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# **The relationship of stress appraisal and personality with work performance**

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## **Abstract**

This study examines the extent to which opportunity appraisal, threat appraisal, neuroticism and extraversion are related to job performance. It utilizes Schaufeli and Bakker's (2004) Job Demand-Resource Model (JD-R model) to position the different variables in relation to each other. Two additional constructs also included in this research – work engagement and burnout – are based on this model. These constructs are measured with the Utrecht Work Engagement Scale (UWES) and the Utrecht Burnout Scale (UBOS-A), respectively. The Big Five Inventory assesses personality, the Individual Work Performance Questionnaire (IWPQ) gauges performance and a new questionnaire is constructed by the author to measure appraisal. Earlier research has indicated that work performance is dependent on the stress that an individual experiences in certain situations. And, stress levels seem to be dependent on the appraisal of a stressor and on individuals' personalities. Therefore, it is argued that, rather than utilise the traditional categorisation of stressors as either hindrances or challenges, appraisals must be operationalized, and predispositions (such as personality) must be considered to explain performance. This study's findings indicate that work engagement, opportunity appraisal and extraversion are related to job performance and mediate the impact on performance. However, burnout, threat appraisal and neuroticism do not seem to have a comparable influence. These results are partially in conflict with the findings of previous research. The contradictions may be due to differences in research settings or to the introduction of a new questionnaire to measure appraisal. Another explanation could be the fact that relationships between two study variables were often found for direct relations and not under consideration of a mediator.

## **Samenvatting**

Het huidige onderzoek richt zich op de relatie tussen opportuniteitsappraisal, gevaren appraisal, neuroticisme en extraversie met werkprestatie. Om de verschillende constructen aan elkaar te relateren werd het Job Demand-Resource Model (JD-R model) van Schaufeli en Bakker (2004) gebruikt. Op basis van dit model zijn twee aanvullende constructen, bevlogenheid en burn-out, in het huidige onderzoek geïncorporeerd. Deze twee constructen worden respectievelijk door de Utrechtse Bevlogenheidsschaal (UBES) en de Utrechtse Burn-out Schaal-Algemeen (UBOS-A) gemeten. Persoonlijkheid wordt met de Big Five Inventory (BFI) en prestatie met de Individuele Werkprestatie Vragenlijst (IWPV) gemeten. Voor het meten van appraisal werd een nieuwe vragenlijst geïntroduceerd. Eerder onderzoek toont aan dat werkprestatie afhankelijk is van de mate van stress die een individu ervaart. Het niveau van stress blijkt op zijn beurt weer afhankelijk te zijn van de taxatie ('appraisal') van de stressor en van de persoonlijkheid. Daarom wordt beargumenteerd dat, in plaats van de traditionele categorisatie van stressoren in beperkingen en uitdagingen, de taxatie en persoonlijkheid moeten worden beschouwd om werkprestatie te verklaren. De resultaten van het huidige onderzoek suggereren dat bevlogenheid, opportuniteitsappraisal en extraversie een mediërend effect en associatie met de uitkomstmaat werkprestatie vertonen. Burn-out, gevaren appraisal en neuroticisme blijken geen vergelijkbare invloed te hebben. Deze resultaten zijn – althans gedeeltelijk – niet in lijn met eerder onderzoek. Dit kan samenhangen met het feit dat een andere onderzoeksopzet is gebruikt of een nieuwe appraisal vragenlijst werd geïntroduceerd of dat correlaties voornamelijk voor partiële associaties tussen constructen werden verwacht en niet onder in acht name van mediatoren.

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## 1. Introduction

Although stress is an increasingly important concern in the organisational sector, the current science does not adequately explain how job stress affects employees. Until recently, research mainly focused on stress in the healthcare sector – and therefore, on the symptoms caused by stress. Researchers paid less attention to applying this knowledge in the industrial sector (Schuler, 1980). Thus, a consensus on the relationship between stress and performance is needed (Jex, 1998 as cited by LePine, Podsakoff & LePine, 2005). Without sufficient knowledge regarding this relationship, the usefulness of stress management activities will remain limited (LePine et al., 2005).

Earlier research focused on the correlation between stress and negative health aspects. Ninety-five per cent of articles published in the *Journal of Occupational Health Psychology* focus on negative consequences of stress, while only five per cent address the positive aspects of stress (Schaufeli & Bakker, 2003). Furthermore, the majority of articles categorise particular situational factors as either contributing to performance or detracting from performance (LePine et al., 2005). Today, research models are more likely to take the positive outcomes of stress into account. For example, the Job-Demand Resource Model (JD-R) expanded in scope, distancing itself from the traditional view of stress as negative. The updated model incorporates the possibility of positive stress outcomes, in the form of work engagement (Schaufeli & Taris, 2013). And, evidence is emerging that individual differences influence how people handle and react to stressors (LePine, et. al, 2005). Furthermore, current research is exploring how situational and individual characteristics affect the stress-performance relationship (Rosen, Chan, Djurdjevic, & Eatough, 2010). These findings imply that individual differences play a key role in the stress-performance relationship.

