et al., 2007), which could explain some of the patterns emerged in the job control results.

Consequently, considering that job control was positively related for some individuals while being negatively related for others, having the ability to make decisions that are important for one's work may be identified as a demand (Demerouti et al., 2001). And for others it may be construed as a resource (e.g., stimulating learning and development and positively related to health). This leads us to the issue of conceptualizing contextual, personal and social characteristics into the categories of demands and resources. As argued by Schaufeli and Taris (2014), the JD-R model's concepts are somewhat vague and allow for the possibility of construing a job demand as a resource and vice versa. Schaufeli and Taris's proposition to specify demands and resources according to whether they are positively or negatively valued could help accommodate these conceptual issues.

Finally, it is important to acknowledge that job control is a two-dimensional construct, including skill discretion and decision latitude. It is possible that the two dimensions are somewhat unrelated in the sense that they contribute differently to mental health in the present sample of musicians. There were also some signs of nonlinearity in the relationship between job control and distress, which makes sense in the light of these findings. In essence, the observed effect size for job control regarding distress was weak and in contrast to earlier studies. Moreover, the coefficient shifted direction when the personal variables were included, indicating an interaction effect, which could be studied further.

Job-related social support. As originally proposed by Karasek and Theorell (1990), perceived level of social support at work was indeed negatively related to distress in the

present study. This finding is consistent with the JDC-S model (van der Doef & Maes, 1999). In other words, the instrumental help and support from colleagues, in this case probably mostly band and orchestral members, was related to the musicians level of distress. The beta coefficient was low, indicating that although there was a stable increase in the outcome when the levels of job-related social support increased, the magnitude of the increment was not as high. The importance of social support concerning mental health has been pointed out from several sources, some even arguing that it fulfills fundamental biological needs (Baumeister & Leary, 1995). The practical value of this finding is limited taking the low effect size into account. Moreover, a cautionary note regarding the finding in the current study is that only a one-item variable was used to measure social support, which does not fully capture the construct's content or high psychometric standards.

ERI. ERI was not significantly associated with anxious and depressive symptoms in the regression analysis. Considering previous research, I hypothesized that ERI is positively related to psychological distress. Thus, the results are in contrast to the extrinsic hypothesis (Siegrist, 1996) which states that high effort and low reward lead to sustained strain. The finding is also unsuspected considering that musicians experience (on average) a low annual income (Heian et al., 2012), which indicates an effort–reward imbalance. In this regard, particularly the freelance musicians are interesting to discuss. Only 5.5 % of freelance musicians in this sample report an annual income of over 400,000 NOK, but the ERI levels obtained in this study reached a mean level that is close to the third point (“neither agreeing nor disagreeing”) on a 5-point scale ($M = 2.82$, $SD = 1.00$). Thus, the freelance musicians do not perceive an imbalance between their effort and rewards. It could very well be that in this particular work group, income is not that important, and their perception of the question may include other kinds of rewards, for example, feedback from the audience, which has been suggested as a resource buffering demands on mental health (Vaag et al., 2013).

That being said, whether imbalance leads to ill mental health or not is a different question than what the level of ERI is. Statistically, it is important to distinguish between levels of a variable and its relationship with another. Heuristically, one could think that since the ERI of musicians seems to be at acceptable levels in general, the association between ERI and mental health would be in the same region. However, the degree of correspondence between the two different observations could be very different, since the latter question regards covariation. In this case, the perceived levels of imbalance between efforts and rewards were neither high nor low, and musicians having higher or lower imbalances had no significant deviations in mental health.

Another possible explanation for the non-significant finding is that the narrow measurement of the variable (and its low Cronbach's alpha), which included only two items from the full ERI scale (Siegrist et al., 2004), led to a failure to capture the model ideally. The original scale calculates a ratio between scores on separate effort and reward scales, which is more in line with the theoretical basis of the model.

In essence, the previous findings on the association between ERI and emotional outcomes (e.g., Aboa-Éboulé et al., 2011; van Vegchel et al., 2005) were not replicated in this sample of professional musicians, and the operationalization of the scale was somewhat problematic.

Work–nonwork interference. In contrast to the hypothesis, high work–nonwork interference was non-significantly related to psychological distress in the present sample.. Consequently, the result was inconsistent with earlier findings that have shown that an imbalance between work and home life is associated with psychological problems, both in musicians (Vaag et al., 2013) and the work force in general (Major et al., 2002; Tynes et al., 2008). As Tynes et al. (2008) reported, dissonance between the two domains of life is prominent in the creative industries, which further emphasize the significance of this finding. On the other hand, it is important to underline that although the traditional research concerns work–family balance, the current study did not make a distinction between family life and leisure life but encompassed both in the category of nonwork. An explanation for the non-significant finding could be derived from earlier research on similar concepts: Despite the aforementioned findings on work–family conflict and work–nonwork interference, musicians may have trouble distinguishing between work life and leisure life (Juniu et al., 1996). It is also possible that for most musicians, the interference from their music work over to family life is not important to their well-being. Using the only one item from the full work–nonwork interference scales may also have influenced the results, in addition to the high inter-correlation between job demands. In conclusion, spillover from work to family or spare time was not predictive of their mental health.

