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MASTER'S THESIS

Work engagement and its relationship with
personality traits among teachers at the secondary
level in Norway

Sammenhenger mellom personlighetstrekk og
arbeidsengasjement blant ungdomsskolelærere

Ervin Hoti

Master of Teaching and Learning
Faculty of Education, Arts, and Sports
Department of Pedagogy, Religion, and Social Studies
Supervisor: Göran Söderlund
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I confirm that the work is self-prepared and that references/source references to all sources used in the work are provided, cf. Regulation relating to academic studies and examinations at the Western Norway University of Applied Sciences (HVL), § 10.

Preface

Writing this thesis has been gratifying because its topic involves a concept which I am deeply interested in, namely personality. Personality, and the measurement of it, has fascinated me for some time. Our personality—who we are—affects every part of our lives. It affects how we think, how we behave, and how others perceive and approach us. As my life as a student comes to a close and I face a career in teaching, I wonder how the personality characteristics which define me will affect my performance and engagement with work. More specifically, I worry whether my individual dispositions are unsuitable for teaching. Although I am hard-working, diligent, thorough, and responsible, I am also introverted and do in no way signal authority. While I do not believe one has to be a specific type of person to thrive as a teacher, the job still requires leadership skills and leaves little room for alone time to recharge one's batteries. My personal characteristics must then, in one way or another, affect how I perform and feel toward work. My curiosity surrounding this idea has been an exceptional intrinsic motivator throughout the work process, something which I am greatly appreciative of.

There are a couple of people I would like to acknowledge. First and foremost, I would like to thank my supervisor, Göran Söderlund, for his guidance and support. His availability and willingness to answer my queries has been of great assistance—from the project outlining to the finishing touches.

Second, I would like to thank John S. Seriot for his assistance in proofreading, and, more importantly, helping me advance my English writing proficiency to a level that, I hope, is presentable to the academic world. His feedback and guidance has been invaluable since my very first year at the institution.

Last, I also wish to thank the principals of the schools who were willing partake in the study by forwarding the survey to their teachers. Moreover, I am especially grateful to the teachers who took time out of their busy schedule to complete the survey. Without their participation, I would not have been able to do the analyses to finish my thesis.

Abstract

The current master's thesis examines the relationship between work engagement and personality among teachers at the secondary level in Norway. It is posited that basic personality characteristics can help us understand why certain teachers are more engaged with work than others. The Utrecht Work Engagement Scale (UWES) and the Big Five Inventory-20 (BFI-20) were used to assess the work engagement and personality traits of 112 teachers. Results of bivariate correlations and hierarchical multiple regression models indicate that personality plays a small yet notable part in predicting work engagement among teachers ($R^2 = 0.24, p < 0.01$). Further, the results indicate that among the five personality traits which were assessed, emotional stability is the strongest predictor of work engagement. The correlation matrix showed moderate correlations between emotional stability and work engagement ($r = 0.26, p < 0.01$) as well as two of its subscales, namely vigour ($r = 0.38, p < 0.01$) and dedication ($r = 0.27, p < 0.01$). Results from hierarchical regressions gave further support to the claim. Of all five personality traits, emotional stability had the greatest effect on three out of four of the outcome variables, namely work engagement ($\beta = 0.24, p < 0.05$), vigour ($\beta = 0.35, p < 0.01$), and dedication ($\beta = 0.30, p < 0.01$). Conscientiousness, agreeableness, and extraversion were also found to be significantly related, but only to certain subscales of work engagement. The results are limited by the small sample size, its fairly unrepresentative gender distribution, and a lack of contextual variables controlled for.

Sammendrag

I denne masteroppgaven ble sammenhengen mellom arbeidsengasjement og personlighet blant ungdomsskolelærere i Norge undersøkt. Utgangspunktet for oppgaven var ideen om at grunnleggende personlighetstrekk kan bidra til å forstå hvorfor noen lærere er mer engasjert i jobben sin enn andre. "The Utrecht Work Engagement Scale (UWES)" og "the Big Five Inventory-20 (BFI-20)" ble brukt til å måle arbeidsengasjementet og personlighetskarakteristikkene til 112 ungdomsskolelærere. Bivariate korrelasjoner og hierarkiske regresjonsanalyser indikerte at personlighet spiller en liten, men merkverdig rolle i å forutse læreres arbeidsengasjement ($R^2 = 0.24$, $p < 0.01$). Videre indikerte resultatene at blant de fem personlighetsdimensjonene som ble målt, er emosjonell stabilitet den sterkeste prediktoren. Korrelasjonsmatrisen viste moderate korrelasjoner mellom emosjonell stabilitet og arbeidsengasjement ($r = 0.26$, $p < 0.01$), samt to av dens underskalaer, nemlig vigør ($r = 0.38$, $p < 0.01$) og dedikasjon ($r = 0.27$, $p < 0.01$). De hierarkiske regresjonsanalysene støttet sammenhengen ytterligere. Av alle fem personlighetsdimensjonene hadde emosjonell stabilitet størst effekt på tre av de fire avhengige variablene, nemlig arbeidsengasjement ($\beta = 0.24$, $p < 0.05$), vigør ($\beta = 0.35$, $p < 0.01$), og dedikasjon ($\beta = 0.30$, $p < 0.01$). Planmessighet, medmenneskelighet, og ekstroversjon hadde også signifikante relasjoner til underskalaer av arbeidsengasjement. Studiens resultater er begrenset av at kontekstuelle variabler ikke er kontrollert for, i tillegg til et lite utvalg som ikke er representativ med tanke på kjønn.

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1.0 Introduction

In 2001, Richard Ingersoll (2001) wrote, “Few educational problems have received more attention in recent times than the failure to ensure that elementary and secondary classrooms are all staffed with qualified teachers” (p. 1). Today, the problem of teacher attrition and turnover still persists in countries all over the world (Clandinin et al., 2015; den Brok, Wubbels, & van Tartwijk, 2017; Lindqvist, Nordänger, & Carlsson, 2014; Liu & Onwuegbuzie, 2012; Plunkett & Dyson, 2013; Sutcher, Darling-Hammond, & Carver-Thomas, 2016). These issues have been attributed to burnout, low job satisfaction, organizational and occupational commitment, and low work engagement (Bakker, Schaufeli, & Hakanen, 2006; Klassen & Chiu, 2011). Norway—the country in which the current study was conducted—has not managed to escape these problems. Statistics Norway notes that 30% of qualified teachers do not occupy teaching positions. In addition, they forecast a shortage of 4 700 qualified teachers by year 2040 (Fredriksen, 2018).

Looking away from the problem of teacher attrition and turnover, however, burnout and low work engagement among teachers constitute a problem for other reasons. Teachers who experience burnout and low engagement with work have been found to be less sympathetic toward their students, have a lower tolerance for disruptions in the classroom, and are more likely to experience problems with both occupational and personal wellbeing and health (Bakker et al., 2006; Farber & Miller, 1981; Fernet, Guay, Senécal, & Austin, 2012; Küçükoğlu, 2014). Moreover, work engagement has been linked to teachers’ organisational commitment, performance, and effectiveness (Bakker & Bal, 2010; Bakker et al., 2006), which, in turn, are associated with higher student achievement (Darling-Hammond & Youngs, 2007; Joffres & Haughey, 2001; Wright, Horn, & Sanders, 1997). Factors which may not only negatively impact teachers’ health and wellbeing, but also jeopardize students’ wellbeing, quality of learning, and personal growth create a basis for research on work engagement among teachers (Hoti, 2018, p. 1).

Naturally, most studies attempting to explain low engagement and satisfaction with work among teachers have examined contextual factors such as salary, discipline problems in the classroom, lack of administrative support, workload, bureaucracy, and the profession’s societal status (Burke, Greenglass, & Schwarzer, 1996; Chan, 1998; Farber, 1984; Hoti, 2018; Pithers, 1995; Travers & Cooper, 1997). While many of these studies have found such factors to be related to teachers’ occupational stress, few have investigated the effects of individual differences such as *personality*.

Research on personality’s relationship with work engagement is scarce, as noted by Langelaan, Bakker, van Doornen, and Schaufeli (2006, p. 523). Findings of other studies vary, considerably so, in

both the strength of the association between variables, and which personality traits are significantly related to work engagement (Akhtar, Boustani, Tsivrikos, & Chamorro-Premuzic, 2015; Langelaan et al., 2006; Mróz & Kaleta, 2016; Woods & Sofat, 2013; Zaidi, Wajid, Zaidi, & Zaidi, 2013). However, despite these inconsistencies, closer examination seemingly indicates that low work engagement might be related to low emotional stability and high extraversion. This is supported by several studies on personality's relationship with *burnout*—work engagement's negative antipode—which indicate that high extraversion and low emotional stability are related to burnout (Alarcon, Eschleman, & Bowling, 2009; Burisch, 2002; Cano-Garcia, Padilla-Muñoz, & Carrasco-Ortiz, 2005; de Vries & van Heck, 2002; Langelaan et al., 2006; Mills & Huebner, 1998; Zellars, Hochwarter, Perrewé, Hoffman, & Ford, 2004).

The current master's thesis takes an individual differences perspective on work engagement among teachers in a Norwegian context. It posits that basic personality characteristics can help us understand why some teachers are more prone to low engagement with work than others. The research question is twofold:

- (1) *How large of a role do personality traits play in predicting teachers' work engagement?*
- (2) *Which personality trait(s) are the best predictors of teachers' work engagement?*

To answer these questions, a quantitative approach using survey data to create hierarchical regression models and a correlation matrix is used to examine personality's predictive capabilities on teachers' work engagement. The first question is investigated by looking at coefficients of determination (R^2), that is, finding the proportion of variance in work engagement that is predictable from personality traits while controlling for certain theoretically confounding variables. The second question is examined by looking at correlation coefficients (r) and standardized beta coefficients (β).

It should be explicitly stated that the current thesis does not posit that individual differences such as personality traits are the *main causes* of low work engagement and high turnover rates among teachers. The main causes are likely to be, as research referenced above indicates, a series of contextual variables related to the teaching profession. Rather, the thesis posits that personality can explain why certain people are more *prone* to low work engagement, and why certain people experience lower work engagement than others despite working in the same environment.

2.0 Theory

The theoretical framework includes a description of the topic's two main concepts: work engagement and personality. Both descriptions cover the concepts' history from early to more current and prominent conceptualizations and approaches. Afterwards, a more detailed look at the concepts' underlying structure follows, in the perspective of those assessment approaches that are most widely used. Last, validity concerns are discussed.

2.1 Work engagement

Nineteen years ago, Myers (2000) remarked that there was an overwhelming tendency among psychology scholars to primarily research poor mental well-being, as opposed to the characteristics of good mental health. He supported this claim by pointing out that publications which researched negative emotions trounced researching positive emotions by a ratio of 14:1 (p. 56). In the same journal issue, Seligman and Csikszentmihalyi (2000) called for a new branch of psychology that would seek to understand how humans, groups, and institutions can thrive, flourish, and function optimally. Essentially, they suggested that psychology scholars needed to shift their focus from “repairing the worst things in life to also building positive qualities” (Seligman & Csikszentmihalyi, 2000, p. 5). This new branch of psychology came to be known as *positive psychology*. The new positive (seemingly in both senses of the word) turn gave new life to and sparked interest in topics and concepts which were scarcely researched – one of which was *work engagement*.