To account for the finding that work stress negatively influences work performance (Schaufeli & Bakker, 2003; LePine et al., 2005), Schaufeli and Taris (2013) perceived stress as a situation characterized by high work demands. Current research defines stress as an employee's appraisal of: (1) his or her relationship to the environment (stressor) and, (2) the extent to which the stressor taxes or exceeds his or her job resources, thus endangering personal well-being (Lazarus & Folkman, 1984).

This study's goal is to examine how opportunity and threat appraisals influence job performance. It is assumed that employee well-being (i.e. work engagement and burnout)

mediates the appraisal-performance relationship. In addition, this thesis also examines the relationship between personality and employee well-being (i.e. work engagement and burnout), as well as the mediating role played by opportunity and threat appraisals. The thesis also investigates the mediating role of both work engagement and burnout on the relationship between personality and work performance. The JD-R model is used as a conceptual framework.

### **1.1 The Job Demand-Resource Model**

The JD-R model (Schaufeli & Bakker, 2004) is a well-known tool for investigating work stress. Its primary advantage is its heuristic and open character (Schaufeli & Taris, 2013), which makes it well suited for this research project. The model assumes that the work environment provides employees with job resources and job demands, precursors to work engagement and burnout, respectively.

Current research makes only partial use of the JD-R model's framework. Rather, it predominately focuses on job demands, which are defined as, "(...) *organizational aspects of the job that require sustained (...) psychological effort and are therefore associated with certain (...) psychological costs.*" (Demerouti, Bakker, Nachreiner, & Schaufeli 2001, p. 296). These negative effects occur when demands are very high and require extraordinary efforts without the chance for recovery (Schaufeli & Taris, 2013). According to the model, job demands can be placed in the wider context of a *health impairment process*. Excessively high job demands mark the beginning of this process. These provoke a negative psychological state (i.e. burnout), in which the individual lacks energy and only marginally identifies with his or her work (Taris & Schaufeli, 2013). The JD-R model divides burnout into three dimensions, based on the *structural model of burnout* delineated by the Maslach Burnout Inventory (MBI) (Maslach, Jackson & Leiter, 1996, p.36). The first dimension, *exhaustion*, is caused by additional efforts to reach the stipulated job performance. The second dimension, *cynicism*, is caused by a lack of job resources to achieve goals, and cynicism leads to mental distance and failure. Finally, the third dimension, *reduced professional efficiency*, deals with negative self-evaluation and deficiencies of competence (Maslach, Jackson & Leiter, 1997).

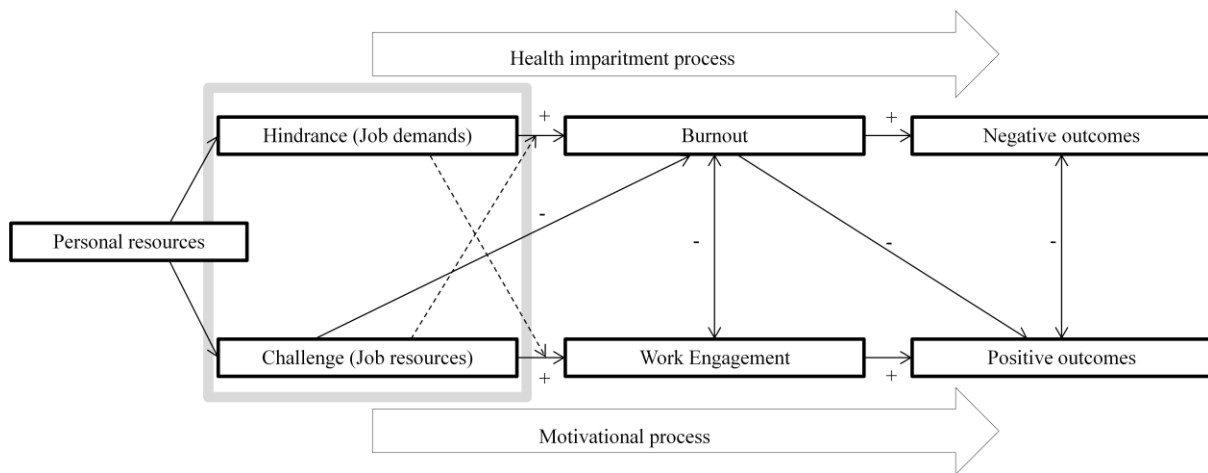
The original JD-R model determined a priori that job demands are inherently negative and that they lead to negative outcomes (e.g. poor performance), while job resources lead to

