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A little more motivation, a little more action: The role of motivational work climate in moderating the relationship between neuroticism and work addiction in Norwegian employees

Bachelor's thesis in Psychology
Supervisor: Emmanuel Aboagye
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Preface

This bachelor thesis is part of a larger international research project examining micro-, meso-, and macro-level factors in relation to healthy workplaces. The framework of the bachelor project was conceptualized by the project supervisors and listed as: “Exploring the landscape of psychosocial work factors in healthy workplaces.”. Within this framework, students were free to construct their own thesis. The survey for this study was supplied by the international research facility in Poland, and students were tasked with gathering 20 participants each. Additionally, 400 participants were collected by a third-party data collection firm. The project supervisors and the research institute in Poland obtained the necessary ethical approval concerning data storage and research conduction on human subjects.

For this thesis, I designed my own research question, hypothesis, and statistical analysis approach, which was approved by my supervisor. I received guidance on selecting the most appropriate work and organizational psychology theory for my research question, as this was mandatory to include in explaining the relationship between the chosen variables. I independently conducted the analysis and chose the literature included. The data set was coded by a master's student, who also provided specific assistance in constructing some of the variables used in my analysis.

Throughout the writing process, I received formal feedback on two separate occasions; my supervisor read through my drafts, providing constructive comments on the structure, content, and language. Additionally, I've received advice via e-mail.

I'm grateful to my fellow students for the discussions, feedback, general support, and camaraderie shared over the years. Thanks to my supervisor for valuable insight and for being available when I was in doubt. I also would like to thank my stepmother for her invaluable guidance in the field of psychology and academic writing.

Abstract

Work addiction, characterized by excessive and compulsive working, despite harmful psychological, physiological, and social consequences for the individual, has, throughout many years, been a source of interest in psychological research. Different dimensions of personality and motivation are often identified as antecedents of healthy and unhealthy work-related outcomes; namely, neuroticism is found to have a predictive effect on work addiction. This cross-sectional study, comprising 624 Norwegian employees, proceeds to expand upon the existing findings by investigating the moderating effect of perceived motivational work climate on the relationship between neuroticism and work addiction within the framework of the JD-R model. Work addiction was measured using the Bergen Work Addiction Scale (BWAS), and motivational work climate was measured using the Motivational Climate at Work Questionnaire (MCWQ). The results from hierarchical multiple linear regression analysis suggested that neuroticism significantly predicted work addiction, as well as suggesting a buffering effect of mastery climate on this relationship. Contrary to the preliminary hypothesis, performance climate did not show any significant moderation effect. These results suggest that a mastery climate could prevent the development of work addiction and mitigate the predisposition high scorers in neuroticism have in developing work addiction.

Sammendrag

Arbeidsavhengighet, karakterisert ved tvangsmessig overarbeid til tross for psykologisk, fysiologisk og sosial skade, har lenge vært et interesseområde innenfor psykologisk forskning. Forskjellige dimensjoner av personlighet og motivasjon er identifisert som forløpere til ulike negative og positive arbeidsrelaterte utfall, der neurotisisme har utkrystallisert seg som en signifikant prediktor for arbeidsavhengighet. Denne studien, bestående av 624 norske arbeidstakere, forsøker å utvide forståelsen av tidligere funn, ved å undersøke moderasjonseffekten av oppfattet motiverende arbeidsklima (fra eng. motivational work climate) på forholdet mellom neurotisisme og arbeidsavhengighet, innenfor rammeverket av JD-R modellen. Arbeidsavhengighet og motivasjonsklima var målt ved bruk av henholdsvis Bergen Work Addiciton Scale (BWAS) og Motivational Climate at Work Questionnaire (MCWQ). En hierarkisk multippel regresjonsanalyse viste at neurotisisme predikerte arbeidsavhengighet, og at mestringsklima (fra eng. mastery climate) kan dempe denne effekten. Prestasjonsklima (fra eng. performance climate) viste ingen signifikant moderasjonseffekt. Disse resultatene indikerer at mestringsklima kan forebygge utviklingen av arbeidsavhengighet hos arbeidstakere, samtidig minske den predisponerte effekten individer med høy skåre i neurotisisme har for å utvikle arbeidsavhengighet.

A little more motivation, a little more action: The role of motivational work climate in moderating the relationship between neuroticism and work addiction in Norwegian employees

For most adults, work is an important part of life. It comprises a significant part of our wake hours, shaping our livelihood, identity, and social standing; certain fortunate individuals even find purpose and meaning in life through their professional endeavors (Ward & King, 2017). In recent years, especially during and after the COVID-19 pandemic, technological advancements have blurred the boundaries between work and personal life, evolving the nature of our work and presenting new challenges in maintaining a healthy work-life balance (Conroy et al., 2021; Grant et al., 2013). As a society, we are mandated to protect our employees from work-related illness. Therefore, research is needed to examine which factors that contribute to psychological work-related illness and which factors that prevent it.