Work engagement as a concept has existed for many years and has been conceptualized in several ways by various researchers. It was first conceptualized by Kahn (1990) as the “harnessing of organizational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performance” (p. 694). Put differently, employees who are highly engaged in their work identify with it and the associated roles. Many other approaches to conceptualize work engagement would follow, mostly varying in terms of its underlying structure and its relatedness to job satisfaction, enthusiasm, personal investment, meaningfulness, commitment, and focus (Harter, Schmidt, & Hayes, 2002; Rothbard, 2001; Wellins, Bernthal, & Phelps, 2011). Today, the instrument most commonly used to assess work engagement (and the one used for this thesis) is the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2004; Schaufeli, Salanova, Bakker, & González-Romá, 2002). Consequently, the most commonly used *definition* of work engagement was established by the researchers who developed the instrument. Schaufeli et al. (2002) defined work engagement as a “positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption” (p. 74). As such, they posit that work

engagement has a three-factor structure and, accordingly, their instrument measures work engagement as a combination of these, namely vigour, dedication, and absorption.

According to Schaufeli and Bakker (2004), those who are high in *vigour* are energetic and mentally resilient when working. In addition, they have a strong willingness to invest effort in their work and are persistent in difficult situations. Those who are high in *dedication* can be characterized as those who derive a considerable sense of significance from one's work and find it meaningful. These people feel enthusiastic, proud, and are inspired by their work. Last, *absorption* refers to how immersed one is in one's work. Those who are high in absorption are concentrated and happily engrossed in their work to such a degree that they feel time passes quickly and they forget everything else around them. These people find it difficult to detach themselves from work tasks which they are committed to and engaged in (pp. 5 – 6).

The results of several studies support the factorial validity of the Utrecht Work Engagement Scale. Confirmatory factor analyses confirm that the theorized three-factor structure fits well with the data of various samples from different countries (J. Hakanen, 2002; Hallberg & Schaufeli, 2006; Nerstad, Richardsen, & Martinussen, 2010; Panthee, Shimazu, & Kawakami, 2014; Seppälä et al., 2009; Storm & Rothmann, 2003; Xanthopoulou, Bakker, Kantas, & Demerouti, 2012; Yi-Wen & Yi-Qun, 2005). In addition, these studies show that the three subscales are interrelated and internally consistent.

Further, as with many other constructs, it is particularly relevant to know whether work engagement is stable over time. Theoretically, it is supposed to be—based on Schaufeli and Bakker's (2004) conceptualization: "Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state..." (p. 4). Many longitudinal work engagement studies support this claim (De Lange, De Witte, & Notelaers, 2008; J. J. Hakanen, Peeters, & Perhoniemi, 2011; J. J. Hakanen, Perhoniemi, & Toppinen-Tanner, 2008; J. J. Hakanen & Schaufeli, 2012; J. J. Hakanen, Schaufeli, & Ahola, 2008; Mauno, Kinnunen, & Ruokolainen, 2007; Schaufeli, Bakker, & van Rhenen, 2009; Seppälä et al., 2009; Simbula, Guglielmi, & Schaufeli, 2011; Weigl et al., 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Seppälä et al. (2015) have done the longest longitudinal work engagement study to date, and argue in favour of the stability of work engagement. They assessed the stability of work engagement in a sample of 1 964 Finnish dentists over a seven-year time period with a three-wave dataset. Their results strongly indicated that work engagement is a stable state of mind. The stability and change model showed that 69-77% of work engagement is accounted for by stable components (Seppälä et al., 2015, p. 369).

2.1.1 Related concepts

Although the emergence of work engagement as a concept is fairly new, there are many other related concepts, namely *organizational commitment*, *job satisfaction*, *extra-role behaviour*, *personal initiative*, *positive affectivity*, *job involvement*, *job empowerment*, *flow*, and *workaholism*. Naturally, one questions to which extent work engagement explains something more or different than other concepts that have to do with occupational health psychology. Schaufeli and Bakker (2010) argue that other similar concepts either *partially* overlap or are conceptually distinct from work engagement. In case of the latter, for instance, job satisfaction according to them has to do with employees' feelings *about* or *toward* work, whereas work engagement has to do with one's mood *at* work.

Next, job involvement refers to the extent to which work plays a role in an employee's self-image (Lodahl & Kejnar, 1965, p. 24). This is similar to Kahn's (1990) conceptualization of work engagement in that it has to do with identifying oneself with one's work. Nonetheless, job involvement does not adequately cover Schaufeli and Bakker's (2004) conception of work engagement. Seemingly, it may be similar to dedication, one of the three factors which make up work engagement, in that it has to do with finding work meaningful and significant. Still, it does not tie in with the other two factors that have to do with energy and immersion at work, namely vigour and absorption.

Flow is defined as a state of optimal experience of energized focus in which one is effortlessly concentrated, intrinsically motivated, and in complete control of the task at hand. When someone is in a flow state, they experience a complete loss of self-consciousness and sense of time (Nakamura & Csikszentmihalyi, 2014, p. 90). An everyday connotation of experiencing flow would be that of "being in the zone", particularly in the context of sports and other athletic activities. Evidently, flow is closely related to work engagement as it has to do with energy and immersion, which is what vigour and absorption are about. However, Schaufeli and Bakker (2010) argue that although flow and absorption are seemingly similar concepts, flow is regarded as a *short-term* optimal experience, whereas absorption refers to a more continuous and persistent state of mind (p. 15).

Workaholism is also seemingly related to work engagement, as it has to do with working energetically while immersed in one's tasks. However, Schaufeli and Bakker's (2004) conceptualization of work engagement does not include the *compulsive* drive to work which workaholism is associated with. Schaufeli and Bakker (2010) argue that "engaged employees work hard because work is challenging and fun, and not because they are driven by a strong inner urge they cannot resist" (p. 15). The *addictive* component, which scholars like Oates (1971) and Porter

(1996) have pointed at, is what separates work engagement from workaholism. To them, workaholism is similar to alcoholism in that workaholics end up neglecting parts of their lives for the indulgence of work in the same way alcoholics do for the indulgence of alcohol. Some have distinguished between “good” and “bad” workaholism (Buelens & Poelmans, 2004; Naughton, 1987) in which good workaholism refers to being high in work commitment, but low in compulsion. While this is closer to work engagement, it becomes seemingly redundant since, firstly, there is little point in having two labels for the same concept, and secondly, as Porter (1996) argues, it is an inappropriate distinction to make when workaholism implies addiction, which is not “good”.

Other than researchers’ arguments and viewpoints on the difference between these two concepts, there is also empirical support for addiction as the component which differentiates them. In a sample of over 2 000 Dutch employees, Schaufeli et al. (2013) found that working excessively does correlate positively with work engagement, but working compulsively does not. “The finding that the excess work component was positively correlated with work engagement, whereas the compulsion component was not, underscores that working compulsively, rather than working hard, lies at the core of workaholism” (p. 209).

2.1.2 Work engagement, burnout, and conflicting views

The various ways in which work engagement has been conceptualized over the years has resulted in discrepancies in the understanding of its measurement. Generally, measuring work engagement has been understood and approached in two separate ways. The first point of view is that it is an independent construct with a single dimension ranging from low engagement to high engagement (Kahn, 1990). The second stance is that work engagement is on the same continuum as burnout, in which burnout is on the negative end and work engagement is on the positive. Consequently, this implies that employees cannot be burned out and engaged at the same time. This view has been advocated by both Schaufeli et al. (2002), who developed the Utrecht Work Engagement Scale, and Christina Maslach, who is the leading expert on job burnout (Maslach, Schaufeli, & Leiter, 2001). However, Schaufeli et al. (2002) acknowledge that while this makes sense *conceptually*, when it comes to measurement, work engagement should be assessed as an independent concept, distinct from burnout (p. 75).

Indeed, while interest in work engagement largely emerged with the rise of positive psychology, it was also driven by decades of research on burnout—so much so that the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2004; Schaufeli et al., 2002) was based on a measure of burnout (Maslach, Jackson, & Leiter, 1996). More specifically, vigour and dedication were made to be the opposite of

two facets of Maslach's Burnout Inventory, namely *emotional exhaustion* and *depersonalization*, respectively. Consequently, some question whether it is valid to measure work engagement as a unipolar concept with the UWES. For instance, Cole, Walter, Bedeian and O'Boyle (2012) argue that work engagement is a redundant concept that does not explain anything beyond what burnout already does. Moreover, they find it paradoxical that Schaufeli et al. (2002) view work engagement and burnout as independent constructs while also developing their instrument based on a measure of burnout and recognizing them as opposing phenomena (pp. 5–6). Kuok and Taormina (2017) concur with a similar stance, remarking that since the Utrecht Work Engagement Scale was not independently derived, but rather made to be the opposite of burnout, it is not valid to assess work engagement as an independent concept distinct from burnout because its measures are inherently negatively correlated with burnout and its dimensions (p. 265).

2.2 Personality and the five-factor model

Several taxonomies of personality have been proposed over the past century, each conceived from a variety of theoretical perspectives and approaches (Srivastava & John, 1999, pp. 103–105). Though there were some neurophysiology and biological underpinnings involved, the earliest research on which traits primarily constitute human personality was more or less based on the researchers' intuition from personal observations and experience. Although these early approaches contributed to the understanding of behavioural differences between individuals, they were seemingly difficult to adopt as the foundation for an agreed upon taxonomy of personality when compared to other branches of science. For instance, as John (1989) remarks, whereas biologists can "find" animals and classify them based on attributes such as physiology, personality traits cannot be seen or directly observed. In an attempt to systematize and specify individual differences into a common framework, personality psychologists were faced with a difficult task because "personality attributes are abstract concepts that have to be inferred" (p. 261).

Researchers started turning to the natural language as a source for personality descriptors (Allport & Odbert, 1936; Klages, 1926). Allport and Odbert (1936) went through an unabridged English dictionary and extracted all personality-relevant terms that could be used to "distinguish the behaviour of one human being from that of another" (p. 24). Their approach was guided by the *lexical hypothesis*, and the work they did laid the groundwork for what would become today's most used personality framework. The lexical hypothesis posits that important and socially relevant personality characteristics will eventually be encoded into our language. More importantly, the more salient the individual differences are, the more likely they are to be encoded into our language as a

single word (Goldberg, 1982, p. 204). As such, dictionaries provided an extensive and finite collection of personality descriptors for researchers to work from.