positive outcomes (e.g. work engagement). Selye's (1982) early research called into question this strict categorisation. He drew a theoretical distinction between *eustress* and *distress*. Eustress is a positive form of stress that produces feelings of challenge and the possibility of achievement. Eustress “(...) *might be considered to be that amount of stress between too much or too little, [thus] an optimal level of stress.*” (Le Fevre, Kolt & Matheny, 2006). In contrast, distress lacks the positive association with motivation (Selye, 1982) and occurs “(...) *when the demands placed on the body [...] exceed its capacity to expend energy in maintaining homeostasis*” (Le Fevre, et al., 2006). Researchers such as McCall, Lombardo, and Morrison (1988) lend support to this distinction. Their work found that stressors are not inherently negative. According to their research, managers do not necessarily experience demanding work situations (e.g. time pressure) as negative. Rather, managers may perceive such demands as rewarding and worth tolerating. This supports Selye’s distinction and the association of a *good* and *bad* stressor with a certain outcome in the form of a feeling.

In order to address these distinctions of stressors Cavanaugh, Boswell, Roehling and Boudreau (2000), as well as LePine (2004), introduced a two-dimensional framework, consisting of *challenges* and *hindrances*, to differentiate among stressors. Within their framework, certain stressors may be perceived as challenges, “(...) *work circumstances [that] produce positive feelings, even though they may be stressful (...)*” (Cavanaugh, et al., 2000, p.66), and as leading to positive work outcomes (LePine et al., 2005). Stressors perceived as hindrances, however, are regarded as “(...) *work circumstances that involve (...) undesirable constraints that interfere with or hinder an individual's ability to achieve valued goals (...)*” (Cavanaugh, et al., 2000, p.77). These categories offered an opportunity to investigate the stress-performance link and to highlight the connection between challenges and hindrances, and a specific kind of performance, respectively.

**Figure 1**

*The Job-Demand Resource model.*



Cavanaugh et al.'s framework suggests that job demands can lead to both negative and positive outcomes (Figure 1). This demands that an additional process included in the JD-R model, the *motivational process*, also be considered. When a job demand is perceived as a challenge, the outcome is work engagement. Work engagement is associated with very high levels of employee satisfaction and work performance. (Schaufeli & Taris, 2013). Work engagement has three dimensions: *vitality* (being energetic, feeling strong and fit, working long hours and having mental resilience), *dedication* (feeling that one's work is reasonable and useful, experiencing work as inspiring or challenging, and feeling proud or enthusiastic) and *absorption* (experiencing a sense of flow in one's work and being unable to separate oneself from work) (Schaufeli & Bakker, 2004, p.25).

The JD-R model envisions work engagement and burnout as precursors to positive and negative outcomes, respectively, regarding attitudes and actions concerning the organization (Schaufeli & Taris, 2013), such as work performance. The current research considers how an individual functions in terms of two performance outcomes: *task performance*, "(...) which is defined as the proficiency with which individuals perform the core substantive or technical task central to his or her job" (Koopmans, Bernaards, Hildebrandt, de Vet & v.d. Beek, 2014), and *contextual performance*, "(...) [which] can be defined as behaviors that support the organizational, social and psychological environment in which the technical core must function" (Koopmans et al., 2014). Furthermore, the model also incorporates the manner in which personal resources influence work stress. These personal resources are the self's



psychological characteristics, which influence an individual's resilience and sense of his or her ability to successfully influence, control and direct the environment (Hobfoll, Johnson, Ennis & Jackson, 2003; Schaufeli & Taris, 2013).

Regardless of the advantages of Cavanaugh et al.'s (2000) framework, typifying job demands as either positive or negative is too restrictive. The primary problem is that the framework categorizes stressors as either positive or negative, when in actuality, the distinction is not so clear cut. Cavanaugh et al. (2000) themselves noted that it was difficult to classify certain stressors as either challenges or hindrances. Further restrictions include the framework's assumption that all individuals interpret particular stressors in the same way (Webster, Beehr & Love, 2011) and its a priori prediction regarding whether a person experiences a stressor as a hindrance or as a challenge, thus eliminating space for individual evaluation (González-Morales & Neves 2015).

To address these limitations, this research introduced an alternative framework that employs appraisal instead of categories. Various studies have suggested that appraisals influence the relationship that challenges and hindrances have with performance (LePine et al., 2005). The evaluation of a stressor seems to partially mediate the stressor-outcome relationship (Webster et al., 2011) and is important to work outcomes (González-Morales & Neves, 2015).