Work addiction, characterized by excessive dedication to work at the expense of other life domains, has emerged as a prevalent phenomenon associated with various harmful physical and psychological outcomes (Balducci et al., 2021; Griffiths, 2005). Understanding the individual factors that contribute to work addiction is crucial for mitigating its adverse effects on employee well-being and health (Shimazu et al., 2015). Furthermore, this raises the issue of whether certain people are more prone to developing work addiction than others. Research has shown that personal dispositions, including personality traits such as neuroticism, may predispose individuals to work addiction (Morkevičiūtė et al., 2021). While neuroticism has been linked to the development of work addiction in multiple studies, the strength and consistency of this relationship remain debated (Kun et al., 2021). How work addiction affects individuals is also explored; for instance, a longitudinal study by Wettstein et al. (2022) found higher levels of self-reported vital exhaustion among individuals with

elevated neuroticism scores who also exhibited signs of workaholism, suggesting that neuroticism may amplify the negative effects of work addiction.

Personality is defined as individual differences in behavior, thoughts, and feelings that are stable across situations and time (Costa & McCrae, 1999; Specht et al., 2014; Specht et al., 2011). It is theorized that certain situations can activate certain traits in the individual (Tett & Burnett, 2003). Furthermore, given situations can be interpreted differently in relation to individual differences. Hence, situation and trait are closely linked in understanding behavior. Additionally, it is argued that 40% of personality is hereditarily conditioned (Vukasović & Bratko, 2015). Therefore, since personality can hardly be changed at will, there should be an interest in examining how external factors can moderate the relationship between personality and work-related illness.

Defining work addiction

In the last decades, much research has been dedicated to the discussion around the nature and definition of workaholism (Clark et al., 2016; Griffiths et al., 2018; Morkevičiūtė & Endriulaitienė, 2023a; Ng et al., 2007; Schaufeli et al., 2008). The term workaholism was first coined by Oates (1971) and defined as uncontrollable compulsiveness to work. Workaholism and work addiction are, in later years, constructs often used interchangeably in psychological research. At the same time, there seem to be differences concerning what researchers attribute to the concept of workaholism. More specifically, workaholism could be closely associated with other addictive behaviors and dispositions, characterized by six dimensions (salience, mood modification, tolerance, withdrawal, conflict, and relapse (Griffiths, 2005)), or it could be defined as a behavioral pattern, characterized by aspects of compulsive and excessive work (Morkevičiūtė & Endriulaitienė, 2023a). In this paper, the former approach will be used.

A work addict, in comparison to substance abusers or people suffering from other behavioral addictions, is in a position where they are expected to indulge in their addiction for multiple hours a day. In addition, this activity is also regarded by society as productive and desirable (Griffiths et al., 2018; Kim, 2019); however, research has revealed that excessive work by work addicts does not lead to increased productivity or elevated performance (Shimazu et al., 2015). Therefore, the position of a work addict could be more complex than that of other addicts. Researchers have shifted toward highlighting the negative outcomes of work addiction, both organizational and individual (Atroszko et al., 2020; Balducci et al., 2021; Ng et al., 2007). Excessive work has desirable consequences, such as economic stability and high regard from peers and supervisors. However, a defining feature of work addiction is the negative aspects, which are harmful to the individual (Griffiths, 2005). This can take the form of psychological and psychosocial harm, namely stress, burnout, depression, and strain on the addict's family and loved ones, but also physiological harm, most commonly cardiovascular illness (Griffiths et al., 2018). Consequently, work addiction in this article will be defined as excessive and compulsive work, where this behavior is harmful to the individual.

Motivational work climate

Motivation itself is not a clear-cut measurement, and multiple theories explore the anatomy of human motivation, e.g., self-determination theory, regulatory focus theory, and achievement goal theory (Taris et al., 2020; van Beek et al., 2011; van Beek et al., 2014). When investigating motivational climate, we are interested in what the individual perceives, based on external factors, as correct behaviors for achieving success and avoiding failure (Nerstad et al., 2013). Motivational work climate is based on achievement goal theory, which describes two approaches to motivation and goal achievement: performance goal orientation and mastery goal orientation. These approaches lend their characteristics to the motivational

work climates (Conroy et al., 2009; Dweck, 1986; Senko et al., 2011). Performance climate is associated with commonly negative aspects of work-life function, such as less effort, ineffective work strategies, extrinsic motivation, elevated emotional strain, work pressure, and decreased robustness when faced with difficulties (Nerstad et al., 2013). In contrast, mastery climate is associated with intrinsic interest, employee well-being, increased effort, and more robustness in completing complex tasks and hard work (Nerstad et al., 2018; Nerstad et al., 2013; Senko et al., 2011). Although these aspects of the different motivational climates are commonly applied in sports and education studies, they could be adapted to work-life situations. As these fields of human interaction and function have shared elements of achievement, competition, peer comparison, and judgment, it can be suggested that the same forces of motivation apply similarly in all fields (Nerstad et al., 2018).