Through categorizing, eliminating, and lumping together descriptors, Cattell (1943) managed to reduce 4 500 of Allport and Odbert's (1936) 18 000 trait terms—which they had categorized as *stable* traits—down to 35 clusters of traits. Fiske (1949) would then take 22 of Cattell's (1943) 35 clusters and become the first to discover, through use of factor-analysis, a five-factor structure. Tupes and Christal (1961) reanalysed the factor structure of Fiske's (1949) initial 22 trait descriptors in eight different samples. In each analysis, they found, again, “five relatively strong and recurrent factors and nothing more of any consequence” (p. 14). Numerous other researchers would follow to successfully replicate the five-factor structure (Borgatta, 1964; Digman & Takemoto-Chogk, 1981; Norman, 1963). This would eventually be known as *the five factor model*, and the traits would be known as the *Big Five* (Goldberg, 1981). This latter label, however, does not imply a type of “greatness”, but rather that the traits are extremely broad because they “represent personality at the broadest level of abstraction, and each dimension summarizes a large number of distinct, more specific personality characteristics” (Srivastava & John, 1999, p. 105). Researchers have labelled the five factors differently over the years. Today, there seems to be more consensus, as most personality inventories include the following five factor labels: *openness/openness to experience*, *conscientiousness*, *extraversion*, *agreeableness*, and *emotional stability* (or its negative antipode, neuroticism).

2.2.1 The *Big Five* factors and previous studies on work engagement

Extraversion is associated with positive emotionality, sociability, and high activity levels. Extraverted individuals tend to be outspoken, domineering, and assertive (Srivastava & John, 1999, p. 111).

Normally, they seek the company of others for stimulation. Kim, Shin, and Swanger (2009) note that it makes sense, theoretically, for extraversion to have a positive relationship with work engagement because both concepts share the components of high energy and positive emotionality (p. 98). The findings of some studies support the claim (Akhtar et al., 2015; Langelaan et al., 2006; Mostert & Rothmann, 2006).

Agreeableness is, according to Costa, McCrae, and Dye (1991), similar to extraversion in that it is also a trait of interpersonal behaviour (p. 888). However, whereas extraversion has to do with a preference for a high quantity of social stimulation, agreeableness has more to do with the *characteristic quality* of social interaction. Those who are high in agreeableness are compassionate, empathic, trustful and cooperative (Srivastava & John, 1999, p. 121). Those who are low in

agreeableness are often competitive and challenging, as they disregard others' feelings to a larger degree. Agreeableness can thus be seen as a "continuum from compassion to antagonism" (McCrae & Costa, 1985, p. 2). While some have found agreeableness to be weakly related to work engagement (Akhtar et al., 2015; Kim et al., 2009), others have found it to be positively related to occupational health (Cano-Garcia et al., 2005; Mills & Huebner, 1998; Zellars, Perrewé, & Hochwarter, 2000).

Conscientiousness includes a broad range of traits that refer to a person's tendency to be self-controlled, responsible to others, hardworking, diligent, orderly, and rule-abiding (Roberts, Jackson, Fayard, Edmonds, & Meints, 2009). These traits are reflected in the factor's previous labels, such as dependability, task interest, will to achieve, impulse control, and work (Srivastava & John, 1999, p. 111). Questionnaires normally include statements that have to do with how one deals with tasks, e.g. "Does a thorough job" or "Makes plans and follows through with them" (Donahue, Kentle, & John, 1991). Conscientiousness has been found to be a significant predictor of work engagement in several studies (Akhtar et al., 2015; Bakker, Demerouti, & Ten Brummelhuis, 2012; Kim et al., 2009; Mostert & Rothmann, 2006; Mróz & Kaleta, 2016).

Openness to experience refers to a person's tendency to be curious and play with abstract ideas. In addition, it also encompasses a person's preference for new experiences as opposed to strict routines and a conventional lifestyle. Those who are high in openness to experience tend to be creative and appreciative of art and literature. To them, intellectual endeavours and new experiences are regarded as highly important in the pursuit of self-actualization. Across studies, openness has been found to be either insignificant or a weak predictor of work engagement (Inceoglu & Warr, 2011; Kim et al., 2009), as well as work performance (Barrick, Mount, & Judge, 2001; Griffin & Hesketh, 2004) and burnout (Alarcon et al., 2009; Piedmont, 1993).

Emotional stability (or its negative antipode, neuroticism) generally refers to the degree to which a person experiences negative emotions. Those who are high in emotional stability are, naturally, more emotionally stable in that they experience feelings such as anxiety, nervousness, fear, anger, and stress to a lesser extent (Srivastava & John, 1999, pp. 110, 113, 121). Neurotic individuals, who are low in emotional stability, react more strongly to stressors and tend to feel helpless in the face of difficulties. They are more self-conscious, have difficulties controlling their impulses, and struggle to inhibit cravings and delay gratification (Costa & McCrae, 1985, p. 21). Emotional stability has been found to be positively related to work engagement (Langelaan et al., 2006; Mostert & Rothmann, 2006; Mróz & Kaleta, 2016; Woods & Sofat, 2013). Moreover, burnout literature, which is much

more extensive, convincingly suggest that low emotional stability “is the core characteristic of burnout” (Alarcon et al., 2009; Burisch, 2002; Cano-Garcia et al., 2005; de Vries & van Heck, 2002; Langelaan et al., 2006, p. 521; Mills & Huebner, 1998; Zellars et al., 2004).

3.0 Method

To examine personality’s relationship with work engagement and which personality trait(s) are the best predictors, a quantitative approach was chosen in which four hierarchical multiple regressions and a correlation matrix were analysed. Data was collected through online surveys completed by teachers at the secondary level. This chapter presents an in-depth discussion on methodological decisions and design. First, the instruments chosen to measure personality and work engagement are presented, followed by a discussion on their validity and reliability. Second, the process of survey creation and its content are presented. Third, the recruitment process is discussed in detail, followed by a presentation of demographics and their role as control variables. Fourth, the specifics of the analytic procedure are made clear. Fifth, the reliability of measurements is assessed, as well as the reproducibility of the study. Last, ethical considerations are discussed.

3.1 Instruments

When choosing instruments for assessing personality and work engagement, it was important that they did not consist of too many items, causing the teachers to be less inclined to respond. There are a myriad of personality instruments, and these, in particular, can be quite long. Some personality questionnaires include as many as 240 items. Although instruments with more items yield data with better statistical power, too long of a survey would likely decrease the likelihood of teachers taking time out of their busy schedule to respond. With this in mind, the instruments chosen to assess personality and work engagement were the Big Five Inventory-20 (BFI-20) (Engvik & Clausen, 2011) and the Utrecht work engagement scale (Schaufeli & Bakker, 2004; Schaufeli et al., 2002).

3.1.1 BFI-20

The BFI-20 is based on John, Donahue, and Kentle’s (1991) *Big Five Inventory*, which consists of 44 items. Using a Norwegian version of the 44-item instrument, Engvik and Clausen (2011) developed a shorter version consisting of 20 items, hence the name BFI-20. The Big Five Inventory (1991) and, consequently, the BFI-20 are based on the five-factor model of personality. The BFI-20 consists of four items for each factor. The items are in the form of statements, e.g. “I tend to be quiet” and “I have few artistic interests”. When answering, respondents state whether the statements apply to them or not on a Likert-type scale ranging from one to seven. Half of the items are negatively keyed, although not evenly. While there are two negatively keyed items for extraversion, conscientiousness,

and agreeableness, there are three negatively keyed items for the emotional stability factor and one negatively keyed item for openness to experience. For this study, personality scale scores were calculated as means. Hence, BFI-20 yielded five personality scale scores which ranged from one to seven. Refer to appendix B to see a copy of the questionnaire and the Norwegian translation which was used.

According to Engvik and Clausen (2011), the short Norwegian personality instrument shows adequate levels of psychometric quality. The method used can be described as experimentation of shorter versions of BFI-44 while continuously monitoring psychometric quality. Psychometric quality was measured by structural validity, internal consistency, factor divergence, maximal representation, test-retest reliability, and criterion validity. Structural validity, internal consistency, maximal representation, and factor divergence were tested on a convenience sample (n=630, 54% male, age varied from 18 to 72 years old). Test-retest reliability (two-month period) and criterion validity were tested on two samples of students (n=133 and n=150, 57% female in both samples). On average, the personality scales had an internal consistency of 0.67, a test-retest reliability of 0.72, a representativeness coefficient of 0.88, and a predictive validity of 0.46. These values are acceptable, especially with such few items. Furthermore, the thorough and extensive measures taken to minimize loss of psychometric quality and secure validity are satisfactory.

3.1.2 Utrecht work engagement scale (UWES)

The Utrecht work engagement scale, or UWES for short, is a 17-item questionnaire developed by Schaufeli and Bakker (2004). It measures work engagement as a construct composed of three underlying dimensions, namely vigour (six items), dedication (five items), and absorption (six items). The items are in the form of statements, e.g. "I get carried away when I'm working" and "At my job, I feel strong and vigorous". When answering, the respondents state how often they feel that way about their work on a Likert-type scale ranging from zero (never) to six (every day). None of the items are negatively keyed. The scale scores of the three subscales and work engagement as a whole are calculated as means. As such, the UWES yields four scale scores: three subscale scores (vigour, dedication, and absorption) and a total score (work engagement) that ranges from zero to six. Refer to appendix A to see a copy of the questionnaire and the Norwegian translation which was used.

Several studies have examined the validity of the UWES and work engagement as a construct. Seppälä et al. (2009) investigated the construct validity of the instrument by inspecting its factor structure. Their results, using confirmatory factor analysis, strongly support the theorized three-factor structure, indicating that work engagement consists of three highly correlated factors, namely

vigour, dedication, and absorption. The results of similar studies further support the three-factor structure (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004; Schaufeli, Bakker, & Salanova, 2006; Schaufeli et al., 2002; Seppälä et al., 2009). Further, the UWES has been cross-validated in several countries, like South Africa (Storm & Rothmann, 2003), Norway (Nerstad et al., 2010), China (Yi-Wen & Yi-Qun, 2005), Finland (J. Hakanen, 2002), Nepal (Panthee et al., 2014), and Greece (Xanthopoulou et al., 2012). Each study found that a three-factor structure was the best fit for the data. Additionally, the three subscales had acceptable internal consistencies in every single study. The consistently similar findings across studies with differing samples, particularly in terms of culture and the occupational groups studied, strongly support the instrument's cross-sample validity.

3.2 The survey

The online survey was created in Questback and consisted of four parts. The first part was an introductory page which informed the participants of (1) the aim and purpose of the study, (2) who was in charge of the study, (3) why they were being asked to participate, and (4) what participating would involve. In addition, contact information was provided for further questions. The respondents were fully aware of the study's research aims and what the survey was assessing; they knew that the purpose of the survey was to assess their personality and work engagement, and that the data would be used to examine the relationship between these. Further, they were informed that participation was voluntary, that they would remain anonymous, and that it would take between five to ten minutes to complete the survey.

The second part included questions to collect demographical information. The information gathered concerned gender, age, years of work experience, and educational background. For age and years of work experience, the participants responded in ranges, e.g. "between 22 and 34 years old" and "11 to 19 years of work experience". Although use of exact data provide more reliable results, using ranges was a compromise which alleviated some risks of ethical issues. Specifically, ranged categories were more protective of the identities of the respondents. The teachers' educational background was assessed by asking them to state their job title. Generally, there are five job titles in the teaching profession, varying by amount of years of higher education and type of degree (bachelor's or master's). Refer to table 1 to see how these titles differ. If the options provided did not adequately describe their educational background, the participants had an "other" option for which they could use to specify.