## **1.2 Opportunity Versus Threat Appraisal**

Lazarus and Folkman's (1984) 'transactional theory of stress' provides a suitable framework to examine the influence of appraisal. They define *primary appraisal* as the process in which an employee considers his or her available resources to address a stressor and perform well. This means that, when sufficient resources are available, an individual appraises a stressor as a challenge and as an opportunity for mastery, gain and personal growth. In contrast, if a stressor is evaluated as an obstacle that causes anger or anxiety, an individual appraises it as a threat. Lazarus and Folkman (1984) distinguished among three types of appraisal: (1) *stress appraisal* occurs when a situation is experienced as negative, and harm or loss is anticipated; (2) *irrelevant appraisal* occurs when the given situation does not have an effect on the future (this form of appraisal is not taken into account); and (3) *benign-positive appraisal* occurs when a situation is expected to preserve or enhance personal well-being (p. 32). Particular stressors can be appraised in different manners, implying that they cannot be inherently negative or positive. The use of appraisals makes it possible to

evaluate each job stressor as either an opportunity or a threat. According to Webster et al. (2011) must a questionnaire measure the employees opportunity and threat appraisal simultaneously to determine to which extent he or she experiences a situation as one or the other. Only simultaneous measurement can take into account individuals' varying experience of stressors. Thus, the supposition that a stressor is the same for everyone under certain circumstances is circumvented.

To summarize, studies by Gonzáles-Morales and Neves (2015); LePine et al. (2005); Webster et al. (2011); Lazarus and Folkman (1984) and Selye (1982) indicated that a relationship exists between appraisal and performance. Stress appraisal is regarded as 'negative' to the employee and seems to be linked to appraisals like: harm and loss (Lazarus & Folkman, 1984; Selye, 1982), undesirable constraints (Cavanaugh, et al., 2000) and demands that exceed an employee's capacity (Le Fevre et al., 2006). In contrast, challenge appraisal seems to be connected to: positive feelings (Lazarus & Folkman, 1984; Selye 1982), circumstances that are stressful but that produce positive feelings (Cavanaugh et al., 2000) and a stress levels that are neither too high nor too low (Le Fevre et al., 2006).

These connections do not need to be straightforward. Gonzáles-Morales and Neves (2013), hypothesized that if an individual appraised a situation as one of threatening demands, he or she would consequently experience distress. Distress has cognitive, attentional and affective costs concerning performance. Furthermore, distress can also mediate the relationship between threat appraisal and performance. Distress prevents the employee from taking responsibilities and executing core tasks. In contrast, opportunity appraisal seems to be positively related to affective commitment, which leads to potential growth and career development. Gonzáles-Morales and Neves' (2013) study also indicated that affective commitment has a mediating power and that it therefore enhances performance.

Current research, therefore, takes the role of mediators into account. The JD-R model, which investigates the stress-performance relationship, considers both burnout and work engagement to be influential. In this context, negative feelings generated by threat appraisal are antecedents to the emergence of burnout (Maslach, Jackson & Leiter, 1997). In turn, burnout is associated with negative work performance (LePine et al., 2005; Taris, 2006). In contrast, the positive feelings generated by challenge appraisal are antecedents to work engagement. Work engagement is associated with vitality, dedication and absorption

(Schaufeli & Bakker, 2004) – and therefore, with high work performance (LePine et al., 2005; Christian, Garza & Slaughter, 2011). Hence, it is hypothesized that:

*Burnout mediates the relationship between the appraisal of a stressor as a threat and job performance (H1).<sup>1</sup>*

- a. *Burnout (exhaustion) mediates the relationship between the appraisal of a stressor as a threat and task performance (H1a).*
- b. *Burnout (distance) mediates the relationship between the appraisal of a stressor as a threat and task performance (H1b).*
- c. *Burnout (exhaustion) mediates the relationship between the appraisal of a stressor as a threat and task performance (H1c).*
- d. *Burnout (distance) mediates the relationship between the appraisal of a stressor as a threat and contextual performance (H1d).*

*Work engagement mediates the relationship between the appraisal of a stressor as opportunity and job performance (H2).<sup>2</sup>*

- a. *Work engagement mediates the relationship between the appraisal of a stressor as opportunity (time/ responsibilities) and task performance (H2a).*
- b. *Work engagement mediates the relationship between the appraisal of a stressor as opportunity (possibilities) and task performance (H2b).*
- c. *Work engagement mediates the relationship between the appraisal of a stressor as opportunity (time/ responsibility) and contextual performance (H2c).*
- d. *Work engagement mediates the relationship between the appraisal of a stressor as opportunity (possibilities) and contextual performance (H2d).*

### **1.3 Personality**

Earlier sections highlighted the impact of appraisal (and hence, subjective perceptions) on job performance. The next section addresses the influence of stable factors, such as personality. Previous research has demonstrated that personality traits have the potential to predict appraisals (Hemenover, 2011).