Summary of work context. The JDC-S model's link with mental health was demonstrated in the present study, although the job control variable was contradictory to the hypothesis. Thus, the JDC-S model seem to be of some relevance when speaking of mental health, in line with previous findings (Karasek, 1979; Mausner-Dorsch & Eaton, 2000; van der Doef & Maes, 1999). On the other hand, the present study's measured ERI and non–nonwork interference levels were not significantly related to psychological distress. Furthermore, and importantly, all concepts of the work context (JDC-S, ERI, and work–

nonwork interference) had either weak or non-significant relationships with distress, which need further discussion.

As pointed out initially in this thesis, organizational factors have been found to be strongly related to several health measures (e.g., Stansfeld & Candy, 2006), and musicians have been reported to be a risk group in this regard (e.g., Bellis et al., 2007; Holst et al., 2012). In contrast, the work environment concepts in this study were only mildly related to psychological distress. For example, the notable connection between the job demand construct of the JDC-S model and mental health has been supported in large studies (Karasek, 1979; van der Doef & Maes, 1999). In the present study, the relation was in line with earlier findings in terms of direction, but not in terms of effect size.

It may very well be that traditional work concepts are not as relevant for this population of workers. As argued by proponents of the JD-R model, the JDC-S and ERI models may be too narrowly directed towards traditional forms of work, mainly industrial work types. Unarguably, musicians work life can be characterized as untraditional with its irregular work hours, employment attachments, and artistic content. Therefore, concepts of the JDC-S and ERI models may be irrelevant or imprecise to them.

Both JDC-S and ERI have been criticized for including few predictor variables (Demerouti & Bakker, 2011), thus possibly undermining other prominent characteristics of the work, as well as assuming that JDC-S and ERI are important for all work types. Although none of the included work-related variables in this study proved especially to be strongly related to distress, it is possible that several other constructs and characteristics of the work place could be. In line with current discussions regarding the JD-R model, the flexibility of this model allows researchers to further investigate these inquiries by including other types of contextual and personal variables (Schaufeli & Taris, 2014). For example, similar to the medical professions (de Jonge et al., 2008), it might be that emotional demands are more important for musicians regarding their mental health, due to the inherent emotional characteristics of acting and performing. Similarly, more specific work concepts like diminished artistic integrity (Parasuraman & Purohit, 2000) may be of higher importance in this regard.

As even musicians themselves have pointed out, work and nonwork, more specifically the distinction between them, are unfamiliar entities. Thus, the importance of including a broader spectrum of concepts within different contexts than work (e.g., general social support from family was a notable larger contributor in the current study) is evident when investigating musicians and artists. Indirectly, one could argue, the role of concepts within the

home and leisure context are more relevant for musicians' work than traditional concepts like quantitative job demands. For example, being able to perform and feel good during and after work could be heavily influenced by the musicians' level of social support from family, because of the impact their work has on the family in terms of, for example, economic constraints and traveling away from their loved ones. Thus, the contextual characteristics of the work (e.g., traveling away from family) affect the need for contextual characteristics in home and leisure life (e.g., social support from spouse). This interactive connection between work and nonwork concepts is, of course, not something completely new (for example, the balance between work and family has been well studied) but is an increasingly interesting area because of the higher degree of atypical work in modern society. Within an occupational psychology perspective, musicians and artists are therefore a work group which is interesting to study further.

General social support. The level of interest and concern shown by others, family support, and availability of neighbors' help were strongly associated with mental health in these musicians. Specifically, both medium and high scorers had substantially higher standardized beta values compared to low scorers. When looking at the freelance subsample, the trend was even stronger.

The difference between having high and medium levels of support (relative to low) was close to zero. Thus, in essence, the main finding here is that having some baseline of social support is clearly related to distress, but having further heightened support is not particularly associated with levels of distress. Overall, the results were in line with the notion that for musicians, who experience unorthodox working hours and lower income (Heian et al., 2012;2008) and travel on tours away from their families, support from spouse and family is important to their well-being (Vaag et al., 2013). Specifically, the standardized betas of general social support were substantially higher than that of job-related social support. Tests for significant difference between the effect sizes showed that high general social support was a significant better predictor than job-related social support. The findings affirms the idea that family support is vital for musicians (Vaag et al., 2013), and by extension more important than feelings of support on the job.

Moreover, previous research has found the OSS-3 scale to be efficient at predicting psychological distress (e.g., Bøen et al., 2012), and the present findings further support this relation, indicating that both emotional support (i.e., being valued by others) and instrumental support (i.e., practical help, economic support) are important for musicians' anxiety and depressive symptoms. Similarly, in resilience research, social support from family and close

friends is generally accepted as an important factor (Pinkerton & Dolan, 2007).

However, an alternative explanation of the relationship between the general social support variable and mental health is present. Consider two of the items in the OSS-3 variable. One asks, “How many people are you so close to that you can count on them if you have great personal problems?” and another one, “How much interest and concern do people show in what you do?” Thus, whereas the first item measures a quantitative parameter intended to reflect the quality of relationships with close friends and family, the second item measures interest from other people. A musician’s point of view on the latter may include public reception and popularity regarding their artistic career, hence more accurately reflecting performance feedback rather than social support from the close social circle. In other words, this particular group of individuals’ cognitive schemas may confound the latter item’s scores. As noted by Vaag et al. (2013), “For our informants, communication with, and response from, the fans and audience is one of the most important sources for motivation and engagement” (p. 16). This line of argument leads to the possible explanation that the connection between general social support and distress is partly determined by the artists’ popularity and feedback from audiences and fans. Nevertheless, whether the latent construct being measured is audience support or support from family and friends, both have been related to mental health in recent research (Vaag et al., 2013). A more precise measurement of family support would be important to include in further studies.