Difference aspects of motivation are previously linked with work addiction. Although not thoroughly covered in this article, it's hard to omit self-determination theory when exploring motivational aspects of human function. This theory encompasses intrinsic motivation, which involves the drive towards mastery, assimilation, and other positive aspects of human nature, and extrinsic motivation, which is driven by external factors such as approval, recognition, and rewards (Ryan & Deci, 2000). Mastery climate is associated with higher degrees of intrinsic motivation, which in turn relates to other desirable outcomes. Contrarily, performance climate has been found to have inconclusive associations with extrinsic motivation (Sarrazin et al., 2002; Standage et al., 2003). Following, the relationship between extrinsic and intrinsic motivation and work addiction is explored in multiple studies. Ng et al. propose a theoretical framework consisting of, among other things, three dimensions of antecedents of work addiction: dispositions, sociocultural experiences, and behavioral reinforcements (Ng et al., 2007). Under the sociocultural component, peer competition at work is highlighted, as well as the multiple aspects of behavioral reinforcements regarding

how effort and production are rewarded and acknowledged. Consequently, this theory highlights the competitive work climate as a precursor for developing work addiction. Empirically, this theory is supported in a study investigating the mediating effect of extrinsic and intrinsic work motivation, where the competitive organizational climate was found to have both a direct positive effect on work addiction and an indirect effect through extrinsic work motivation (Morkevičiūtė & Endriulaitienė, 2023b). Additionally, intrinsic motivation had a negative effect on the reported work addiction of employees. This connection is disputed, as meta-studies have shown no significant effect of intrinsic or extrinsic motivation on work addiction. (Morkevičiūtė et al., 2021); however, some caution must be asserted when interpreting these results as there were only a few studies per estimate. Despite some inconclusive findings, generally, intrinsic motivation is found to be negatively associated with work addiction, and extrinsic motivation positively associated with work addiction.

While previous research has investigated the direct influence of motivation on work addiction (Morkevičiūtė & Endriulaitienė, 2023b; Morkevičiūtė et al., 2021), the association between motivational work climate and work addiction is less covered. As a result, the role of the motivational work climate in moderating the relationship between neuroticism and work addiction remains largely unstudied (Morkevičiūtė & Endriulaitienė, 2023b). Consequently, this paper will investigate how the motivational work climate moderates the relationship between neuroticism and work addiction.

Theory and hypothesis development

Neuroticism

Neuroticism is a personality trait and is defined as “(...) an enduring tendency or disposition to experience negative emotional states.” (Widiger, 2009, p. 129). Specifically, high scores in neuroticism are associated with feelings of anxiety and depression, vulnerability to stress, and inclinations to interpret ordinary situations as threatening.

Additionally, high scores in neuroticism are coherent with higher degrees of shyness and self-consciousness than the average person (Widiger, 2009).

Personality traits are often a source of interest when researching work addiction (Morkevičiūtė et al., 2021). Neuroticism is found to have a significant causal relationship with work addiction, though the strength and consistency of this relationship are debated (An et al., 2021; Balducci et al., 2021; Kun et al., 2021; Morkevičiūtė et al., 2021). A cross-sectional study conducted on self-employed entrepreneurs found a large positive linear effect of neuroticism on work addiction (Therthani et al., 2022). A meta-analysis showed that neuroticism had a strong connection to work addiction, compared with other personality traits and other external factors (Morkevičiūtė et al., 2021). Other meta-analytic findings suggest no significant connection between neuroticism and work addiction (Kun et al., 2021). These contradictory findings could be attributed to the multiple approaches in defining and measuring work addiction, where different instruments yield different associations with neuroticism.

Generally, studies have shown associations between neuroticism and work addiction. A study on Norwegian employees found that neuroticism had a respectively small and medium positive relationship with work involvement and drive (Andreassen et al., 2010); these were classified as components of workaholism. The drive was defined as the feeling of obligation to work even when it was not enjoyable, as well as the tendency to experience anxiety and stress when not being able to work (Andreassen et al., 2010). This is in line with Griffith's idea that mood modification plays an important role as a component of addiction (Griffiths, 2005). Consequently, work involvement can be related to work addiction when work is habitually used to moderate negative emotions (Bereznowski et al., 2023; Kim, 2019). Therefore, since neuroticism is related to the prevalence of negative emotions in the individual (Widiger, 2009), one could argue that individuals with higher scores in neuroticism

may be more vulnerable to developing a work addiction. Taking existing findings into consideration, we hypothesize that *H1: neuroticism is positively related to work addiction.*

The application of the JD-R model

In this study, the JD-R model is applied to understand how neuroticism and motivational work climate interact and influence work addiction. JD-R model is a theoretical framework addressing well-being at work and work-related illness (Bakker & Demerouti, 2007; Bakker & Demerouti, 2017; Demerouti et al., 2001). This theory emphasizes how job demands and job resources interact to influence work-related outcomes. Job demands contribute to more strain and effort and, by extension, are associated with higher physiological and psychological costs leading to work-related illness (Demerouti et al., 2001). Job resources are aspects of work that promote learning, development, and personal growth, reduce the strain of job demands, and facilitate work achievements, leading to employee well-being (Demerouti et al., 2001). Specifically, different demands and resources can moderate the effects of the other on work-related outcomes. The model also encapsulates how multiple job demands and resources manipulate each other, where, for example, more job resources can facilitate other job resources (Bakker & Demerouti, 2017). Mastery climate, which emphasizes personal growth, learning, and intrinsic motivation and also being associated with higher degrees of employee well-being, is in this study understood as a job resource and is believed to mitigate the adverse effect of job demands and work addiction (Nerstad et al., 2018; Nerstad et al., 2013). Performance climate, which is associated with elevated work pressure and emotional strain, is in this study understood as a job demand, as it could increase stress and lead to unwanted work-related outcomes (Bakker & Demerouti, 2017; Nerstad et al., 2018).