Personality traits are relatively permanent individual characteristics, marked by long-term behavioural tendencies regarding emotional style and response (Warr as cited by Langelaan, Bakker, Doornen & Schaufeli, 2006). According to Costa and McCrae (1992), personality can be divided into five traits, the so-called 'Big Five'. This research examines two of these traits: *neuroticism (N)* and *extraversion (E)*. "*Neuroticism stands for the general tendency to experience distressing emotions such as fear, depression, and frustration, whereas extraversion reflects the disposition towards cheerfulness, sociability, and high activity*" (Costa & McCrae, 1980). These two traits seem to have a strong influence on how an individual appraises a stressor. Mak et al. (2004) found that individuals high on neuroticism appraised academic work stress as more of a threat than those who scored low on this indicator. In contrast, they indicated that high extraversion seemed to be connected to opportunity appraisal. Gallagher (1990) found that extraversion and neuroticism are predictive of opportunity and threat appraisal, due to their related emotional experiences. And, Hemenover (2011) and Mak et al. (2003) ascertained that neuroticism and extraversion are associated with certain tendencies regarding how one processes information. According to them, individuals who score high on neuroticism are likely to possess a negative processing bias, while individuals that score high on extraversion are likely to possess a positive processing bias. Thus, "*Neuroticism and extraversion are two major personality dispositions reflecting individual differences in the degree to which one experiences overall negative and positive affect, respectively*" (Mak et al., 2003, p. 1484). Accordingly, individuals experience stressors differently, based on their most distinctive personality trait (Hemenover, 2011; Mak et al., 2003). Thus, individuals who score highly on neuroticism are more likely to make a threat appraisal, while those who score highly on extraversion have a stronger tendency to make a challenge appraisal (Mak et al., 2004). However, extraversion predicts challenge appraisal only in combination with neuroticism. Neuroticism is highly predictive of threat appraisal, as well as of challenge appraisal, in that there is a negative relationship between neuroticism and challenge appraisal (Gallagher, 1990). To accurately measure extraversion's influence, neuroticism must always be taken into account as well. When neuroticism is associated with work engagement or opportunity appraisal, extraversion's positive influence on job performance diminishes.

Further, extraversion and neuroticism seem to immediately influence job performance. Previous research implied that neuroticism and extraversion are directly associated with the emergence of burnout and work engagement, respectively (Langelaan et al., 2006).

Langelaan et al.'s (2006) findings supported previous research findings (e.g. Alarcon, Eschleman & Bowling, 2009; Zellars, Hochwarter, Perrewé, Hoffman and Ford, 2004) and pointed to a strong relationship between neuroticism and burnout. In contrast, evidence suggests that the relationship between extraversion and work engagement is not as straightforward. Langelaan et al. (2006) found that this association is characterised by high scores on extraversion in combination with low scores on neuroticism. Comparable to Mak et al. (2003), who stated that a combination of neuroticism and extraversion must be considered in order to investigate the relationship between extraversion and opportunity appraisal. The reasons that neuroticism influences the extraversion-work engagement relationship, “(...) seem to be that burnout and engagement are each other's opposites only as far as neuroticism is concerned” (Langelaan et al., 2006). Furthermore, Zellars, et al. (2004) assumed that neuroticism has a strong influence on work engagement. When both personality traits (neuroticism and extraversion) were present, only the effect of neuroticism remained. These findings suggest that N has a strong influence and must always be considered.

In summary, neuroticism and extraversion influence threat and opportunity appraisal. In turn, it is anticipated that these appraisals are associated with burnout and work engagement, respectively. Therefore, it is hypothesized that:

*Threat appraisal partially mediates the relationship between neuroticism and burnout (exhaustion and distance) (H3a and H3b, respectively).<sup>3</sup>*

*Opportunity appraisal (time/ responsibility and possibilities) partially mediates the relationship between extraversion and work engagement (H4a and H4b, respectively) when extraversion is the only influence (H4c)<sup>4</sup>.*

As mentioned before, it is anticipated that work engagement is positively associated with job performance (Schaufeli & Bakker, 2004), while burnout appears to be associated with diminished job performance (Maslach et al., 2001). Accordingly, it is hypothesized that:

*Burnout mediates the relationship between neuroticism and job performance (H5).*