Personal variables. In this section, conscientiousness, emotional stability will be discussed. The personal variables were the strongest predictors in addition to general social support.

Conscientiousness. High conscientiousness was not significantly related to distress, in contrast to the hypothesis. Consequently, the null hypothesis was kept for this relation. The connection between conscientiousness and distress was hypothesized mainly based upon two earlier trends in research. First, the planful and structured mindset of a conscientious personality was believed to help buffer the musicians against the demands of an unstructured and sometimes chaotic work life (Vaag et al., 2013), in line with the processes predicted by the JD-R model (Demerouti et al., 2001). Second, since high conscientiousness is generally associated with an array of health-related behaviors as well as a low prevalence of mental disorders (Bogg & Roberts, 2004; Kotov et al., 2010), I considered it reasonable to hypothesize a relationship with distress.

A possible explanation for the discrepancy can be drawn upon theories of person–vocation fit (Kristof-Brown, Zimmermann, & Johnson, 2005). It may be that the

characteristics of musicians' work are more enjoyable to people who fit the environment than people able to buffer against the same environment's demands. For example, the freelance musician may enjoy an unstructured work life if he has dispositional tendencies towards an unstructured life. If the freelancer is highly conscientious, it could possibly help the artist in his work by providing structuring and planning skills or abilities, but he may not be as happy. A such discrepancy between musicians' person–vocation fit could be caused by the fact that musicians often start their career as a hobby, and the fact that artists work environment is considered to be unstable and unpredictable (Heian et al., 2012). It may be that characteristics of music as a hobby is different compared to those of the music industry, thus creating a bad person–vocation fit. In such a way, the conscientious individuals may engage in health-related behaviors while concurrently being less happy with their vocation, hence, the effects equal each other out.

The inconsistent results may also be influenced by the low Cronbach's alpha (.56), and the reasons behind the unreliability could partly explain the unexpected result. If the variance that was unrelated to the other sub-items was due to error variance in the measurement, for example if subjects misunderstood or misinterpreted the items, it could bias its overall relationship with distress. Moreover, the sub-items could have somewhat different relations to distress which cancel each other out.

Emotional stability. The strongest contributor to distress in the regression analysis was emotional stability. There are various possible explanations for this strong contribution shown in the results.

From the dispositional perspective, one can deduce that musicians with an emotionally stable personality engage have less risk of experiencing distress (Clark et al., 1994; Jackson & Sher, 2003) and less risk of experiencing problematic life events that could lead to severe mental health problems (Ormel, 2009). Empirically speaking, the Big Five factors have been shown to be stable across time (Soldz & Vaillant, 1999), whereas psychological distress is more affected by temporal variations (Drapeau et al., 2011). Hence, emotional stability is trait-like, and psychological distress is state-like. By adopting this foundation, one could suppose that a core of low emotional stability could lead to high distress in a causal fashion, as shown in earlier findings: Neuroticism predicted psychological distress one year later, whereas negative and positive affect were non-significant (McLennan et al., 1994). Neuroticism also predicted psychological distress six and seven years later, both directly and indirectly through difficult life events (Jackson & Sher, 2003)

Consequently, it may be that in a cross-sectional study with measurement at only a

single time, the relationship between the trait and the state would be artificially high, but in a longitudinal design, the prediction would be stable. In this view, musicians' levels of emotional stability are influenced both by their underlying dispositions as well as by mood. The affective state, both current and recent mood and affect could predict levels of emotional stability (Clark et al., 1994), and the affective state itself could be predicted by the inherent dispositions. Say a person is in a state of distress and is asked whether the following statement fits him as a person: "I am relaxed, handle stress well" (from BFI-20). The anxiety and/or feelings of hopelessness in the situation might lead the person to misperceive their stable traits' characteristics. On the other hand, scoring high on trait-like emotional stability may influence the perception of state-like questions like those in HSCL-25. Both directions have found some support in previous studies (Clark et al., 1994; Farmer et al., 2002; Ormel, 2009).

I hypothesized that emotional stability could influence mental health indirectly through its relation with psychological flexibility. The prediction was based on that freelance musicians reported that flexibility was a resource regarding their mental health (Vaag et al., 2013), which emotional stability seem to be related to (Latzman & Masuda, 2013). In this regard, the constantly fluctuating characteristics (e.g., work hours, income, employability) of the artistic career could induce a need for an adaptive and calm mindset, which is inherent in those with high emotional stability. The present findings bring support to these findings and psychological inflexibility could be one of the factors contributing to the close connection between emotional stability and psychological distress.

Finally, it could be that the specific scales for neuroticism and distress have significant overlap in their text phrases and design, and need to be investigated for content validity. The questions clearly state that for BFI-20, subjects should answer according to "what *usually* fits you the most," thus indicating a broad, normal baseline, whereas the statements in HSCL-25 refer to the last two weeks only. It is, however, difficult to know exactly what the respondents perceive in this regard, for example, it may be difficult to cognitively distinguish between emotions and affect one usually experience and the one's one have felt the last weeks only. Thus, the associations of the subjects may confound the results.