A proposition included in the revision of this model is regarding the resources and demands of the personal character. It is theorized that positive personal dispositions can

contribute to well-being at work and hinder work-related illness. Likewise, less desirable aspects of personality, such as higher scores in neuroticism, can have opposite effects (Bakker & Demerouti, 2017; Swider & Zimmerman, 2010). Additionally, there is a duality regarding job demands, whereas some demands could be regarded as challenging or hindering. Challenging demands is conceptualizing the idea that certain demands can motivate employees (Bakker & Demerouti, 2017). Whether demands fall in either of their subcategories could depend on the level of available resources for the employee, suggesting that higher scores in neuroticism could make demands hindering instead of challenging. Furthermore, researchers have argued that employees could be stimulated positively when job demands and resources are high, leading to more motivation and engagement in their work (Bakker et al., 2007).

Although the JD-R model is often used in the context of burnout and work engagement, studies have found that it could be implemented in work addiction research, where work addiction is predicted by job demands and resources (Langseth-Eide, 2019; Molino et al., 2016). Studies have also found that, in addition to its direct relation to work addiction, neuroticism has an indirect effect through perceived job demands on work addiction (An et al., 2021). Therefore, applying the framework of the JD-R model, and based on the notion that resources can buffer the effect of demands on undesirable work outcomes, we hypothesize that *H2: Mastery climate will buffer the relationship between neuroticism and work addiction*. Additionally, since JD-R model states that multiple demands facilitate undesirable work outcomes, we hypothesize that *H3: Performance climate will augment the relationship between neuroticism and work addiction*.

Method

Study design

A cross-sectional quantitative survey design was employed to explore the moderating effect of motivational work climate on the relationship between neuroticism and work addiction. Given the time and financial constraints, this method was chosen for its practicality and ability to accommodate a large sample. This research focuses on the broader implications of the findings, making this design a suitable approach (Meltzoff et al., 2018). The study is formatted according to the APA 7th guidelines (American Psychological Association, 2020).

Participants

The group of interest for this study was Norwegian employees. Undergraduate psychology students at NTNU Trondheim were tasked with recruiting 400 participants and managed to recruit a total of 347 participants. Additionally, a third-party data collection firm (Bilendi) was commissioned by the research institute located in Poland to gather an additional 400 participants. Specific inclusion criteria were established, requiring participants to be over the age of 18, Norwegian, and employed workers. Additionally, the third-party company established an inclusion criterion of either 50% or 100% employment. For the purpose of this specific thesis, additional inclusion criteria were applied, including a requirement for participants to work between 20 and 60 hours per week, have at least one year of tenure with their current employer, and possess a minimum of one year of overall work experience. An upper cut-off value on participant work hours was established referring to the "Working Environment Act" (2005), which states a maximum of 40 working hours per week. The limit was raised to 60 hours per week since workers in managerial positions and employees working two or more separate jobs can exceed the limit set for total work hours per week. Furthermore, two attention-check questions were integrated into the questionnaire. Consequently, some participants were removed from the data set, either by not meeting the

inclusion criteria or not passing the attention checks, resulting in a total of $N = 624$ participants in the study.

The final selection of participants was mostly female (57 %). The median age was 40-49 years old. The selection was relatively highly educated, with 70 % having a university degree (81 % when including vocational school), a 53% increase compared to the general Norwegian population (Statistics Norway, 2023). 34 % of the participants reported having some type of managerial position. In accordance with the cut-off criteria for the BWAS, to be described subsequently, 15% were classified as work addicts. This exceeds what was previously documented in the Norwegian population, where a study reported a prevalence of 8.3 % for work addiction (Andreassen et al., 2014). Employment in the private or public sector was evenly split in the sample, with 50% working in the private sector.

Data collection

The data for this study was collected from January to February 2024. The approaches used in collecting the data were convenience and snowball sampling, which was executed through various channels (e.g., social media, email, and word of mouth). The third-party company conducted an open invitation collection strategy, allowing any willing member of their panel to complete the survey. Both the student-collected sample and the third-party collected sample were required to complete an online questionnaire provided by the research center in Poland, and the two pools of participants were later merged into one collective data set.

Participants had to give informed consent prior to responding to the survey. All respondents were supplied with an informational sheet communicating the purpose of the research, information about the storage of personal data, and the researcher's contact information. The participants were incentivized to complete the survey with the promise of receiving immediate feedback on their individual results from the survey instruments.

Measurements

Work addiction

In accessing work addiction, the Bergen Work Addiction Scale (BWAS) was utilized. This instrument comprises seven items based on seven dimensions related to general addiction (salience, mood modification, tolerance, withdrawal, conflict, relapse, and problems) (Andreassen et al., 2012; Griffiths, 2005). The questions constructed ask participants to answer how often they indulge in certain addictive behaviors. For example, participants were asked: “How often during the last year have you: - thought about how you could free up more time to work? (salience); - deprioritized hobbies, leisure activities, and exercise because of your work? (conflict)” (Andreassen et al., 2012, p. 269). Each item was measured on a 5-point Likert scale, ranging from 1 (never) to 5 (always). Additionally, nine self-developed items were added to the instrument. The questions were translated into Norwegian. Each participant received a mean score for all the times (16 in total). Participants also were sorted either as work addicts or not work addicts based on a cut-off value, where answering 4 (often) or 5 (always) on four or more of the seven original BWAS items resulted in classification as a word addict (Andreassen et al., 2012). In validating this instrument, an internal validity of $\alpha = .84$ and $\alpha = .80$ was found over two separate studies (Andreassen et al., 2012). The seven original items had an internal validity of $\alpha = .87$. When including the self-developed items, Cronbach’s alpha increased to $\alpha = .95$. Removing any items would reduce internal validity, thereby indicating the rationale for retaining all items within the instrument.