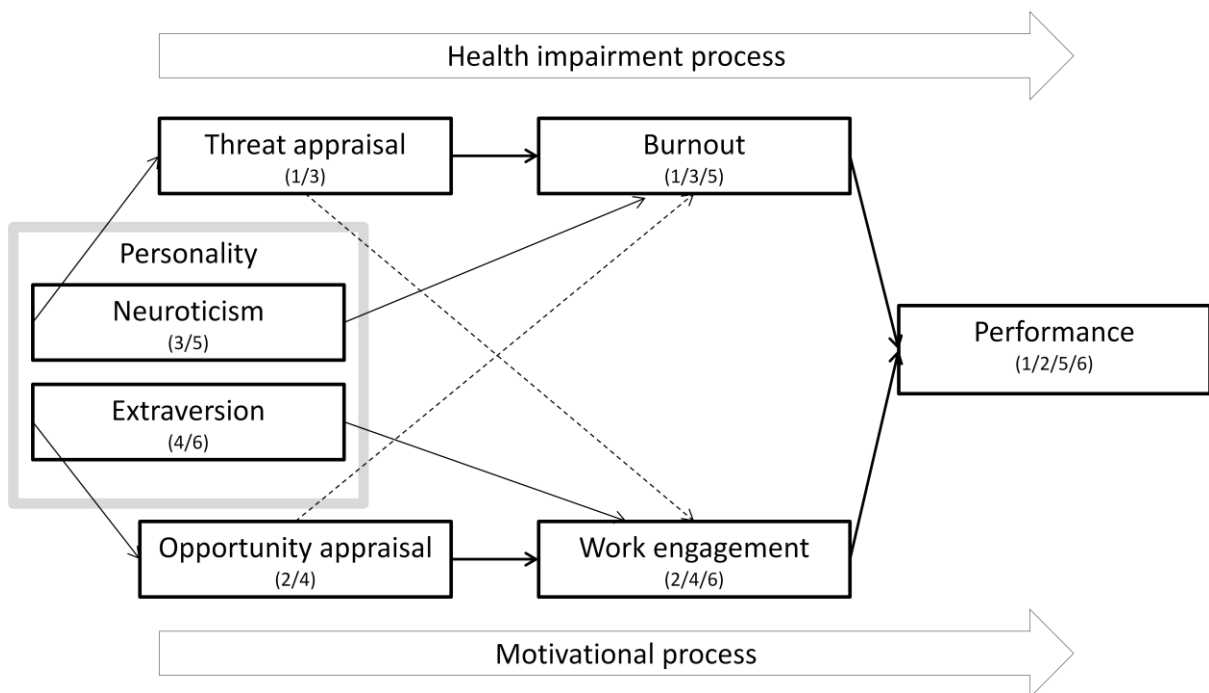
- a. *Burnout (exhaustion) mediates the relationship between neuroticism and task performance (H5a).*

- b. Burnout (distance) mediates the relationship between neuroticism and task performance (H5b).
- c. Burnout (exhaustion) mediates the relationship between neuroticism and contextual performance (H5c).
- d. Burnout (distance) mediates the relationship between neuroticism and contextual performance (H5d).

Work engagement mediates the relationship between extraversion and job performance (task performance and contextual performance) (H6a and H6b, respectively), when extraversion is the only influence (H6c)<sup>6</sup>.

**Figure 2**

The Job-Demand Resource model, filled in with variables from this research study.



Notice: the superscribed numbers refer to the hypotheses.

## 2. Method

### 2.1 Respondents & Procedure

A total of 208 employees (176 men, 29 women and 3 unspecified) participated in this study. These employees held positions in various departments of a large Dutch IT company. Participants ranged in age from 21 to 61 years old, with an average age of 38 years ( $sd=10.32$  years).

An online link to the research survey was generated and sent via the organisation's e-mail network to nearly 1,000 employees. The response rate was 20.8%. Before respondents received the survey questions, they were informed that participation in the study was optional and that their responses would remain anonymous. Furthermore, respondents were also given the opportunity to receive general survey results. To ensure maximum participation, a reminder was sent two weeks after the initial e-mail.

### 2.2 Measures

This study was based on a questionnaire that assessed personality, opportunity versus threat appraisal, work engagement, burnout and performance. The characteristics of the subscales are listed below.

#### 2.2.1 Personality

The *Big Five Inventory* (BFI) is a short form of the NEO-FFI, developed by Costa and McCrae (1992). The BFI is available at the *Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek (TNO)*. The questionnaire consisted of 43 items (e.g. 'Ik zie mezelf als iemand die zich veel zorgen maakt') and provided information about five personality traits (Big5) of respondents. The items were measured using a 5-point Likert scale. Respondents were asked if they 'strongly disagreed', 'disagreed', were 'undecided', 'agreed', or 'strongly agreed' with each item. This research focused on the two scales measuring neuroticism ( $\alpha=.70$ ) and extraversion ( $\alpha=.82$ ). Both scales contained eight items.

#### 2.2.2. Opportunity & threat appraisal questionnaire

This questionnaire was based on items from Cavanaugh et al.'s (2000) challenge and hindrance stressor questionnaire (Annex 1 & Annex 3), and it further utilized Gonzáles-Morales and Neves' (2015) research methodology. The items were adapted to the work context of the participants and translated into Dutch. Furthermore, five items were added to broaden the content. This questionnaire provided information about a respondent's appraisal

of several work situations. To make this possible, the questionnaire utilized a 5-point Likert scale, and respondents graded each item two separate times (e.g. "De hoeveelheid tijd die ik spendeer op mijn werk"). The first response concerned the degree of opportunity and the second response concerned the degree of hindrance. Both subscales contained sixteen items. The possible answers were 'not at all', 'not', 'neutral', 'much' and 'very much'. The questionnaire provided a Cronbach's alpha of .91 for opportunity appraisal and a Cronbach's alpha of .92 for threat appraisal.