To sum up, the contribution of emotional stability was strong and quite possibly influenced by a close match with distress, both in terms of content of the concept as well as operationalization. No multicollinearity diagnostics showed alarming results, indicating that the individual effects were reliable. Thus, stable personality characteristics of the emotionally stable individual (e.g., relaxed, low levels of nervousness) seem to be of strongly negatively

related to state of psychological distress, but the specific regression weight is probably artificially high.

Sense of mastery. The second highest regression weight in the hierarchical regression analysis was sense of mastery, which was negatively related to distress. Musicians' perceived control regarding salient areas of their life seems to be related to their mental health as measured by psychological distress, thus being in line with the hypothesis as well as several other studies (Dalgard et al., 2007; Seeman & Seeman, 1983; Skaff et al., 1996).

First, since both mastery and job control center around the concept of control, it is important to distinguish them from one another. A major difference between the two concepts concerns where the control is situated: Sense of mastery relates to one's perceived control over important areas of one's life, whereas job control is task-specific control regarding one's work situation (i.e., a contextual characteristic).

There are different ways that sense of mastery could be related to distress. First, the relationship between sense of mastery and distress could be mediated by entrepreneurial abilities and traits. Authors have noted that an internal locus of control is a core feature of entrepreneurial traits (Lee & Tsang, 2001), which was reported as important for Norwegian freelance musicians (Vaag et al., 2013). As noted earlier, sense of mastery has similar core features as the locus of control concept. In this regard, a sense of control over their life and environment may help musicians develop their artistic career with business strategies and self-promotion. By extension, these abilities help musicians to be successful in their occupation and lifestyle, and in this way lead to less distress. Hence, in this line of thinking, a high sense of mastery helps develop certain skills and abilities.

A sense of mastery, being related to both locus of control and self-efficacy, could also affect the feasibility of several positively valued work characteristics, as discussed regarding job control. For example, having faith in one's own ability to influence major events or activities may help individuals efficiently cope with negative and positive feedback on performance. Moreover, as Dalgård et al. (2007) reported, perceived control could influence distress through the apprehension of low sense of mastery as a stressor. Consequently, the relation is in accordance with the stress-distress model, which states that (given certain characteristics) stressors could lead to distress (Ridner, 2004). Again, this points to the discussed conceptualizations of the JD-R model, as mastery is conceptualized as a resource rather than a demand.

Freelance musicians. The complete model was expected to be more efficient at explaining contributions to psychological distress in freelance musicians compared distress in

with those who were employed in other types of jobs. The background for this hypothesis was that the preceding hypotheses were largely founded upon a recent study on freelance musicians. Indeed, a higher proportion of variance was explained in the freelance sample, although the difference was non-significant. An explanation for the non-significant result could be related to the specific test conducted. Overlapping confidence intervals is a test in which the type II error rate is elevated; that is, in some cases, other types of test would yield a significant difference even though the confidence intervals were overlapping. Another explanation could be that the lives of freelance musicians are not so dissimilar to those of the permanently employed or other employment types, although the difference has been pointed out by others (Vaag et al., 2013). Finally, the “other” employment type included musicians who are both permanently employed in addition to being freelancers (e.g., musicians troubling to make a living as a freelancer alone would fall into this category). Thus, it may be that distinguishing between this subgroups freelancers and other employment types is too unprecise. To conclude, it seems like irrespective of employment type, the contributing factors included in this study were of similar importance in terms of total variance explained, although there was a clear difference between freelance musicians ($R^2 = .58$) and other employment types ($R^2 = .50$).

The Role of Performance Anxiety

Performance anxiety is a prominent problem among musicians and artists in general (Kenny & Osborne, 2006; Schneider & Chesky, 2011; Stern et al., 2012), and some of the measured constructs in this study could be related to this phenomenon. The measurement of mental health could be related to performance anxiety and a discriminant validity analysis in this regard would be interesting to investigate. On the premise that music is not only their occupation, but also the focus of their life in general, a high performance anxiety could account for large amounts of variance in their psychological distress in general. The musicians may consider their performance anxiety a hindrance to their life as they want to live it.

For example, emotional stability and sense of mastery can be related to performance anxiety. First, emotional stability is comparable to trait anxiety, which has been found to correlate with performance stress and anxiety (Stern et al., 2012). Second, it may be that a high perceived control over their life gives the performers a belief in their own abilities and possibilities to control their actions: Rather than thinking “the performance anxiety controls me,” they could think “I can control my performance anxiety in such a matter that it does not interfere with my life.” By doing so, the musicians do not necessarily delete the baseline

performance anxiety but rather coping with it. For this reason, performance anxiety may act as a contributing variable between personal resources and psychological distress. In sum, there are several ways performance anxiety could be related to constructs in this study. Further studies should implement measures of performance anxiety in order to develop an understanding of its relation to other concepts important to musicians' mental health.

Strengths, Limits and Further Studies

A strength of the current study is that it acknowledges that research on the contributing factors of artists' health is sparse, conducted on small samples and/or orchestras thus limiting generalizability. Methodologically, the multidimensional approach reduces the probability of a type I error due to several control variables, as individual beta values is interpreted as values while all other included variables are held constant. This leads to the individual findings' effect sizes (standardized beta) being more valid compared to individual effect sizes in analyses with few control variables. Obviously, this is a double-edged sword, as increasing the number of variables increases the odds of finding a significantly contributing variable.