Motivational work climate

Eight items from the Motivational Climate at Work Questionnaire (MCWQ) were used to assess the perceived motivational work climate (Nerstad et al., 2013), with four items each measuring the mastery climate and the performance climate factors. Each item was measured on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The

questions comprised of statements and asked how much the participant resonated with each given statement (e.g., “In my department/work group, one is encouraged to cooperate and exchange thoughts and ideas mutually.” (mastery climate); “In my department/work group, it is important to achieve better than others.” (performance climate)) (Nerstad et al., 2013, p. 2237). Questions were translated into Norwegian. Internal validity was controlled for both factors; Cronbach’s alfa for mastery was $\alpha = .81$, and $\alpha = .76$ for performance climate.

Neuroticism

Neuroticism was assessed using a section of the Mini International Personality Item Pool (MINI-IPIP). The instrument is a brief assessment tool based on the Big Five personality theory. It comprises four questions per personality trait (extroversion, agreeableness, conscientiousness, neuroticism, intellect/imagination (openness)), resulting in a total of 20 questions (Donnellan et al., 2006). The respondents were asked to rate statements on a Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree), for example: “I get upset easily” or “I have frequent mood swings.”. The questions were translated into Norwegian. The items included in this scale are selected from the International Personality Item Pool - Five Factor Model (IPIP-FFM). Researchers chose items with the highest discrimination scores for each factor. Higher discrimination scores indicate that an item explains the variation in a specific factor while explaining little variation in the remaining factors. This results in a shorter personality assessment tool while conserving sufficient information about the variation in each factor (Donnellan et al., 2006). Cronbach’s alfa for neuroticism was $\alpha = .75$.

Control variables

The regression analysis included three control variables: higher education, gender, and occupational sector. Higher education included participants who reported completing a bachelor's, master's, or PhD, whereas participants who reported completing primary school, secondary school, or vocational school were defined as having no higher education.

Participants with missing values for education were assorted in the latter category.

Participants were asked to identify themselves as either male, female, or other. The occupational sector was either private or public.

Analyses

Firstly, internal consistency was controlled for all included measurements using Cronbach's Alpha, where values over $\alpha = .7$ are considered acceptable (Field, 2018). Subsequently, assumptions for normality were controlled, and satisfactory Skewness and Kurtosis values were observed (Field, 2018). Visual inspection of histograms also revealed an acceptable distribution. Pearson correlation analysis was performed to investigate the relationship between the included variables.

A multiple hierarchical moderation regression analysis was performed to analyze the predictive effect of neuroticism and motivational work climate on work addiction. Hayes' macro process model 2, which includes two moderation variables, was used (Hayes, 2018). Interpretations for effect sizes were set to large ($\beta = 0.5$), medium ($\beta = 0.2$), and small ($\beta < 0.2$) (Fey et al., 2023). The analysis comprised two steps. Model 1 explored the effect of neuroticism and motivational work climate on work addiction, in addition to the moderating effect of work climate on the relationship between neuroticism and work addiction. Model 2 comprises the addition of sociodemographic variables, investigating changes in the estimates when controlling for educational level, gender, and occupational sector. The raw scores for the variables neuroticism, performance climate, and mastery climate were mean-centered prior to the analysis to make it easier to interpret the results. The assumptions for regression analysis were investigated, and satisfactory VIF and tolerance values were observed, suggesting no collinearity. Visual inspection of the standardized residual histogram and Q-Q plot showed an approximately normal distribution of residuals and a good fit for the line, respectively. All statistical analyses were performed using the software JASP.

Ethical considerations

The Ethics Committee of the University of Silesia in Katowice for Research Involving Humans approved the larger international research project from which this study derives. Additionally, the study follows the guidelines for personal data security provided by Sikt.

Results

Table 1 presents the correlations, means, and standard deviations for the variables included in the study. Work addiction shows significant positive linear correlations with neuroticism ($r(622) = .46, p < .001$) and performance climate ($r(622) = .28, p < .001$) and a significant negative linear correlation with mastery climate ($r(622) = -.28, p < .001$). The strongest correlation observed was between work addiction and neuroticism. Notably, mastery climate exhibited negative linear correlations with all other variables.