The third part of the survey consisted of questions which assessed the respondents' personalities. This part included the items from the BFI-20, e.g. "I am talkative" and "I do a thorough job". The

questions were arranged randomly, meaning the respondents did not answer four questions in a row which measured extraversion. Negatively keyed items were reverse coded in Questback, as opposed to doing it in SPSS. There was no “I do not want to answer” option. If the respondents did not want to answer, they left the boxes empty. In retrospect, offering such an option would be better. That way one could tell whether respondents were forgetful or did not want to answer.

The fourth part of the survey consisted of questions which assessed the respondents’ work engagement. This part included the items from the UWES, e.g. “At my work, I feel bursting with energy” and “I am enthusiastic about my job”. As in the third part, the questions were arranged randomly and there was no “I do not want to answer” option. On the other hand, none of the questions were negatively keyed.

3.3 Recruitment and sample

Traditional state schools were randomly picked from a Wikipedia page (‘Ungdomsskoler i Norge’, 2017) listing all secondary schools in Norway. Traditional, in this context, meant any non-private school which did not use specific pedagogical approaches, like Waldorf or Montessori pedagogy, or whose ethos was particularly grounded in religious views. As for the schools which were picked, no considerations were made as to how commendable they were in terms of reputation or the pupils’ academic achievements as reflected by yearly national assessments. Further, no considerations were made regarding the schools’ size, in terms of pupil and teacher count.

For the sake of validity and analysis, it was important that the respondents were from the same population. More specifically, in the context of examining work engagement, this meant that they should be doing the same type of work. This warrants the exclusion of schools which practice specific pedagogical approaches or have a religious ethos. To exemplify, a typical work day of a teacher at a Montessori school is likely different from that of a teacher at a traditional state school. Moreover, this sentiment is also why the study strictly examined the secondary level. Like in the previous example, teachers’ job tasks vary considerably across grade levels to such a degree that the day-to-day work life of a first-grade teacher is likely substantially different from that of an eight-grade teacher. Some might argue that, despite both being labelled teachers, they are essentially *different jobs*.

Participants were recruited by having principals at several schools distribute the survey to teachers at the secondary level. Principals at randomly picked schools were contacted by telephone and briefly informed of the research aims and scope. Subsequently, they were informed of what partaking in the project would entail, with regard to both themselves and the teachers at their schools. First, the

principals were told that taking part meant they would have to share a hyperlink for an online survey to the teachers at their school teaching at the secondary level. They were told that if some of their teachers taught at both the primary and secondary levels, these should also be included. Further, those who had a position such as assistant, special education teacher, or deputy head teacher should be excluded unless their position also included largely the same job tasks as an ordinary teacher. Such job tasks include planning and delivering lessons, assigning and correcting work, assessing and reporting on pupils' social and academic development, monitoring and managing pupils' behaviour, etc. Second, when informing the teachers of the survey, principals were to tell them that the survey takes five to ten minutes to complete, that participation was voluntary and that they would remain anonymous. They were free to inform the teachers however they wanted, whether it be by email or in person. Last, the principals were told to report back the number of teachers they sent the survey to. This was needed to calculate the response rate.

Forty-seven schools were contacted within a two-week period. Of the 47 schools, 13 agreed to take part in the study. In total, the principals distributed the survey to 387 teachers. Of those, 114 responded, resulting in a response rate of 29.46%. Two respondents were removed from the sample due to having job titles which were not in line with the thesis's scope, decreasing the working sample to 112. A hundred and one teachers responded to the survey entirely, while 11 abstained from answering at least one question. Between them, 14 questions were left unanswered in total. At most, three questions were left unanswered by one single respondent. Furthermore, no particular questions recurred as ones which the respondents consistently abstained from answering, implying that no specific questions were particularly sensitive or worded confusingly.

3.3.1 Demographics

Frequency distributions of the demographics of the study sample are presented in table 1 below. The gender distribution is perhaps particularly notable. There are four times as many women as there are men in the sample. Since there are more women than men in teaching positions at the secondary level in Norway (Statistisk Sentralbyrå & Utdanningsdirektoratet, 2018) and women tend to be more willing to answer voluntary surveys (Cull, O'Connor, Sharp, & Tang, 2005; Curtin, Presser, & Singer, 2002; Singer, van Hoewyk, & Maher, 2002), it was expected that the majority of the respondents would indeed be women. For this thesis's pilot study, participation was even more dominated by women, with 62 out of 70 respondents being women. The most central question is whether the sample is representative of the target population, as this is a key validity concern. In a national sample of 15 521 teachers who teach at the secondary level (Statistisk Sentralbyrå & Utdanningsdirektoratet, 2018), roughly two-thirds were women. Compared to the current study

sample, in which 79.5% of the teachers were women, it is apparent that while the study sample is close to representative in terms of gender, higher male participation would be more representative of the target population.

Table 1. Frequency distribution of demographics among teachers at the secondary level

Demographics	N	%
Gender		
Female	89	79.5%
Male	22	19.6%
Age		
22 – 34	22	19.6%
35 – 44	36	32.1%
45 – 54	33	29.5%
55 – 64	19	17.0%
65+	2	1.8%
Work experience		
Less than a year	4	3.6%
1 – 5	19	17.0%
6 – 10	19	17.0%
11 – 19	39	34.8%
20+	31	27.7%
Educational background		
Lacking appropriate formal teacher education	2	1.8%
2 – 3 years, bachelor’s degree	2	1.8%
4 years, bachelor’s degree	19	17.0%
5+ years, bachelor’s degree	57	50.9%
5 years, master’s degree	4	3.6%
6+ years, master’s degree	28	25.0%

Note. One respondent chose not to disclose their gender. The numbers under educational background refers to years of higher education. The plus sign means “at least” (e.g., “6+ years” means “at least six years”).

3.3.2 Demographics as control variables

The survey questions to collect demographic data for this study were chosen on the grounds of working as control variables – to reduce the influence of confounding effects. There are theoretical reasons for why variables such as gender, age, work experience, and educational background may be extraneous variables that play a part in work engagement among teachers. For starters, work engagement has been shown to slightly increase with age (Fong & Ng, 2012, p. 396; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008, p. 141; Schaufeli et al., 2006, p. 713). Research on

burnout, which is theorized to be the antipode of the work engagement construct, further supports such findings. Specifically, younger workers have been found to be less likely to experience burnout (Friedman, 1991; Schaufeli & Enzmann, 1998). In terms of gender being associated with work engagement, studies indicate that female workers are more engaged than male teachers (Fong & Ng, 2012, p. 394; Klassen et al., 2012, p. 330; Klusmann et al., 2008, p. 141). Moreover, gender seems to matter when it comes to experiencing work stress. Research indicates that women are better at using coping strategies to reduce burnout than men. The findings of some researchers suggest that the presence of children may raise men's level of work stress significantly compared to women's (Greenglass, Burke, & Ondrack, 1990). Furthermore, work experience has also shown to be associated with work engagement. Significantly positive, though modest, correlations have been found between work engagement and years of work experience in a sample of 853 teachers from five different countries (Klassen et al., 2012, p. 330). In a validation study of the Nepalese version of the UWES, nurses with more work experience showed significantly higher levels of overall engagement (Panthee et al., 2014, p. 11). Last, educational background has been found to be related to burnout. More specifically, some results indicate that those with a higher level of education are more prone to burnout (Schaufeli & Enzmann, 1998, p. 76).

3.4 Analytic procedure

Statistical Package for the Social Sciences (SPSS) version 24 was used for data analysis. At the stage of inputting data, the demographic variables were dummy coded. For instance, males were coded as 1 and women were coded as 2. Naturally, for age, work experience, and educational background, older age, more years of work experience, and higher education level equated to higher values. After the initial data input, four types of analyses were conducted. First, descriptive statistics were run to gather the frequency distribution of the demographics of the sample as well as response means and standard deviations for each scale. Second, a reliability analysis was run to assess internal consistencies and mean inter-item correlations of the scales. For this part, the function called "scale if item deleted" was used to see whether any items failed to contribute to the measurement of its respective construct. Third, a correlation matrix including all of the relevant research variables was made to examine how the variables relate to each other. Two-tailed Pearson's correlation coefficient was used to assess the strength of the relationship between variables. Missing cases were excluded pairwise, meaning that for each pair of variables for which correlations were requested, those responses which had missing data on either one or both of the variables were excluded when computing the correlation coefficient (Finch, French, & Immekus, 2016, p. 103). Last, four two-step hierarchical multiple regression models were made to inspect the relative contributions of

personality traits on work engagement and its three subscales. In the first step, the demographic variables were entered to control for gender, age, work experience, and educational background. In the second step, scale scores of the five personality traits were entered. Missing cases were excluded pairwise in these models, similarly to the correlation matrix. In line with the second research question, it was mostly interesting to examine each personality trait's effect on work engagement *relative to the other personality traits* to see which play the larger role. As such, standardized coefficients were preferred over unstandardized ones.

3.5 Reliability

In this chapter, the reliability of the measurements and method is discussed. First, the instruments' reliability is evaluated by use of internal consistencies and mean inter-item correlation coefficients. Second, item trimming and grounds for item removal is discussed. Last, the reliability of the method's design is discussed by assessing its reproducibility.

3.5.1 Internal consistency

Internal consistencies (Cronbach's alpha) and mean inter-item correlations of the scale items are presented in table 2. While mean inter-item correlations are less common to present than the more widely used Cronbach's alpha, they are included due to the small number of items in each scale. In situations where there is a small number of items per scale, it may be more appropriate and desirable to also examine mean inter-item correlations, as these are not as biased against short scales as Cronbach's alpha (Garson, 2014; Peterson, 1994).

Table 2. Reliability coefficients of research variables

Scales and subscales	Number of items	Cronbach's alpha	Mean inter-item correlation
Work engagement	16	.922	.450
Vigour	6	.846	.493
Dedication	4	.806	.521
Absorption	6	.834	.524
Personality traits			
Extraversion	4	.838	.568
Conscientiousness	4	.648	.334
Openness	4	.715	.421
Agreeableness	4	.563	.270
Emotional stability	4	.690	.429

Note. The work engagement scale is comprised of every item in the vigour, dedication and absorption scales.

Most of the scales show strong internal consistencies. Three scales, namely emotional stability, conscientiousness, and agreeableness, show alpha coefficients below the widely used 0.7 cut-off (Nunnally, 1978). However, due to (1) the small number of items used to measure these constructs, (2) the exploratory nature of the study, and (3) the constructs' fuzzy and ambiguous structure, none of these scales have been excluded from further analysis. The first of these three points should not be understated. Cronbach's alpha is sensitive to the number of items in a scale, and it is not uncommon to find low alpha coefficient values with scales that have less than ten items (Pallant, 2011, p. 85). Dall'Oglio et al. (2010), for instance, argue that an alpha coefficient of 0.5 is acceptable with short scales. As such, it is not unreasonable, in this case, to be more lenient when it comes to the question of removing scales.