Moreover, constructing a theoretically and empirically based model to test, rather than loosely including variables in an explorative fashion, is in accordance with the hypothetico-deductive method of research. Indeed, using an established framework (the JD-R model) in such a way has been proposed by several others (e.g., (Bakker & Demerouti, 2007; Schaufeli & Taris, 2014).

When considering the limits of this study, a prominent issue with all cross-sectional studies is the absence of temporal variations, hence not allowing for causal investigations. Moreover, a limit of this study is the studying of musicians as a homogeneous group. Dividing the sample by employment type accomodates this limit to some degree, but further stratifying by music genre and instrument and other characteristics should be conducted in further research.

An important issue to discuss is the inclusion of resources in a study based on a flexible theoretical framework such as the JD-R model. The statistical cliché is that you only get what you put in the formula, which, of course, is also true for this study. The chosen demands and resources included in the present analyses are based upon earlier theoretical and empirical research, and there could very well be other important variables in this regard. There are concepts and areas that have been researched that the data material in this study did not address (e.g., an unpredictable future in work and general life or degree of artistic integrity), thus limiting the scope of factors. Moreover, as the number of qualitative and

quantitative studies regarding the subject is small, possible contributing factors have yet not been explored empirically or theoretically.

There were some psychometric issues in the present study. Conscientiousness and ERI showed Cronbach's alphas lower than commonly adopted rules of thumb, indicating a somewhat low internal reliability among these scales, although conscientiousness being validated with test-retest reliability earlier (Engvik & Clausen, 2011). Findings regarding these constructs should therefore be interpreted with caution. Another limit is the psychometrical influence of using 1-item variables (job-related social support and work-nonwork interference) and abbreviated scales (HSCL-25, sense of mastery, BFI-20, and ERI). In this regard, the abbreviated HSCL-25 scale, sense of mastery scale and BFI-20 have been validated and are used in several studies (Engvik & Clausen, 2011; Lavik et al., 1999; Skaff et al., 1996). Nevertheless, a more comprehensive measurement of personality, ERI and job-related social support would be valuable to include when investigating these subjects further.

Practical Implications

As the number of musicians and artists in general is increasing, the implications of the present findings are interesting to consider from a practical perspective.

Results of the present study can be valuable when considering interventions in this work group. In order for musicians to experience better mental health, it seems like improving their perceived social support, especially feelings of being cared for could be beneficial. For example, educating musicians on the importance of nurturing close relationships concurrently with their musical ambitions might be a way to achieve this goal. Moreover, bringing further awareness to knowledge of their personal dispositions' tendencies, abilities, and potential vulnerabilities may be of relevance. Similarly, focusing on improving their sense of control or mastery of their life, could direct musicians into a more successful career as well as better well-being. It seems like these implications could be of some higher relevance for freelance musicians as opposed to other employment types, although, as previously discussed, the difference between the regressions was non-significant. A focus on resources rather than risks or demands is in line with both JD-R (Schaufeli & Taris, 2014) and resilience theory (Pinkerton & Dolan, 2007). Indeed, in line with the JD-R model's predictions, increasing the quantity and quality of the workers' job and personal resources could heighten feelings of well-being and help them cope with the constant demands they face in their work. The implications of these findings may also be used as a basis for suggesting politically initiated interventions regarding, for example, health, safety, and environment (HSE) or wages, and also research on evidence-based interventions on this

group.

Conclusions

In conclusion, when looking back to the initial research question, the overall implication is that both contextual and personal variables contributed to Norwegian professional musicians' psychological distress in the present sample. Personal and social (outside work) characteristics were the most influential factors. Hence, the findings were generally in line with earlier findings; for example, as Vaag et al. (2013) pointed out, "results indicate that a combination of personal, family and social resources is beneficial for both career and health" (p. 26), in addition to the biopsychosocial model of illness (Engel, 1977; Manchester, 2011). Although a combination of contextual and personal variables showed highest contributing effects, I have emphasized that work environment concepts were only weakly related to these musicians. Furthermore, the present study show that the findings based on qualitative research on Norwegian musicians generally was found to be salient in a broader, quantitative setting.

On a higher level of specificity, the most important contributors were emotional stability, a sense of mastery, and perceived levels of social support. It seems that having relatively stable tendencies to be relaxed and have a sense of control over one's life are helpful in order maintain low levels of distress for professional musicians. The high effect of social support from family and friends on distress could partly be due to operationalization factors, which may have led the subjects to perceive an item as performance feedback or popularity. On a similar note, emotional stability has some operationalization issues that probably account for parts of the high effect on distress. Further studies on musicians' mental health may consider even controlling for emotional stability in order to purify other effects. Quite interestingly, job control was negatively related to distress, which may have been due to interactive effects with personal resources. ERI and conscientiousness were not significantly related to distress. Overall, work environment concepts were weakly related to musicians' mental health.