### 2.2.3 Work engagement

Schaufeli and Bakker (2003) developed the Utrecht Work Engagement Scale (UWES) and this study used the short version of this scale (Schaufeli, Bakker & Salanova, 2006). It consisted of nine items (e.g. 'Op mijn werk bruis ik van energie'), including statements about work situations that measured vitality, absorption and dedication ( $\alpha = .92$ ). Responses to each item ranged from zero to five and represented the frequency with which a particular situation occurred.

### 2.2.4 Burnout

The Utrecht Burnout Scale-Algemeen (UBOS-A) is a valid instrument to measure burnout. The questionnaire was developed by Schaufeli and Dierendonk (1981, 2000), and it consists of fifteen items (e.g. 'Aan het einde van de werkdag voel ik mij leeg'). These items provided information on three subscales: exhaustion (5 items) ( $\alpha = .90$ ), mental distance (4 items) ( $\alpha = .81$ ) and incompetence (6 items) ( $\alpha = .67$ ). To obtain valuable research results, an *incompetence subscale* replaced the original *competence scale*. This *incompetence subscale* contained the same questions as the original scale, but reformatted in a negative manner. Research has indicated that the efficacy scale loads more on engagement, while inefficacy items load more on burnout and are strongly related to the other two burnout components (Schaufeli & Salanova, 2007). The original scaling remained the same and utilized a 6-point scale from zero to five, representing the frequency with which a particular situation occurred.

### 2.2.5 Performance

The Individual Work Performance Questionnaire (IWPQ) was developed by Koopmans (2012) to measure individual job performance. This questionnaire provides three subscales, two of which were used in this study: task performance ( $\alpha = .77$ ) and contextual performance ( $\alpha = .84$ ). Five task performance items and eight contextual performance items (e.g. 'Lukte het mij om hoofdzaken van bijzaken te scheiden') were measured on a 5-point Likert scale



that ranged from ‘seldom’ to ‘always’. The third scale, *counterproductive work*, was not compatible with the current study’s scope.

## **2.3 Statistical Analysis**

An explorative factor analysis was conducted to test the dimensionality of the self-constructed opportunity and threat appraisal questionnaire. Afterwards, correlations between the different variables were determined and the SPSS PROCESS macro by Hayes (2013) was used to test the hypotheses. Next, linear regression analyses were executed to test H4 and H6 more precisely. A significance level of  $\alpha=.05$  was used.

## **3. Results**

### **3.1 Factorial Validity of the Appraisal Measures**

Principal component analyses (PCA) were executed to test the dimensionality of the threat and opportunity appraisals. The PCA for threat appraisal was conducted for sixteen items with a direct oblimin rotation. Three components with an eigenvalue greater than 1 emerged, which explained 45.04%, 10.59% and 7.24% of the variance, respectively. Approximately seven items loaded on factor one, while one item or less loaded on each of the other factors. This suggested the presence of unidimensionality, which the inflexion of the scree plot also supported. The elbow criterion was utilized, indicating that the construct was likely unidimensional rather than three-dimensional. PCA results also backed this conclusion. The exclusion of the second and third factors was also supported by the outcomes of the pattern matrix (Annex 1). This matrix demonstrated that the first component’s items were clustered around ‘time/ responsibility’. The contents of the first component seemed to have the strongest effect on the emergence of threat. The second and third components, which clustered around ‘clarity’ and ‘possibilities at work’ seemed less important in the measurement of threat appraisal. Also, the correlation matrix did not prove the presence of a three-dimensional structure. All of the p-values were indicative of a weak to medium correlation (Annex 2).

A PCA also tested the dimensionality of opportunity appraisal therefore a direct oblimin rotation on sixteen items was used. The analysis yielded four eigenvalues greater than 1, which explained 42.78%, 14.52%, 7.35% and 6.38% of the variance, respectively. These factors accounted for 71.02% of the total variance. The remaining factors had eigenvalues

below 1 and explained 5.43% or less of the variance. Factor one loaded on approximately seven items, while the second factor explained two items, and the remainder less than one item. This indicated a two-dimensional solution, also supported by the inflexion of the scree plot. The pattern matrix (Annex 3) illustrated that the first component was clustered around 'time/ responsibility at work'. The second component seemed to contain 'possibilities at work'. The pattern matrix further suggested that the factor loadings of the third component were negative, while the item loadings on the fourth component were very weak. The correlation matrix (Annex 4) also indicated the presence of a unidimensional or two-dimensional solution. Factors one, two and four were weakly correlated, while the third construct seemed to measure the polar opposite to opportunity appraisal. Because the third factor did not add value (due to its negative correlations with the remaining factors), and because the loadings of the first factor could almost completely explain the fourth factor, a two-dimensional solution was selected. The labels for the first factor ('time/ responsibility') and the second factors ('possibilities') were maintained.

### 3.2 Construct Validity

Correlation analyses were executed to explore the associations between variables and to determine if unexpected relations were present. No abnormalities were detected.