3.5.2 Mean inter-item correlations

Most of the variables show acceptable mean inter-item correlations. However, the coefficients for dedication, absorption, and extraversion are higher than what most literature recommends. Briggs and Cheek (1986) recommend that mean inter-item correlation of a scale should be between 0.15 and 0.50. A mean inter-item correlation below 0.15 suggests that the items of a given scale are not related to each other well enough to measure one single construct. A mean inter-item correlation above 0.50 suggests that the items are strongly related to each other, to such an extent that they are repetitive and redundant. The correlation means between the items which measure dedication, absorption, and extraversion are above the latter threshold. Inspecting the correlation matrix between the items of each of these scales gives an indication as to whether some items are too semantically similar to one another. For extraversion, the two items with the strongest correlation ($r = 0.63$) are "I am talkative" and "I tend to be quiet". With the latter question being reverse coded, these two questions are effectively the same. For absorption, the two items with the strongest correlation ($r = 0.72$) are "I am immersed in my work" and "I get carried away when I'm working". While these statements are seemingly similar, there are slight differences in their semantics. The former statement has to do with focus. Being immersed means to involve oneself deeply in an activity. The latter statement, on the other hand, has to do with self-control. To get carried away means to become overly excited to the point where one takes things too far. Last, despite a few high correlations between the items measuring dedication, none of the items are semantically similar to the point of being repetitive. The items and their Norwegian translation which was used are in the appendix A.

3.5.3 Item trimming

Item trimming is a stepwise elimination procedure in which one sees if the coefficient alpha of a scale increases considerably when removing items. When this is the case, it indicates that the item removed is unsuitable and does not contribute to the measurement of the same construct as the other items on the scale. Three items showed improvements in alpha coefficients when removing items, namely emotional stability, dedication and absorption. The emotional stability scale showed improvements when removing the statement "I am depressed, blue", and the absorption scale showed improvements when removing the statement "It is difficult to detach myself from my job". However, removing these items yielded only slight increases in internal consistencies. The coefficient alpha of the emotional stability and absorption scale increased by 0.003 and 0.012 respectively. These increases were deemed negligible and did not warrant exclusion of the items in question. The dedication scale, on the other hand, showed a considerable increase in internal consistency when removing the statement "To me, my job is challenging". The coefficient alpha increased by 0.160, from 0.646 to 0.806. Although the internal consistency of the scale was already at an acceptable level, such a considerable increase when removing the item indicates that it does not measure the same construct as the other items on the scale. In other words, when the respondents were asked to state whether they often or rarely felt a certain way at work, their responses to "To me, my job is challenging" were generally different from what their response were to the other items measuring dedication. As such, the item was excluded from further analyses, decreasing the number of items in the dedication scale from five to four.

Lack of semantic equivalence across languages may be the reason for why this particular item did not measure dedication well. It is likely that the item does not convey the same meaning in Norwegian as it does in other languages. Dedication has to do with feeling a sense of significance from one's work through perceiving it as meaningful, inspiring and challenging (Schaufeli & Bakker, 2004, p. 6). Although the statement "To me, my job is challenging" can have negative connotations, it can also be perceived as a positive statement which refers to finding one's job tasks meaningful and stimulating by requiring good use of one's abilities. This is likely to be the intended meaning, as it is in line with Schaufeli and Bakker's (2004) conceptualization of dedication. In Norwegian, however, the statement is mostly perceived as negative, in the sense that one finds one's job difficult, bothersome, or a hassle. In Norwegian, the item is translated to "For meg er jobben en utfordring". Although "en utfordring" is seemingly the closest direct translation there is for "a challenge", it is likely that it does not cover the intended meaning adequately because of its negative connotation.

3.5.4 External reliability

The research design is externally reliable. Preparing the survey, recruiting schools and analysing the data is straightforward, which allows for accurate and relatively easy reproducibility. There are few if any ways to inadvertently deviate from the research design to such an extent that it considerably affects the reproducibility of the study. The fact that the principals could choose to inform the teachers of the study in whichever way they wanted is perhaps the least externally reliable design decision. For instance, one cannot know whether the principals were positive to the study and encouraged the teachers to answer or not. However, since the principals knew nothing more than what was already informed of in the survey, this should not affect reproducibility considerably.

A common vulnerability of survey studies is the chance of single respondents answering multiple times, skewing the results in the direction of their responses. However, a feature in Questback prevents the respondents from being able to answer again from the same computer. Unless respondents went out of their way to answer multiple times from different computers, which is unlikely, this is not a concern.

3.6 Ethical considerations

Since participation was voluntary and the participants remained anonymous, there were few ethical concerns. Those who participated in the study gave consent by completing the survey. In addition, a feature in Questback called *hidden identity* was used, ensuring that the respondents' IP-addresses were not tracked or saved. No question or combination of questions could reveal the identity of the respondents. To ensure this, the demographic questions were particularly important. One way to protect the respondents' identities was to not require them to give their *exact* age and years of work experience. Instead, they responded in ranges, e.g. "between 22 and 34 years old" and "11 to 19 years of work experience". The data from the survey was kept in two places: Questback's secure hosting facilities, protected by well tested security frameworks, and my own password-protected personal computer. The data was not to be shared with anyone other than my supervisor and other pertinent internal staff at Western Norway University of Applied Sciences. To *share*, in this context, did not mean sending a copy of the collected data to their computer, but rather working together with it using my personal computer. After the research project was finished, the data was deleted from Questback, but were still retained on my personal computer indefinitely. In addition, the email correspondence between myself and the principals of the selected schools were deleted. According to the guidelines of The Norwegian Centre for Research Data (NSD), the ethical measures taken were satisfactory to the extent that reporting the project was unneeded (see to appendix C).

4.0 References

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5.0 Cover letter

Dear Sage Publishing

I am pleased to submit an original research article entitled “Work engagement and its relationship with personality traits among teachers at the secondary level in Norway” by Ervin Hoti (lead author) and Göran Söderlund (corresponding author) for consideration in the Journal of Social Psychological and Personality Science.

As the title suggests, the study examines the relationship between personality and work engagement among teachers, in a Norwegian context. The findings of the study suggest that personality plays a small yet notable part in predicting work engagement among teachers. Further, the results indicate that, among the *Big Five* personality dimensions, emotional stability is the strongest predictor of work engagement.

We think that the research article is suitable for publishing in this journal because its topic is in line with the journal’s scope. That is, it contributes to the understanding of social and personality psychology. Several researchers have noted that previous studies’ findings on personality’s relationship with work engagement is both scarce and inconsistent (Akhtar, Boustani, Tsivrikos, & Chamorro-Premuzic, 2015, p. 46; Langelaan, Bakker, van Doornen, & Schaufeli, 2006, p. 523; Mostert & Rothmann, 2006, p. 482; Mróz & Kaleta, 2016, p. 770). The findings of our research add to the discussion and body of research on the topic. Furthermore, we suggest how future studies should move forward. More specifically, we suggest that future researchers should investigate the *moderation effects* of personality on work engagement.

The research article has not been published and is not under consideration for publication in any other journals. We have no conflicts of interest to disclose.

Thank you for considering our contribution.

Sincerely,

Ervin Hoti
Student, Western Norway University of Applied Sciences
Master of Teaching and Learning

Göran Söderlund
Professor, Western Norway University of Applied Sciences
Department of Pedagogy, Religion and Social Studies

References:

- Langelaan, S., Bakker, A. B., van Doornen, L. J. P., & Schaufeli, W. B. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences, 40*(3), 521–532.
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6.0 Submission guidelines

Submissions to the Journal of Social Psychological and Personality Science may not exceed 5 000 words. The word count includes the main body, abstract, acknowledgements and any additional notes. References, tables, table notes, figures, and figure captions are not included in the total word count. Tables and figures should be embedded in the manuscript upon submission, not appended at the end of the manuscript. The abstract may not exceed 150 words. Four to five keywords that suits the topic of the study must be included. Reference and style guidelines should be in accordance with the sixth edition of the Publication Manual of the American Psychological Association (APA 6th).

7.0 Article version of the thesis

Abstract

The current study examines the relationship between work engagement and personality among teachers at the secondary level in Norway. The Utrecht Work Engagement Scale (UWES) and the Big Five Inventory-20 (BFI-20) were used to assess the work engagement and personality traits of 112 teachers. Results of hierarchical multiple regressions indicate that personality plays a small yet notable part in predicting work engagement among teachers ($R^2 = 0.24, p < 0.01$). Further, the results indicate that emotional stability is the best predictor of work engagement. Of all five personality traits, emotional stability had the greatest effect on three out of four of the outcome variables, namely work engagement ($\beta = 0.24, p < 0.05$), vigour ($\beta = 0.35, p < 0.01$), and dedication ($\beta = 0.30, p < 0.01$). Conscientiousness, agreeableness, and extraversion were also found to be significantly related, but only to certain subscales of work engagement.

Keywords: personality, work engagement, teachers, big five, individual differences

1.0 Introduction

In 2001, Richard Ingersoll (2001) wrote, “Few educational problems have received more attention in recent times than the failure to ensure that elementary and secondary classrooms are all staffed with qualified teachers” (p. 1). Today, the problem of teacher attrition and turnover still persists in countries all over the world (Clandinin et al., 2015; den Brok, Wubbels, & van Tartwijk, 2017; Lindqvist, Nordäng, & Carlsson, 2014; Liu & Onwuegbuzie, 2012; Plunkett & Dyson, 2013; Sutcher, Darling-Hammond, & Carver-Thomas, 2016). These issues have been attributed to burnout, low job satisfaction, organizational and occupational commitment, and low work engagement (Bakker, Schaufeli, & Hakanen, 2006; Klassen & Chiu, 2011). Norway—the country in which the current study was conducted—has not managed to escape these problems. Statistics Norway notes that 30% of qualified teachers do not occupy teaching positions. In addition, they forecast a shortage of 4 700 qualified teachers by year 2040 (Fredriksen, 2018).

Looking away from the problem of teacher attrition and turnover, however, burnout and low work engagement among teachers constitute a problem for other reasons. Teachers who experience burnout and low engagement with work have been found to be less sympathetic toward their students, have a lower tolerance for disruptions in the classroom, and are more likely to experience problems with both occupational and personal wellbeing and health (Bakker et al., 2006; Farber & Miller, 1981; Fernet, Guay, Senécal, & Austin, 2012; Küçükoğlu, 2014). Moreover, work engagement has been linked to teachers’ organisational commitment, performance, and effectiveness (Bakker & Bal, 2010; Bakker et al., 2006), which, in turn, are associated with higher student achievement (Darling-Hammond & Youngs, 2007; Joffres & Haughey, 2001; Wright, Horn, & Sanders, 1997). Factors which may not only negatively impact teachers’ health and wellbeing, but also jeopardize students’ wellbeing, quality of learning, and personal growth create a basis for research on work engagement among teachers (Hoti, 2018, p. 1).

Naturally, most studies attempting to explain low engagement and satisfaction with work among teachers have examined contextual factors such as salary, discipline problems in the classroom, lack of administrative support, workload, bureaucracy, and the profession’s societal status (Burke, Greenglass, & Schwarzer, 1996; Chan, 1998; Farber, 1984; Hoti, 2018; Pithers, 1995; Travers & Cooper, 1997). While many of these studies have found such factors to be related to teachers’ occupational stress, few have investigated the effects of individual differences such as *personality*.