The results of the current study supported the JD-R model and showed that personal resources are especially important factors to consider when investigating mental health. On the other hand, an issue regarding the concepts of job demands and job resources has been discussed. In this regard, it should be emphasized that, rather being unrelated dichotomous variables as the framework initially postulates, the concepts of resources and demands are dynamic entities. The conceptualization of a work or personal characteristic depends on the researcher (e.g., lack of social support may be described as a demand), and the subjects under

study. Nevertheless, a point worth mentioning is that since the contextual variables in this study were modified after the inclusion of personal variables (e.g., job control changed direction), using a conceptual framework like the JD-R model to incorporate individual dispositions and abilities could be valuable when investigating job characteristics and mental health.

Practically, the results of the current study may be helpful in developing and directing preventive efforts on musicians as a group at risk. In essence, the present study shows that musicians' mental health and work environment are important areas to study further.

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Appendix A

Harman's Single Factor Test

Component	Eigenvalue	Variance (%)	Cumulative variance (%)
1	3.20	22.83	22.83
2	1.76	12.56	35.40
3	1.44	1.29	45.68
4	1.24	8.84	54.53
5	1.11	7.95	62.48
6	1.07	7.67	7.15
7	.88	6.31	76.46
8	.75	5.33	81.79
9	.67	4.76	86.55
10	.53	3.81	9.36
11	.46	3.27	93.63
12	.44	3.16	96.79
13	.33	2.37	99.16
14	.12	.84	10.00

Note. Extraction method: Principal component analysis.

Appendix B

Survey

Front page

Musikerprosjektet

Forespørsel til deg om deltakelse i forskningsprosjekt

Kultur- og underholdningsbransjen er stor og hurtig voksende i Norge. Levekårsundersøkelsene peker imidlertid på utfordringer når det gjelder arbeidsmiljø og helsemessige forhold i denne bransjen. Det finnes imidlertid få undersøkelser, verken nasjonalt eller internasjonalt, som har fokusert spesifikt på musikere.

Du er derfor, sammen med totalt 4200 medlemmer av MFO, invitert til denne undersøkelsen hvor vi vil kartlegge psykisk helse, arbeidsmiljø, bruk av helsetjenester og særlig beskyttende faktorer som forebygger helseplager. En studie av et slikt omfang er ikke blitt gjort tidligere og hovedformålet er å opparbeide en bredere kunnskap om feltet, som vil kunne bidra til å utarbeide mer spesifikke arbeidsrettede tiltak og bedre helsetjenester for musikere.

Både MFO og bransjen generelt har vært positive til undersøkelsen og vi håper du vil bidra med dine erfaringer. Studien er godkjent etter vanlige kriterier av REK (Regional Etisk Komite for forskningsetikk) og forskningsansvarlig i Helse Nord-Trøndelag. Forskerne vil kun få tilgang til en anonymisert datafil. Resultatene fra studien vil bli publisert nasjonalt og internasjonalt, og det vil ikke være noen muligheter for å spore funnene tilbake til enkeltpersoner.

Vi vil trekke ut 6 deltakere som vil få hvert sitt nettbrett i premie (iPad mini). Utfyllingen av spørsmålene vil ta 10-20 minutter.

Eventuelle spørsmål om studien kan rettes til: jonas.vaag@hnt.no

Mvh Doktorgradsstipendiat Jonas Vaag (Helse Nord-Trøndelag) & Prosjektleder og veileder Ottar Bjerkeset (Helse Nord-Trøndelag & NTNU).

Din identitet vil holdes skjult

Les om retningslinjer for personvern. (Åpnes i nytt vindu)

1) * I løpet av de siste 12 månedene, har du jobbet/hatt inntektsgivende oppdrag som musiker?

Ja Nei



Bakgrunnsopplysninger

2) Del 1

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for

Income

6) * Hva var din brutto lønnsinntekt seneste år? (alle arbeidsforhold)	
<small>https://web.questback.com/QB2/Quests/QuestDesigner/PreviewPage.aspx?QuestID=4423357&sid=J3T24H6L6r</small>	
<small>08.02.13</small>	<small>Forhåndsvisning Quest</small>
<p><input type="radio"/> under 100 000</p> <p><input type="radio"/> 100 000-250 000</p> <p><input type="radio"/> 250 000-400 000</p> <p><input type="radio"/> 400 000-800 000</p> <p><input type="radio"/> over 800 000</p>	

Employment type

9) * Hvilke(t) arbeidsforhold har du som musiker?
<p><input type="radio"/> Fast ansatt eller i vikariat <input type="radio"/> Freelance / selvstendig næringsdrivende <input type="radio"/> Begge deler</p>

Psychological distress (HSCL-25)

19) * Angi hvor mye hvert enkelt problem har plaget deg eller vært til besvær i løpet av de siste 14 dager

	Ikke plaget	Litt plaget	Ganske mye plaget	Veldig mye plaget
Hodepine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skjelving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Matthet og svimmelhet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervøsitet, indre uro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plutselig frykt uten grunn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stadig redd eller engstelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjertebank, hjerteslag som løper av gårde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følelse av å være anspent, oppjaget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anfall av angst eller panikk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Så rastløs at det er vanskelig å sitte stille	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mangel på energi, alt går langsommere enn vanlig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lett for å klandre deg selv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lett for å gråte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tanker om å ta ditt liv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dårlig matlyst	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Søvnproblemer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følelse av håpløshet med tanke på fremtiden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nedtrykt, tungsindig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følelse av ensomhet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tap av seksuell lyst og interesse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følelse av å være lur i en felle eller fanget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mye bekymret eller urolig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uten interesse for noe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følelse av at alt er et slit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følelse av å være unyttig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

General social support: Oslo Social Support (OSS-3)

21) * Hvor mange mennesker står deg så nær at du kan regne med dem hvis du får store personlige problemer?