Table 1: Correlations, means, internal validity, and standard deviations. N = 624

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1. Work Addiction	2.2	0.7	(.95)			
2. Neuroticism	2.6	1.0	.46***	(.75)		
3. Mastery Climate	5.2	1.2	-.28***	-.21***	(.81)	
4. Performance Climate	3.1	1.3	.28***	.10*	-.14***	(.76)

Note: * $p < 0.05$, *** $p < 0.001$; *M* = Mean; *SD* = Standard Deviation; Cronbach's alfa values in correlation matrix diagonal

Multiple hierarchical linear moderation regression analysis was conducted to investigate the predictive effect of neuroticism, mastery climate, and performance climate on work addiction. Model 1 explains 30% of the variance in work addiction ($R^2 = .30, F(5, 618) = 53.63, p < .001$), and the addition of predictors in Model 2 significantly improves the model

fit, which increased the explanatory power to 32% ($R^2 = .32$, $F(8, 615) = 36.91$, $p < .001$) ($\Delta R^2 = .02$, $p < 0.001$).

Controlling for gender, higher education, and occupational sector in Model 2 yielded slight changes in the estimates. Additionally, higher education showed a significant positive association with work addiction ($\beta = 0.11$, $p < .001$), indicating that individuals with higher university degrees tend to exhibit higher levels of work addiction. Sector or gender did not show any significant associations with work addiction. Table 2 presents results from a hierarchical regression analysis predicting work addiction.

Table 2: Results from hierarchical regression analysis predicting work addiction (N = 624).

Variables	b	95% CI		SE b	β	R^2	ΔR^2
		Lower	Upper				
Model 1						.30	.30***
Neuroticism	0.32***	0.27	0.37	0.03	0.41***		
MC	-0.10***	-0.14	-0.05	0.02	-0.15***		
PC	0.12***	0.08	0.16	0.02	0.22***		
MC * Neuroticism	-0.06**	-0.1	-0.02	0.02	-0.09**		
PC * Neuroticism	-0.03	-0.07	0.0	0.02	-0.06		
Model 2						.32	.02***
Neuroticism	0.31***	0.25	0.36	0.03	0.39***		
MC	-0.10***	-0.16	-0.06	0.02	-0.16***		
PC	0.14***	0.1	0.18	0.02	0.25***		
MC * Neuroticism	-0.05*	-0.1	-0.01	0.02	-0.08*		
PC * Neuroticism	-0.03	-0.07	0.01	0.02	-0.05		
Higher education ^a	0.18***	0.07	0.28	0.06	0.11***		
Gender ^b	0.09	-0.02	0.2	0.05	0.06		
Sector ^c	-0.09	-0.19	0.02	0.06	-0.06		

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; ^a1 = yes, 0 = no; ^b1 = female, 0 = male; ^c1 = private,

0 = public; SE = standard error; MC = mastery climate; PC = performance climate

The results from the regression analysis supported *H1*, showing that neuroticism significantly predicted work addiction ($\beta = 0.39, p < .001$). Additionally, mastery climate ($\beta = -0.16, p < .001$) and performance climate ($\beta = 0.25, p < .001$) exhibited significant simple effects on work addiction, where mastery climate had a small negative linear association with work addiction and performance climate had a medium positive linear association with work addiction.

The interaction between mastery climate and neuroticism was significant ($\beta = -0.08, p = 0.022$), suggesting that the relationship between neuroticism and work addiction is moderated by mastery climate. Consequently, support was given to *H2*. However, performance climate showed no significant moderation effect. As such, *H3* was not supported.

Discussion

This study examines how the motivational work climate moderates the association between neuroticism and work addiction in the Norwegian workforce. The analysis revealed some anticipated findings, notably that neuroticism has a moderate positive association with work addiction and that mastery climate buffers this effect. However, the results did not suggest that performance climate augments the effect of neuroticism on work addiction. These findings propose that the motivational climate, to some extent, does moderate the relationship between neuroticism and work addiction.

These results give insight into how external factors of motivation relate to the development of work addiction. Notably, this study highlights the value of assessing both personal dispositions and external influence in relation to work addiction. Prior research has investigated different aspects of motivation and dimensions of personality and how these factors are associated with work addiction (Clark et al., 2016; Morkevičiūtė & Endriulaitienė, 2023b; Ng et al., 2007). This study, however, leads the way in uncovering how the variables interconnect.

Neuroticism as a predictor of work addiction

Firstly, neuroticism was the strongest predictor of work addiction. This finding corroborates the findings of Morkevičiūtė et al. (2021), which suggests that individuals who score higher in neuroticism are more likely to report higher degrees of work addiction. In relation to the JD-R model, one could argue that higher scores in neuroticism act as personal demands, not only having a direct effect on developing work-related illness but also influencing other resources, diminishing their effect of promoting desirable work-related outcomes (Bakker & Demerouti, 2017). Workloads, deadlines, and social comparison can, in the right circumstances, promote engagement in work life, but they can also be demands leading to work addiction. High scorers in neuroticism could be more prone to fall into the latter category, considering that their lack of personal resources shifts the balance, making it harder to face the potential external demands in the workplace (Xanthopoulou et al., 2007). Also, considering that mood modification is a component of addiction, it can be argued that a higher prevalence of negative emotions, to some extent, conditions the development of work addiction (Griffiths, 2005). Therefore, individuals with high scores on neuroticism would be expected to be more susceptible to work addiction.

The moderating effect of mastery climate

The findings indicate a buffering effect of mastery climate on the relationship between neuroticism and work addiction. Additionally, the results suggest that higher degrees of mastery climate are associated with decreased values in work addiction. Based on these findings, one could argue that if an employee perceives the measurement of success at the given workplace as rooted in personal growth for the individual, the employee would be less likely to develop work addiction. Additionally, if the employee is prone to develop work

addiction through high scores in neuroticism, the organizational focus of implementing a mastery climate could be a preventive measure of work addiction.