Research on personality’s relationship with work engagement is scarce, as noted by Langelaan, Bakker, van Doornen, and Schaufeli (2006, p. 523). Findings of other studies vary, considerably so, in

both the strength of the association between variables, and which personality traits are significantly related to work engagement (Akhtar, Boustani, Tsivrikos, & Chamorro-Premuzic, 2015; Langelaan et al., 2006; Mróz & Kaleta, 2016; Woods & Sofat, 2013; Zaidi, Wajid, Zaidi, & Zaidi, 2013). However, despite these inconsistencies, closer examination seemingly indicates that low work engagement might be related to low emotional stability and high extraversion. This is supported by several studies on personality's relationship with *burnout*—work engagement's negative antipode—which indicate that high extraversion and low emotional stability are related to burnout (Burisch, 2002; Cano-Garcia, Padilla-Muñoz, & Carrasco-Ortiz, 2005; de Vries & van Heck, 2002; Langelaan et al., 2006; Mills & Huebner, 1998; Zellars, Hochwarter, Perrewé, Hoffman, & Ford, 2004).

The current study takes an individual differences perspective on work engagement among teachers, in a Norwegian context. By examining personality's predictive capabilities on teachers' work engagement using survey data, it posits that basic personality characteristics can help us understand why some teachers are more prone to low engagement with work than others. The research question is twofold:

- (1) *How large of a role do personality traits play in predicting teachers' work engagement?*
- (2) *Which personality trait(s) are the best predictors of teachers' work engagement?*

It should be explicitly stated that the current study does not posit that individual differences such as personality characteristics are the *main causes* of low work engagement and high turnover rates among teachers. The main causes are likely to be, as research referenced above indicates, a series of contextual variables related to the teaching profession. Rather, it posits that personality can explain why certain people are more *prone* to low work engagement, and why certain people experience lower work engagement than others despite working in the same environment.

2.0 Theoretical framework

2.1 Work engagement

The most widely used definition of work engagement is the one established by Schaufeli, Salanova, Bakker, and González-Romá (2002). They defined work engagement as a “positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption” (p. 74). Those who are high in vigour are energetic and mentally resilient when working. In addition, they have a strong willingness to invest effort in their work and are persistent in difficult situations. Those who are high in dedication can be characterized as those who derive a considerable sense of significance from one's work and find it meaningful. These people feel enthusiastic, proud, and are inspired by their

work. Last, absorption refers to how immersed one is in one's work. Those who are high in absorption are concentrated and happily engrossed in their work to such a degree that they feel time passes quickly and they forget everything else around them. These people find it difficult to detach themselves from work tasks which they are committed to and engaged in (Schaufeli & Bakker, 2004b, pp. 5–6).

Several studies support the factorial validity of the construct (Hakanen, 2002; Hallberg & Schaufeli, 2006; Nerstad, Richardsen, & Martinussen, 2010; Panthee, Shimazu, & Kawakami, 2014; Seppälä et al., 2009; Storm & Rothmann, 2003; Xanthopoulou, Bakker, Kantas, & Demerouti, 2012; Yi-Wen & Yi-Qun, 2005). Using Schaufeli and Bakker's (2004b; Schaufeli et al., 2002) measure of work engagement, the *Utrecht work engagement scale*, researchers have, through confirmatory factor analyses, confirmed that the theorized three-factor structure fits well with the data of various samples from different countries.

2.2 Personality and the five-factor model

The most widely used framework to describe personality is *the five-factor model*, also known as *the Big Five* (Goldberg, 1981). The model posits that personality, at the broadest level of abstraction, consists of the following five broad factors: openness/openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability (or its negative antipode, neuroticism) (Srivastava & John, 1999, p. 105).

Openness refers to a person's tendency to be curious and play with abstract ideas. In addition, it also encompasses a person's preference for new experiences as opposed to strict routines and a conventional lifestyle. Across studies, openness has been found to be either insignificant or a weak predictor of work engagement (Inceoglu & Warr, 2011; Kim, Shin, & Swanger, 2009), as well as work performance (Barrick, Mount, & Judge, 2001; Griffin & Hesketh, 2004) and burnout (Alarcon, Eschleman, & Bowling, 2009; Piedmont, 1993).

Conscientiousness includes a broad range of traits that refer to a person's tendency to be self-controlled, responsible to others, hardworking, diligent, orderly, and rule-abiding (Roberts, Jackson, Fayard, Edmonds, & Meints, 2009). These traits are reflected in the factor's previous labels, such as dependability, task interest, will to achieve, impulse control, and work (Srivastava & John, 1999, p. 111). Several studies have found conscientiousness to be a significant predictor of work engagement. (Akhtar et al., 2015; Bakker, Demerouti, & Ten Brummelhuis, 2012; Kim et al., 2009; Mostert & Rothmann, 2006; Mróz & Kaleta, 2016).

Extraversion is associated with positive emotionality, sociability, and high activity levels. Extraverted individuals tend to be outspoken, domineering, and assertive (Srivastava & John, 1999, p. 111). Normally, they seek the company of others for stimulation. Kim, Shin, and Swanger (2009) note that it makes sense, theoretically, for extraversion to have a positive relationship with work engagement because both concepts share the components of high energy and positive emotionality (p. 98). The findings of some studies support the claim (Akhtar et al., 2015; Langelaan et al., 2006; Mostert & Rothmann, 2006).

Those who are high in agreeableness are compassionate, empathic, trustful and cooperative (Srivastava & John, 1999, p. 121). Those who are low in agreeableness are often competitive and challenging, as they disregard others' feelings to a larger degree. Agreeableness can as such be seen as a "continuum from compassion to antagonism" (McCrae & Costa, 1985, p. 2). While some have found agreeableness to be weakly related to work engagement (Akhtar et al., 2015; Kim et al., 2009), others have found it to be positively related to occupational health (Cano-Garcia et al., 2005; Mills & Huebner, 1998; Zellars, Perrewé, & Hochwarter, 2000).

Emotional stability (or its negative antipode, neuroticism) generally refers to the degree to which a person experiences negative emotions. Those who are high in emotional stability are, naturally, more emotionally stable in that they to a lesser extent experience feelings such as anxiety, nervousness, fear, anger, and stress (Srivastava & John, 1999, pp. 110, 113, 121). Neurotic individuals, who are low in emotional stability, react more strongly to stressors and tend to feel helpless in the face of difficulties. They are more self-conscious, have difficulties controlling their impulses, and struggle to inhibit cravings and delay gratification (Costa & McCrae, 1985, p. 21). Emotional stability has been found to be positively related to work engagement (Langelaan et al., 2006; Mostert & Rothmann, 2006; Mróz & Kaleta, 2016; Woods & Sofat, 2013). Moreover, burnout literature, which is much more extensive, suggest that low emotional stability "is the core characteristic of burnout" (Alarcon et al., 2009; Burisch, 2002; Cano-Garcia et al., 2005; de Vries & van Heck, 2002; Langelaan et al., 2006, p. 521; Mills & Huebner, 1998; Zellars et al., 2004).

3.0 Method

To examine personality's relationship with work engagement and which personality trait(s) are the best predictors, a quantitative approach using survey data was used to create hierarchical regression models and a correlation matrix. Data was collected through online surveys completed by teachers at the secondary level.

3.1 Measures

Personality was measured using The Big Five Inventory-20 (BFI-20). The BFI-20 is based on John, Donahue, and Kentle's (1991) *Big Five Inventory*, which consists of 44 items. Using a Norwegian version of the 44-item instrument, Engvik and Clausen (2011) developed a shorter version consisting of 20 items, hence the name BFI-20. The Big Five Inventory (1991) and, consequently, the BFI-20 are based on the five-factor model of personality. The BFI-20 consists of four items for each factor. The items are in the form of statements, e.g. "I tend to be quiet" or "I have few artistic interests". When answering, respondents state whether the statements apply to them or not on a Likert-type scale ranging from one to seven. According to Engvik and Clausen (2011), the short Norwegian personality instrument shows adequate levels of psychometric quality, including acceptable internal consistencies, test-retest reliability, and predictive validity.

Work engagement was measured with the Utrecht work engagement scale (UWES). UWES is a 17-item questionnaire developed by Schaufeli and Bakker (2004b). It measures work engagement as a construct composed of three dimensions, namely vigour (six items), dedication (five items), and absorption (six items). The items are in the form of statements, e.g. "I get carried away when I'm working" or "At my job, I feel strong and vigorous". When answering, the respondents state how often they feel that way about their work on a Likert-type scale ranging from zero (never) to six (every day). The UWES has shown good reliability and factorial validity (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004b; Schaufeli, Bakker, & Salanova, 2006; Seppälä et al., 2009), and studies from a wide variety of cultures and occupations strongly support its cross-sample validity (Hakanen, 2002; Nerstad et al., 2010; Panthee et al., 2014; Storm & Rothmann, 2003; Xanthopoulou et al., 2012; Yi-Wen & Yi-Qun, 2005).

3.2 The survey

The online survey was created in Questback and consisted of four parts. The first part was an introductory page which informed the participants of the study. The respondents were fully aware of the study's research aims and what the survey was assessing; they knew that the purpose of the survey was to assess their personality and work engagement, and that the data would be used to examine the relationship between these. The second part of the survey included questions to gather demographical information, namely gender, age, years of work experience, and educational background. The third and fourth part included the questions from the BFI-20 and the UWES, to assess the teachers' personality traits and engagement with work.

3.3 Recruitment and sample

Traditional state schools were randomly picked from a Wikipedia page ('Ungdomsskoler i Norge', 2017) listing all secondary schools in Norway. Traditional, in this context, meant any non-private school which did not use specific pedagogical approaches, like Waldorf or Montessori pedagogy, or whose ethos was particularly grounded in religious views. The final sample consisted of 112 teachers, with a response rate of 29.46%. Table 1 below shows the frequency distribution of the demographics of the sample.

Table 1. Frequency distribution of demographics among teachers at the secondary level

Demographics	N	%
Gender		
Female	89	79.5%
Male	22	19.6%
Age		
22 – 34	22	19.6%
35 – 44	36	32.1%
45 – 54	33	29.5%
55 – 64	19	17.0%
65+	2	1.8%
Work experience		
Less than a year	4	3.6%
1 – 5	19	17.0%
6 – 10	19	17.0%
11 – 19	39	34.8%
20+	31	27.7%
Educational background		
Lacking appropriate formal teacher education	2	1.8%
2 – 3 years, bachelor's degree	2	1.8%
4 years, bachelor's degree	19	17.0%
5+ years, bachelor's degree	57	50.9%
5 years, master's degree	4	3.6%
6+ years, master's degree	28	25.0%

Note. One respondent chose not to disclose their gender. The numbers under educational background refers to years of higher education. The plus sign means "at least" (e.g., "6+ years" means "at least six years").

3.4 Reliability of measurements

Internal consistencies and mean inter-item correlations are presented in table 2 below. Internal consistencies are acceptable, especially with such few items per scale. Item trimming was performed on the dedication scale. Specifically, removing the statement *“To me, my job is challenging”* increased the coefficient alpha by 0.160, indicating that the item did not measure the same construct as the other items on the scale. As such, the item was excluded from further analyses, decreasing the number of items in the dedication scale from five to four.