- Flere enn 5
- 3-5
- 1 eller 2
- Ingen
- Vet ikke

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
- Hvis "I løpet av de siste 12 månedene, har du jobbet/hatt inntektsgivende oppdrag som musiker?" er lik "Ja"
-)

22) * Hvor stor interesse viser folk for det du gjør?

- Stor interesse
- Noe interesse
- Verken stor eller liten interesse
- Liten interesse
- Ingen interesse
- Vet ikke

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
- Hvis "I løpet av de siste 12 månedene, har du jobbet/hatt inntektsgivende oppdrag som musiker?" er lik "Ja"
-)

23) * Hvor lett er det å få praktisk hjelp fra naboer om du skulle trenge det?

- Svært lett
- Lett
- Verken lett eller vanskelig
- Vanskelig
- Svært vanskelig
- Vet ikke

Job demands



Din jobbsituasjon som musiker

24) Del 3

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
 - Hvis "I løpet av de siste 12 månedene, har du jobbet/hatt inntektsgivende oppdrag som musiker?" er lik "Ja"
-)

Her kommer noen spørsmål angående din jobbsituasjon som musiker. Med jobben mener vi her arbeidsoppgavene dine, uavhengig om du er ansatt eller selvstendig/freelance.

25) * Hvor ofte...

	Meget sjelden eller aldri	Nokså sjelden	Av og til	Nokså ofte	Meget ofte eller alltid
...er det nødvendig å arbeide i et høyt tempo?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...har du for mye å gjøre?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...opplever du avbrytelser som forstyrrer deg i arbeidet ditt?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Denne informasjonen vises kun i forhåndsvisningen

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
 - Hvis "I løpet av de siste 12 månedene, har du jobbet/hatt inntektsgivende oppdrag som musiker?" er lik "Ja"
-)

26) * Hender det at du har så mye å gjøre at du må sløyfe lunsj/pauser, må jobbe ut over din vanlige arbeidstid eller ta arbeid med hjem?

- Daglig
- Et par dager i uka
- En dag i uka
- Et par dager i måneden
- Sjeldnere eller ikke i det hele tatt

Hvordan passer følgende beskrivelse på din

nåværende jobb?

27) * Det er vanligvis ikke tid til å utføre arbeidsoppgavene på en skikkelig måte.

- Svært dårlig
- Dårlig
- Verken godt eller dårlig
- Godt
- Svært godt

Job control

28) * I hvilken grad...

	I svært liten grad	I liten grad	I noen grad	I høy grad	I svært høy grad
...kan du påvirke beslutninger som er viktige for ditt arbeid?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...kan du selv bestemme hvordan du skal gjøre arbeidet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...kan du selv bestemme ditt arbeidstempo?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...kan du selv bestemme hvilke oppgaver du skal få?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Job-related social support

31) * Om du trenger det, hvor ofte kan du få støtte og hjelp i ditt arbeid fra dine arbeidskolleger?

- Meget sjelden eller aldri
- Nokså sjelden
- Av og til
- Nokså ofte
- Meget ofte eller alltid

Work-nonwork interference

29) * Hvor ofte hender det at kravene på jobben forstyrrer ditt hjemmeliv og familieliv?

- Meget sjelden eller aldri
- Nokså sjelden
- Av og til
- Nokså ofte
- Meget ofte eller alltid

Effort-Reward Imbalance

30) * Hvor enig eller uenig er du i følgende utsagn?

	Helt uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Helt enig
Størrelsen på lønnen min er i riktig forhold til min innsats og mine prestasjoner på jobben	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sett i forhold til min innsats og mine prestasjoner får jeg den respekt og anerkjennelse jeg fortjener på jobben	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C

REK

Forskningsprosjekt

Musikerhelseprosjektet - kvantitativ del

Vitenskapelig tittel: Psykisk helse, psykososialt arbeidsmiljø og bruk av helsetjenester blant norske musikere - kvantitativ del.

Prosjektbeskrivelse: Prosjektets målsetning er å opparbeide kunnskap om psykisk helse og psykososiale arbeidsmiljøfaktorer i musikkbransjen. Problemstillingene er lite utforsket tidligere, nasjonalt såvel som internasjonalt, spesielt innenfor gruppen av artister som arbeider freelance. Prosjektet vil være det første av flere prosjekter innenfor feltet. Internasjonalt er fagområdet kjent som ”Performing Arts Medicine” og ”Performing Arts Psychology”. Vi har nå gjennomført datainnsamlingen fra vår kvalitative studie, og er i gang med analysene av disse dataene. Med denne kunnskapen i bakhånd skal vi nå gjennomføre en omfattende kvantitativ undersøkelse.

(Prosjektleders prosjektbeskrivelse)

Ref. nr.: 2012/1341 Prosjektstart: 01.1.2012 Prosjektslutt: 01.07.2014

Behandlingsstatus: Godkjent

Forskningsstatus: Pågående

Prosjektleder: Ottar Bjerkeset

Forskningsansvarlig(e): Helse Nord-Trøndelag

Initiativtaker: Bidragsforskning

Finansieringskilder:

Prosjektet finansieres av prosjektmidler fra Extrastiftelsen gjennom søkerorganisasjonen Mental Helse. PhD-kandidaten er Jonas Vaag.