Mastery climate stimulates intrinsic motivation, although it's externally conditioned; it's how the employee interprets how success is achieved, and failure is avoided in the given workplace (Nerstad et al., 2013). Considering how success is measured in a performance climate relative to a mastery climate, it's evident that success is more readily achievable in a mastery climate. In a mastery climate, every employee can be a high achiever since the measurement for success is how much the employee has grown as an individual. A performance climate only allows some individuals the feeling of success since its defining feature of success is outperforming others. Consequently, one could expect that a mastery climate universally supports positive work-related outcomes and employee well-being. In contrast, a performance climate, while beneficial for some, could be expected to show more varied effects on work addiction.

Understanding the role of performance climate

The results showed no significant augmenting effect of performance climate on the relationship between neuroticism and work addiction. Nevertheless, performance climate had a significantly moderate predictive simple effect on work addiction, and the correlation analysis exhibited a significant positive covariation between work addiction, neuroticism, and performance climate, suggesting a connection between performance climate and the prevalence of work addiction.

The positive effect of extrinsic motivation on work addiction is supported in former research and has been shown to be a stronger predictor than intrinsic motivation (Morkevičiūtė & Endriulaitienė, 2023b). However, other researchers have also found contradictory results. A longitudinal study found that extrinsic motivation did not predict work addiction; rather, work addiction predicted lower levels of intrinsic motivation and higher

levels of intrinsic regulation (Taris et al., 2020), meaning that higher levels of work addiction relate to connecting feelings of self-worth and self-esteem to social approval and external standards (Ryan & Deci, 2000). JD-R theory proposes that demands could be related to positive aspects of work life when combined with sufficient resources (Bakker & Demerouti, 2017). Given this proposition, one could argue that the impact of external demands on the development of work addiction, following a focus on intragroup competition like that of a performance climate, depends on various internal and external factors. These factors, in turn, influence how individuals perceive these demands.

Performance climate builds on Achievement Goal Theory's performance achievement goals and offers a more complex approach to motivation compared to its counterpart, mastery climate. The effect of performance climate on achievement is affected by the individual's perception of his or her own ability. The desire to indulge in challenging tasks depends on the individual's belief that the task will be successfully completed with little effort (Dweck, 1986). Contrarily, when adopting a mastery climate, the focus is on learning and developing skills; ability is regarded as malleable, and individual dispositions will not affect one's willingness to indulge in challenging tasks. Consequently, the moderation effect of performance climate is not as clear-cut as the effect of mastery climate, the latter being generally perceived as unequivocally positive. But for some people with higher self-esteem and belief in their ability, a performance climate would facilitate goal achievement on par with a mastery climate (Conroy et al., 2009; Senko et al., 2011). In this case, however, the association between neuroticism and performance climate was nonsignificant, meaning the results suggest that higher scorers and low scorers in neuroticism are equally affected by the influence of a performance climate in developing work addiction. These results are surprising, considering that scores in neuroticism could relate to the individual belief in his or her own ability (Judge et al., 2002). Therefore, there could be reason to believe that this analysis does

not capture the complete picture of how performance climate moderates the relationship between neuroticism and work addiction, as there are likely confounding variables not accounted for affecting the relationship.

Personal dispositions

Higher scores in neuroticism are characterized by emotional instability, a higher prevalence of anxiety and depressive emotions, and vulnerability to stress. Considering these characteristics, one could argue, in relation to trait activation theory, that individuals who score high in neuroticism actively seek out a work environment that compliments their personality traits (Tett & Burnett, 2003). In that extension, they are more likely to work where the motivational work climate does not emphasize inter-collegiate competition and high production, considering that they are more sensitive to stressors and high work demands. Therefore, potential questions arise about the direction of the effect of these results. Turnover intention has been shown to be positively linked with performance climate, suggesting some level of employee dissatisfaction when working under a performance climate (Nerstad et al., 2013). This lends some support to the notion that employees actively seek out a work environment that suits their personal disposition. In what way neuroticism is related to this tendency is an interesting subject for further research. Consequently, there could be a case where employees with higher scores in neuroticism experience more mastery climate and less performance climate, considering that individuals actively seek the climate that suits their personality.

One study has found that job performance under levels of competition requirements is not predicted by scores in emotional stability (Judge & Zapata, 2015). Consequently, one could argue that high levels of interpersonal competition do not result in more unwanted work-related outcomes based on the individual's score in neuroticism. Rather, job performance for individuals with high scores in emotional stability is significantly related to

dealing with unpleasant and angry people and the requirement of social skills. Therefore, the unexpected results of the moderation effect of performance climate could be explained by the findings that individuals with high scores in neuroticism are not more affected by interpersonal competition than individuals with low scores in neuroticism (Judge & Zapata, 2015).