Table 2. Reliability coefficients of research variables

Scales and subscales	Number of items	Cronbach's alpha	Mean inter-item correlation
Work engagement	16	.922	.450
Vigour	6	.846	.493
Dedication	4	.806	.521
Absorption	6	.834	.524
Personality traits			
Extraversion	4	.838	.568
Conscientiousness	4	.648	.334
Openness	4	.715	.421
Agreeableness	4	.563	.270
Emotional stability	4	.690	.429

Note. The work engagement scale is comprised of every item in the vigour, dedication and absorption scales.

4.0 Results

Table 3 shows the means and standard deviations of work engagement and personality variables, as well as the correlations between these. The teachers in the sample were highly engaged with work, as indicated by a mean of 5.20. All but one of the five personality traits had a statistically significant linear relationship with work engagement, namely openness. Further, openness also had no statistically significant relationship with any of the subscales which make up work engagement. The strength and direction of the other, significant, associations between work engagement and personality traits, namely extraversion, conscientiousness, agreeableness, and emotional stability, were all moderate and positive. Each of these personality traits were significantly related to nearly all, if not all, of the subscales of work engagement. The only non-significant linear relationships were between emotional stability and absorption, and extraversion and dedication.

Table 3. Descriptive statistics and bivariate correlations

	M	SD	1	2	3	4	5	6	7	8
1. Work Engagement	5.20	1.17								
2. Vigour	5.60	0.86	.89**							
3. Dedication	4.72	1.07	.85**	.63**						
4. Absorption	5.87	0.71	.91**	.72**	.66**					
5. Extraversion	5.06	1.08	.29**	.30**	.13	.32**				
6. Conscientiousness	4.92	0.91	.31**	.27**	.25**	.33**	.18			
7. Openness	5.03	0.74	.14	.08	.18	.11	.03	-.20*		
8. Agreeableness	4.47	0.98	.38**	.31**	.38**	.34**	.29**	.45**	.17	
9. Emotional Stability	4.79	0.78	.26**	.38**	.27**	.09	.20*	.03	.03	.07

Note. * $p < 0.05$; ** $p < 0.01$

4.1 Hierarchical multiple regressions

Four two-step hierarchical multiple regressions were conducted. The dependent variable for the first regression was work engagement as a whole, while the dependent variable for the other three were vigour, dedication, and absorption, respectively. Demographic variables were entered in step one as control variables, while personality trait variables were included in step two.

4.1.1 Work engagement and personality

Table 4 shows the results of the hierarchical multiple regression of predictors of work engagement as a whole. First, the control variables accounted for 7.7% of the variance in work engagement, however, this contribution was insignificant ($R^2 = 0.077$, $p > 0.05$). More notably, still, is that gender was a significant predictor of work engagement, favouring women ($\beta = 0.27$, $p < 0.01$). Second, when the personality variables were entered in the second step, emotional stability came out as the only significant predictor ($\beta = 0.24$, $p < 0.05$). Last, the model at stage two was significant at the 0.01 level, and personality accounted for 23.9% of the variance in work engagement.

Table 4. Hierarchical multiple regression of predictors of work engagement

Predictors	Variable	β	t	R ²	Adj. R ²	ΔR^2	F
Step 1				.077	.039	.077	2.02 ⁺
Demographic factors	Age	.16	1.19				
	Gender ^a	.27	2.63**				
	Job title	.06	0.61				
	Work experience	-.05	-0.39				
Step 2				.316	.249	.239	4.72**
Personality traits	Extraversion	.15	1.51				
	Conscientiousness	.19	1.84 ⁺				
	Openness	.12	1.27				
	Agreeableness	.19	1.85 ⁺				
	Emotional Stability	.24	2.60*				

Note. ⁺ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$

^a Gender: Male = 1, Female = 2

4.1.2 Vigour and personality

The results of the second hierarchical multiple regression are presented in table 5. It shows the regression of predictors of vigour. In step one, none of the control variables showed to have a significant effect on vigour. In addition, the control variables' contribution was, similar to the previous regression, insignificant ($R^2 = 0.064$, $p > 0.05$). When the personality trait variables were entered in the second step, emotional stability showed to be the only significant predictor of vigour ($\beta = 0.35$, $p < 0.01$). Finally, the model at stage two was significant at the 0.01 level, and the five personality traits accounted for 23.9% of the total variance in vigour.

Table 5. Hierarchical multiple regression of predictors of vigour

Predictors	Variable	β	t	R ²	Adj. R ²	ΔR^2	F
Step 1				.064	.026	.064	1.70
Demographic factors	Age	.24	1.83 ⁺				
	Gender ^a	.20	1.95 ⁺				
	Job title	.06	0.59				
	Work experience	-.10	-0.78				
Step 2				.321	.256	.257	4.98**
Personality traits	Extraversion	.15	1.54				
	Conscientiousness	.16	1.57				
	Openness	.06	0.66				
	Agreeableness	.14	1.37				
	Emotional Stability	.35	3.92**				

Note. ⁺ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$

^a Gender: Male = 1, Female = 2

4.1.3 Dedication and personality

The results of the third hierarchical multiple regression are presented in table 6. It shows the regression of predictors of dedication. In step one, gender showed to have a significant effect on dedication, favouring women ($\beta = 0.21, p < 0.05$). The total variance contribution of the control variables, however, was insignificant ($R^2 = 0.047, p > 0.05$). When the personality trait variables were entered in the next step, emotional stability ($\beta = 0.39, p < 0.01$) and agreeableness ($\beta = 0.28, p < 0.01$) showed to be significant predictors of dedication. Last, the five personality traits accounted for 24% of the total variance in dedication, and the contribution was significant at the 0.01 level.

Table 6. Hierarchical multiple regression of predictors of dedication

Predictors	Variable	β	t	R ²	Adj. R ²	ΔR^2	F
Step 1				.047	.009	.047	1.25
Demographic factors	Age	.10	0.75				
	Gender ^a	.21	2.07*				
	Job title	.07	0.68				
	Work experience	-.05	-0.40				
Step 2				.287	.221	.240	4.34**
Personality traits	Extraversion	-.04	-0.39				
	Conscientiousness	.13	1.20				
	Openness	.15	1.57				
	Agreeableness	.28	2.70**				
	Emotional Stability	.30	3.25**				

Note. ⁺ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$

^a Gender: Male = 1, Female = 2

4.1.4 Absorption and personality

The results of the fourth hierarchical multiple regression are presented in table 7. It shows the regression of predictors of absorption. In step one, gender showed to have a significant effect on absorption, favouring women ($\beta = 0.29, p < 0.01$). The control variables' contribution was, again, insignificant ($R^2 = 0.047, p > 0.05$). When the personality trait variables were entered in the second step, extraversion ($\beta = 0.24, p < 0.05$) and conscientiousness ($\beta = 0.22, p < 0.05$) showed to be significant predictors of absorption. Last, the five personality traits accounted for 18.7% of the total variance in absorption, and the contribution was significant at the 0.01 level.

Table 7. Hierarchical multiple regression of predictors of absorption

Predictors	Variable	Standardized Beta	t	R ²	Adj. R ²	ΔR ²	F
Step 1				.083	.046	.083	2.27 ⁺
Demographic factors	Age	.07	0.52				
	Gender ^a	.29	2.95**				
	Job title	.04	0.35				
	Work experience	-.01	-0.10				
Step 2				.270	.202	.187	3.95**
Personality traits	Extraversion	.24	2.40*				
	Conscientiousness	.22	2.04*				
	Openness	.11	1.16				
	Agreeableness	.14	1.35				
	Emotional Stability	.06	0.60				

Note. ⁺ p < 0.10; * p < 0.05; ** p < 0.01

^a Gender: Male = 1, Female = 2

5.0 Discussion

The current study sought to investigate the relationship between personality and teachers' engagement with work. The research questions were:

- (1) *How large of a role do personality traits play in predicting teachers' work engagement?*
- (2) *Which personality trait(s) are the best predictors of teachers' work engagement?*

In regard to the first question, the results suggest, first of all, that personality traits are valid predictors of work engagement. The personality variables' contribution was significant in all four hierarchical multiple regressions at the 0.01 level. Furthermore, the coefficients of determination suggest that personality plays a small, yet notable part in predicting teachers' work engagement, as shown by personality accounting for 18.7% to 25.7% of the total variance in the work engagement scales. Lower values were expected, given the presumably large number of variables that might affect a broad concept such as work engagement.

Regarding the second question, the correlation matrix gave some initial implications as to which personality traits were related to work engagement in teachers—or were not. Firstly, openness did not seem to be related, seeing as it was the only personality trait which had no significant relationships with work engagement or its underlying factors. The results of the regressions were the same; openness did not have a significant effect on work engagement in any of the four regressions.

This is consistent with other research. Openness has been found to be a weak predictor of both work engagement (Inceoglu & Warr, 2011; Kim et al., 2009) and work performance (Barrick et al., 2001; Griffin & Hesketh, 2004). Griffin and Hesketh (2004) note that openness may only be relevant to certain occupational groups, such as those characterized by novelty, unconventionality, or complexity (p. 243). This is a particularly plausible explanation for why openness is not relevant in the context of teaching—a profession in which the teacher is, to some extent, the face of *conformity*. A considerable part of a teachers' job is to discipline and instruct students as to what one should and should not do in a classroom environment. Carrying out discipline to those who do not conform is an example of how much the school as an organization values conformity. A second explanation is that openness is, according to McCrae and Costa (1997), one of the broadest personality traits (p. 828). It is possible that the underlying structure of openness measured by the items in the BFI-20 capture openness too broadly to see the associations it might have with work engagement.

The other four personality traits correlated significantly with both work engagement and its underlying factors in the correlation matrix. Naturally, however, the results of the hierarchical multiple regressions were different because (1) demographic factors were controlled for, (2) intercorrelations were accounted for, and (3) the personality variables competed for variance. The hierarchical regressions of predictors of both work engagement and vigour showed that emotional stability was the only personality trait which was significantly related. In addition, emotional stability was significantly related to dedication. The relationship was positive in all three cases. The results suggest that, among the five personality traits, emotional stability is the best predictor of work engagement among teachers: it is significantly related to work engagement as a whole, as well as two of its underlying factors, namely vigour and dedication. Moreover, the standardized coefficients in each of the regressions in which these were the dependent variable show that emotional stability had the largest effect relative to the other personality traits.

This finding is consistent with other researchers'. Higher emotional stability has been found to be related to both lower risk of burnout (Alarcon et al., 2009; Burisch, 2002; Cano-Garcia et al., 2005; de Vries & van Heck, 2002; Langelaan et al., 2006; Mills & Huebner, 1998; Zellars et al., 2004) and higher levels of work engagement (Langelaan et al., 2006; Mostert & Rothmann, 2006; Mróz & Kaleta, 2016; Woods & Sofat, 2013). Theoretically, it makes sense for a trait associated with anxiety, fearfulness, low self-esteem, and negative emotionality to be associated with work engagement. Research has shown that low emotional stability is associated with increased severity of perceived stress (Leger, Charles, Turiano, & Almeida, 2016; Suls, 2001; Tong et al., 2006). As such, low emotional stability may be a vulnerability factor among teachers in that it makes them more sensitive to stressors—

which in turn affects their engagement with work. What is more, low emotional stability has been associated with stronger emotional reactions and ineffective coping strategies when faced with stressful situations (Bouchard, 2003; Gunthert, Cohen, & Armeli, 1999; Patrick & Hayden, 1999), such as distancing oneself from problems, avoidance, and wishful thinking. Ineffective coping strategies may lead to feelings of bad performance and lack of personal accomplishment, which, in turn, may lead to lower work engagement.