Forskningsdata: Mennesker

Utvalg: Allmennbefolkning

Forskningsmetode:: Statistiske (kvantitative) analysemetoder

Antall forskningsdeltakere (Norge): 4500

Utdanningsprosjekt/doktorgradsprosjekt: Studium: Samfunnsmedisin, Nivå: PhD

Behandlet i REK

Dato REK

2.09.2012REK nord

Appendix D

Tables, correlation and descriptive statistics

Table D1
Descriptive Statistics of Categorical Variables on the Freelance Sample (N = 626).

Variables	N	Percent	Psychological distress	
			M	SD
Gender				
Male	361	57.7	1.38	.38
Female	265	42.3	1.48	.45
Income ^a				
< 100,000	22	3.5	1.55	.42
100,000 – 250,000	108	17.3	1.53	.47
250,000 – 400,000	236	37.7	1.44	.40
400,000 – 800,000	251	4.1	1.35	.40
> 800,000	9	1.4	1.23	.35
General social support				
Low	44	7.0	1.93	.57
Medium	276	44.1	1.45	.38
High	306	48.9	1.32	.36

Note. ^a NOK.

Table D2
Descriptive Statistics of Categorical Variables on the Full Sample (N = 1,365).

Variables	N	Percent	Psychological distress	
			M	SD
Gender				
Male	777	56.9	1.37	.38
Female	588	43.1	1.47	.42
Income^a				
< 100,000	28	2.1	1.59	.49
100,000 – 250,000	160	11.7	1.52	.44
250,000 – 400,000	425	31.1	1.47	.43
400,000 – 800,000	725	53.1	1.35	.35
> 800,000	27	2.0	1.28	.31
General social support				
Low	101	7.4	1.82	.55
Medium	599	43.9	1.44	.36
High	665	48.7	1.33	.36
Employment status				
Permanent	263	19.3	1.38	.35
Freelance	626	45.9	1.42	.42
Both	476	34.9	1.42	.40

Note. ^a NOK.

Table D3
Descriptive Statistics of Continuous Variables on the Freelance Sample (N = 626)

Variables	α	Min	Max	M	SD
Psychological distress	.93	1.00	3.28	1.42	.42
Age		2.00	75.00	42.83	1.02
Job demands	.78	1.00	5.00	3.16	.82
Job control	.87	1.00	5.00	3.71	.75
Job-related social support		1.00	5.00	3.53	1.04
ERI	.56	1.00	5.00	2.81	1.00
Work-nonwork interference		1.00	5.00	3.05	.97
Emotional Stability	.76	1.00	7.00	3.28	1.29
Conscientiousness	.56	2.00	7.00	5.00	.93
Sense of mastery	.82	1.40	5.00	3.93	.73

Note. Cronbach's alpha is calculated from the full sample.

Table D4
Descriptive Statistics of Continuous Variables on the Full Sample (N = 1,365)

Variables	α	Min	Max	M	SD
Psychological distress	.93	1.00	3.64	1.41	.40
Age		2.00	75.00	43.39	9.85
Job demands	.78	1.00	5.00	3.19	.78
Job control	.87	1.00	5.00	3.48	.84
Job-related social support		1.00	5.00	3.55	1.01
ERI	.56	1.00	5.00	2.73	1.00
Work-nonwork interference		1.00	5.00	3.10	1.00
Emotional stability	.76	1.00	7.00	3.24	1.27
Conscientiousness	.56	2.00	7.00	5.05	.97
Sense of mastery	.82	1.20	5.00	3.94	.72

Note. Cronbach's alpha is calculated from the full sample.

Table D5
Correlations Between Variables Included in the Main Analysis

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Psychological distress	–												
2. Age	-.13**	–											
3. Gender ^a	.12**	-.12**	–										
4. Income	-.17**	.21**	-.13**	–									
5. Job demands	.24**	-.14**	.07**	.09**	–								
6. Job control	-.18**	.01	-.10**	-.13**	-.06*	–							
7. Job-related social support	-.24**	-.10**	.01	.10**	-.08**	.16**	–						
8. ERI	.26**	-.07**	.03	-.22**	.20**	-.20**	-.31**	–					
9. Work-nonwork interference	.26**	-.13**	.08**	.10**	.54**	-.18**	-.13**	.19**	–				
1. General social support ^b	-.33**	-.03	.05	.06*	.05	.25**	.34**	-.24**	-.11**	–			
11. Conscientiousness	-.20**	.04	.13**	.06*	-.01	.07**	.06*	-.06*	-.07**	.15**	–		
12. Emotional stability	-.67**	.15**	-.17**	.15**	-.16**	.24**	.18**	-.22**	-.21**	.27**	.18**	–	
13. Mastery	-.57**	.06*	-.06*	.12**	-.17**	.29**	.25**	-.26**	-.23**	.37**	.23**	.54**	–

Note. The correlation coefficient is Pearson's r (two-tailed) calculated with pairwise deletion.

All variables have $N = 1,607$ except general social support ($N = 1,365$).

^aMale = . female = 1.

^bTotal score of the general social support scale (OSS-3).

* $p < .05$. ** $p < .01$.