The results from this study suggest that external demands play a role in unwanted work outcomes. Continuing the ideas from the JD-R theory, the results show that resources are imperative in conditioning a healthy work life and that resources, in the form of a motivational climate, can, to some extent, mitigate the effect of personal demands on the development of work addiction (Bakker & Demerouti, 2017; Bakker et al., 2007). This study proceeded to apply the framework of the JD-R model to the psychological constructs of personality traits, motivational work climate, and work addiction. Considering these findings, it's reason to promote further research in implementing motivational climate and personal dispositions in the JD-R model to broaden our understanding of how this model fits these constructs. Furthermore, there is reason to argue that the commonly given incentive of outperforming one's peers would be a less healthy approach to motivation than focusing on each employee's learning and growth. Consequently, employers should focus on facilitating a mastery climate in their workplace.

Strength, limitations, and further research

This study design was a cross-sectional survey carried out with convenience snowball sampling. This approach is associated with some limitations in the strength of the study's findings. The study's goal is to identify tendencies in the population in which we are interested, the Norwegian workforce, and be able to apply the findings to the greater population by studying a selection of the given population. Therefore, there are implications in generalizing when identifying that our selection is dissimilar to the general Norwegian

workforce. Namely, there are more women than men, and the selection is more highly educated than the general population in Norway. The sample was found to show a higher degree of work addiction than earlier studies have exhibited, though this could be attributed to the difference in inclusion criteria between the studies. Additionally, since the study is cross-sectional, we are not able to determine the direction of effect between the variables included in the study. Although this compromises the generalizability of the findings, these concessions were made due to management economics and time constraints, making the research feasible to complete and granting sufficient respondents.

Other reservations in interpreting the results must also be considered. It's expected that the sample is affected by social-desirability bias and self-selection bias. The former refers to people being inclined to present themselves in a manner desirable to others, including the researchers, due to a feeling of being evaluated (Meltzoff et al., 2018). The latter refers to the phenomenon whereby people who volunteer to participate in studies differentiate from the population in general, resulting in ungeneralizable results (Meltzoff et al., 2018). Additionally, the survey was conducted in Norwegian, excluding members of the Norwegian workforce who are not proficient in Norwegian. Consequently, some caution must be asserted when interpreting and generalizing the results of this study.

Although considering these concessions, this research covers a broad group of the Norwegian workforce, comprising a rich and diverse sample based on the given inclusion criteria. Therefore, we believe that the information resulting from this analysis can be beneficial in understanding how motivational work climate influences the development of work addiction.

Due to the study design, the direction of the effects cannot be determined. Therefore, we suggest conducting longitudinal research on this topic while also including control variables for individual achievement goal orientation, broadening the understanding of

motivational work climates' effect on work-related outcomes. Consequently, we propose that the motivation theory of motivational climate extends beyond sports psychology and suggest exploring how motivational work climate is linked to other aspects of work life.

Conclusion

The findings from this study suggest that motivational climate plays a role in the development and prevention of work addiction. Neuroticism was found to be a moderate predictor of work addiction, and a perceived mastery climate was found to buffer the effect of neuroticism on work addiction. Work addition should not be confused with elevated productivity and performance; rather, its negative consequences are damaging to both employees and organizations. Reflecting on these results, employers should consider the way in which they attribute success in the workplace, as it seems that a focus on personal growth and learning, rather than intragroup competition, is beneficial for employee's well-being and health.

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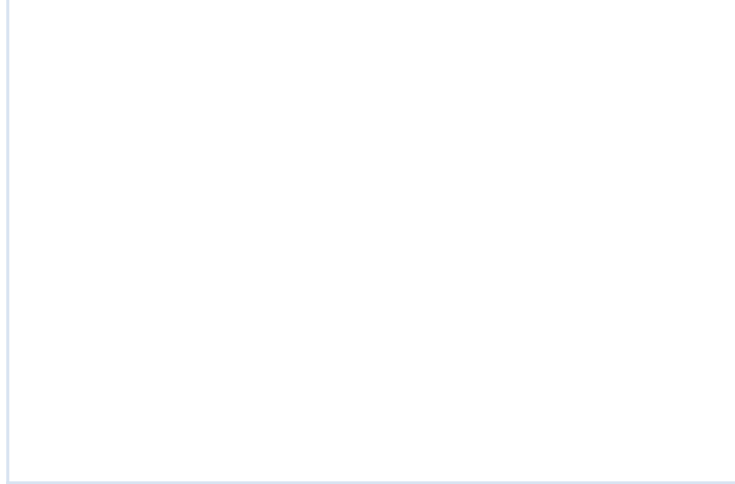
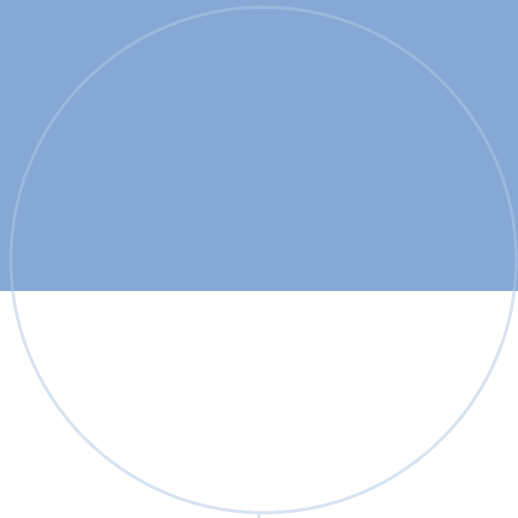
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