Other personality traits were also related to subscales of work engagement. For instance, agreeableness was found to be significantly related to dedication, and the direction of the beta coefficient indicates that agreeable teachers tend experience feelings of dedication. Looking at previous studies, there does not seem to be a consensus on the effect agreeableness might have on workers' engagement or risks of burnout. Some have found agreeableness to either be insignificant or weakly related (Akhtar et al., 2015; Kim et al., 2009), while others have found it to be significantly related and impact occupational health considerably (Cano-Garcia et al., 2005; Mills & Huebner, 1998; Zellars et al., 2000). This may be due to the samples of the different studies, consisting of various occupational groups. Cano-García et al. (2005) investigated personality and contextual variables in *teacher* burnout, specifically. They found that agreeableness was significantly related and emphasize that high agreeableness works as a protective factor, while low agreeableness is a vulnerability to burnout (p. 929). As such, agreeableness may, like remarked with openness, only be relevant to certain occupational groups. Teaching is, above all, a "human profession", and thus it seems reasonable to maintain that teachers who are agreeable (read: sympathetic, kind, affectionate, helpful, trusting, friendly, unselfish, good-natured, gentle, and warm) experience feelings of dedication in a work environment in which most tasks largely involve interacting with students.

Extraversion was expected to have a stronger relationship with work engagement, seeing as it has been found to be negatively related to burnout and fatigue (Anvari, Kalali, & Gholipour, 2013; Cano-Garcia et al., 2005; de Vries & van Heck, 2002; Mills & Huebner, 1998; Zellars et al., 2004). Moreover, Langelaan et al. (2006) found that work engagement is characterized by low neuroticism in combination with high extraversion. It seemed reasonable to assume that a trait associated with sociability, positive emotionality, and high activity levels would be positively related to work engagement among teachers. If not, then it was at least expected to be significantly and positively associated with vigour, which is characterized by high levels of energy. However, the results showed that extraversion was only significantly and positively related to absorption, indicating that extraverted teachers are more inclined to become happily engrossed and experience feelings of

immersion while working. This is an interesting finding, and one that has not been replicated in similar studies. One possible explanation may be that teaching largely includes tasks which involve interpersonal dealings, or “people skills”, and that it is easier for extraverted teachers to experience feelings of immersion (e.g. fully focused, intrinsically motivated) because they thrive in such work environments.

Conscientiousness was also significantly and positively related to absorption, indicating that conscientious teachers experience feelings of immersion and intense focus more often than less conscientious teachers. Seeing as other researchers have found conscientiousness to be significantly associated with both work engagement (Bakker et al., 2012; Inceoglu & Warr, 2011; Kim et al., 2009; Mostert & Rothmann, 2006), and job performance (Barrick & Mount, 1991; Hertz & Donovan, 2000; Mount & Barrick, 1998), it is not surprising to find that the results here indicate a link between the two. Kim, Shin, and Swanger (2009) note that conscientiousness may affect work engagement through internal motivational processes. Specifically, they posit that work engagement and conscientiousness are related because conscientious individuals have high achievement-striving motivation and a common characteristic of vigour, dedication, and absorption is an internal drive to achieve certain goals (e.g. completing work tasks, getting a promotion) (p. 98).

6.0 Conclusion

The present study investigated personality’s relationship with work engagement among teachers. The results indicate that personality plays a small yet notable part in predicting work engagement among teachers. Emotional stability, agreeableness, extraversion, and conscientiousness were all found to be significantly related to either work engagement as a whole, or at least one of its three sub-factors, namely vigour, dedication, or absorption. Hierarchical multiple regressions suggest that, among the Big Five personality traits, emotional stability is the best predictor. It was significant in three of the four regressions which were conducted and had the largest effect size relative to the other personality traits in these. This finding is particularly consistent with a wide variety of occupational groups, both in terms of work engagement (Kim et al., 2009; Langelaan et al., 2006; Mostert & Rothmann, 2006; Woods & Sofat, 2013) and burnout (Alarcon et al., 2009; Burisch, 2002; Cano-Garcia et al., 2005; de Vries & van Heck, 2002; Langelaan et al., 2006; Mills & Huebner, 1998; Zellars et al., 2004). The findings add to the discussion and body of research on personality’s relationship with work engagement as well as other occupational health psychology concepts—primarily among teachers, but also seemingly other occupational groups.

6.1 Limitations and future research

Although this study gives further insight into personality's relationship with teachers' work engagement, its findings should be considered within the methodological limitations. First, the sample size is relatively small. This limits the ability to generalize. In addition, the sample is not entirely representative in terms of gender. Ideally, when compared to a national sample of 15 521 teachers in which two-thirds were women, the study's sample should have consisted of twice as many men. Second, although the response rate (29.46%) was similar to what is common in mail surveys, it was still low. Thus, the sample may not be representative if specific types of teachers responded. For instance, it may be that those who were not particularly engaged with work did not respond because they saw the voluntary survey as an additional burden. Last, and perhaps most importantly, the findings of the study do not account for contextual variables. As remarked in the introduction, several researchers have emphasized the influence of work environment, job demands, and resources when it comes to turnover intentions and burnout among teachers (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001; Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Bakker, 2004a). Studies which have covered other occupational groups emphasize that work environment, job demands, and resources are the main determinants of burnout. Beta coefficients and coefficients of determination might have been lower if these were controlled for. Indeed, one should be wary in making claims which imply causal relationships between work engagement and personality traits for this very reason.

Future research should take this last point into consideration. The findings of those studies which have looked at contextual variables within the teaching profession, in combination with those that have found personality to account for a small to moderate percentage of the total variance in work engagement, indicate that contextual variables play the larger role. It seems more likely that certain personality traits function as either (1) vulnerability factors, increasing the likelihood of experiencing feelings of low work engagement, (2) protective factors, decreasing such likelihood, or (3) factors which enforce or foster higher work engagement. In other words, future research should include contextual variables in its scope and explore personality's moderating effects.

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8.0 Appendices

8.1 Appendix A: Utrecht Work Engagement Scale (UWES)

Scale	English	Norwegian
Vigour		
S1	At my work, I feel bursting with energy.	Jeg er full av energi i arbeidet mitt.
S2	At my job, I feel strong and vigorous.	Jeg føler meg sterk og energisk på jobben.
S3	When I get up in the morning, I feel like going to work.	Når jeg står opp om morgenen ser jeg frem til å gå på jobben.
S4	I can continue working for very long periods at a time.	På jobben kan jeg holde på med å arbeide i lange perioder av gangen.
S5	At my job, I am very resilient, mentally.	Jeg føler meg psykisk sterk på jobben.
S6	At my work I always persevere, even when things do not go well.	Jeg er alltid utholdende på jobb, selv når ting ikke går bra.
Dedication		
S1	I find the work that I do full of meaning and purpose.	Jeg synes at arbeidet mitt har både mål og mening.
S2	I am enthusiastic about my job.	Jeg er entusiastisk i jobben min.
S3	My job inspires me.	Jeg blir inspirert av jobben min.
S4	I am proud of the work that I do.	Jeg er stolt av det arbeidet jeg gjør.
S5	To me, my job is challenging.	For meg er jobben en utfordring.
Absorption		
S1	Time flies when I'm working.	Tiden bare flyr når jeg arbeider.
S2	When I am working, I forget everything else around me.	Når jeg arbeidet glemmer jeg alt annet rundt meg.
S3	I feel happy when I am working intensely.	Jeg føler meg glad når jeg er fordypet i arbeidet mitt.
S4	I am immersed in my work.	Jeg er oppslukt av arbeidet mitt.
S5	I get carried away when I'm working.	Jeg blir fullstendig revet med av arbeidet mitt.
S6	It is difficult to detach myself from my job.	Det er vanskelig for meg å løsrive meg fra jobben.

8.2 Appendix B: Big Five Inventory-20 (BFI-20)

Scale	English	Norwegian
Extraversion		
S1	I am talkative	Jeg er pratsom
S2	I tend to be quiet	Jeg har en tendens til å være stille av meg
S3	I am outgoing, sociable	Jeg er utadvendt og sosial
S4	I am sometimes shy, inhibited	Jeg kan være sky og hemmet
Conscientiousness		
S1	I do a thorough job	Jeg gjør en grundig jobb
S2	I tend to be disorganized	Jeg har en tendens til å ha lite orden på tilværelsen
S3	I make plans and follow through with them	Jeg legger planer og følger dem opp
S4	I can be somewhat careless	Jeg kan være uforsiktig
Openness		
S1	I am original, come up with new ideas.	Jeg er original, kommer med nye ideer
S2	I have an active imagination	Jeg har livlig fantasi
S3	I like to reflect, play with ideas	Jeg liker å spekulere, leke med ideer
S4	I have few artistic interests	Jeg har få kunstneriske interesser
Agreeableness		
S1	I am helpful and unselfish with others	Jeg er hjelpsom og uegoistisk i forhold til andre
S2	I can be cold and aloof	Jeg kan være kald og fjern
S3	I am sometimes rude to others	Jeg kan noen ganger være uhøflig
S4	I am considerate and kind to almost everyone	Jeg er hensynsfull og vennlig overfor de fleste mennesker
Emotional stability		
S1	I am depressed, blue	Jeg er deprimert, nedtrykt
S2	I am relaxed, handle stress well	Jeg er avslappet, takler stress godt
S3	I worry a lot	Jeg bekymrer meg mye
S4	I get nervous easily	Jeg blir lett nervøs

8.3 Appendix C: Confirmation from the Norwegian Centre for Research Data (NSD)

NSD Personvern

29.11.2018 08:47

Det innsendte meldeskjemaet med referansekode 476062 er nå vurdert av NSD.

Følgende vurdering er gitt:

Det er vår vurdering at det ikke skal behandles direkte eller indirekte opplysninger som kan identifisere enkeltpersoner i dette prosjektet, så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet den 29.11.18 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Prosjektet trenger derfor ikke en vurdering fra NSD.

HVA MÅ DU GJØRE DERSOM DU LIKEVEL SKAL BEHANDLE PERSONOPPLYSNINGER?

Dersom prosjektopplegget endres og det likevel blir aktuelt å behandle personopplysninger må du melde dette til NSD ved å oppdatere meldeskjemaet. Vent på svar før du setter i gang med behandlingen av personopplysninger.

VI AVSLUTTER OPPFØLGING AV PROSJEKTET

Siden prosjektet ikke behandler personopplysninger avslutter vi all videre oppfølging.

Lykke til med prosjektet!

Kontaktperson hos NSD: Silje Fjelberg Opsvik

Tlf. Personverntjenester: 55 58 21 17 (tast 1)