**Table 1**

*Correlations between the study variables (N=208).*

Measure	M	SD	Correlations									
			1.	2.	3.	4.	5.	6.	7.	8.	9.	
1.Neuroticism	2.5	.62										
2.Extraversion	3.35	.77	-.34*									
3.Work Engagement	3.88	.96	-.24*	.40*								
4.Burnout (exhaustion)	1.96	1.02	.33*	-.15*	-.21*							
5.Burnout (distance)	1.77	.88	.22*	-.18*	-.63*	.49*						
6.Performance (task)	3.56	.68	-.12	.12	.29*	-.18*	-.20*					
7.Performance (contextual)	3.75	.73	-.11	.35*	.49*	-.07	-.31*	.58*				
8.Threat Appraisal	2.24	.73	.31*	-.01	-.15*	.31*	.31*	-.10	.05			
9.Opportunity Appraisal (time/ responsibility)	3.00	.91	-.04	.41*	.44*	-.15*	-.31*	.25*	.41*	.25*		
10.Opporuntiy Appraisal (possibilities)	2.23	.81	.13	.14*	.16*	-.02	.01	.14*	.07	.33*	.47*	

### 3.3 Testing the hypotheses

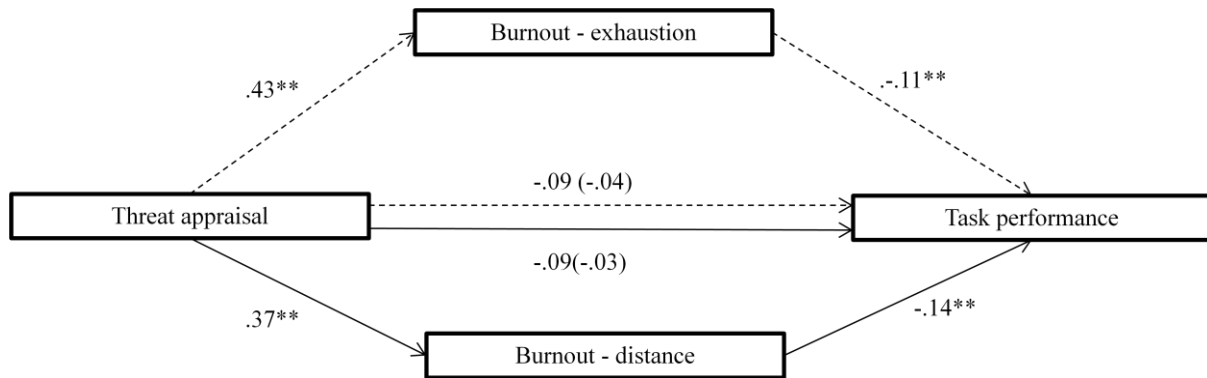
The results of the mediation analyses regarding hypotheses H1, H2, H3, H4, H5 and H6 are reported in a series of figures (below). Each figure shows the results of two independent analyses. Figures 3 through 11 differentiate between these analyses by visualizing one with dashed arrows and one with full arrows. These figures contain the regression coefficients (b). The significance level was ( $\alpha < .05$ )\*\*. Coefficients in brackets indicate the regression value when the equation controlled for the mediator. A mediation effect was anticipated, in instances when Baron and Kenny's (1986) conditions were met. A significant regress of the dependent variable on the independent variable was necessary. As well as a significant regress of the mediator on the independent variable, and a regress of the dependent variable on both, mediator and dependent variable. In case of a full mediation, the regress of the dependent variable on the independent variable was replaced by a significant and lower regression coefficient.

To test *Hypothesis 1* (burnout mediates the relationship between threat appraisal and performance), four mediation analyses were conducted using PROCESS. These analyses investigated the mediation effect of burnout (exhaustion and distance) on task performance and contextual performance, respectively. In the first sub-hypothesis (H1a), task performance was the dependent variable, threat appraisal was the independent variable and burnout (exhaustion) was the mediating variable. Regression analysis results indicated that the direct relationship between threat appraisal and task performance was insignificant, while there was a significant relationship between threat appraisal and burnout (exhaustion), as well as between burnout (exhaustion) and task performance. The dashed arrows in the upper part of Figure 3 illustrate the relations between the variables. Hence, H1a was not confirmed.

In second sub-hypothesis (H1b), task performance was the dependent variable, threat appraisal was the independent variable and burnout (distance) was the mediating variable. The full arrows in the lower part of Figure 3 visualize the relations between the variables. The results of the analysis indicated an insignificant direct relationship between threat appraisal and task performance, as well as significant relationships between threat appraisal and burnout (distance), and between burnout (distance) and task performance. Hence, H1b was not confirmed.

**Figure 3**

*Mediation effects of burnout (exhaustion) - H1a - and burnout (distance) - H1b - on task performance (b's).*

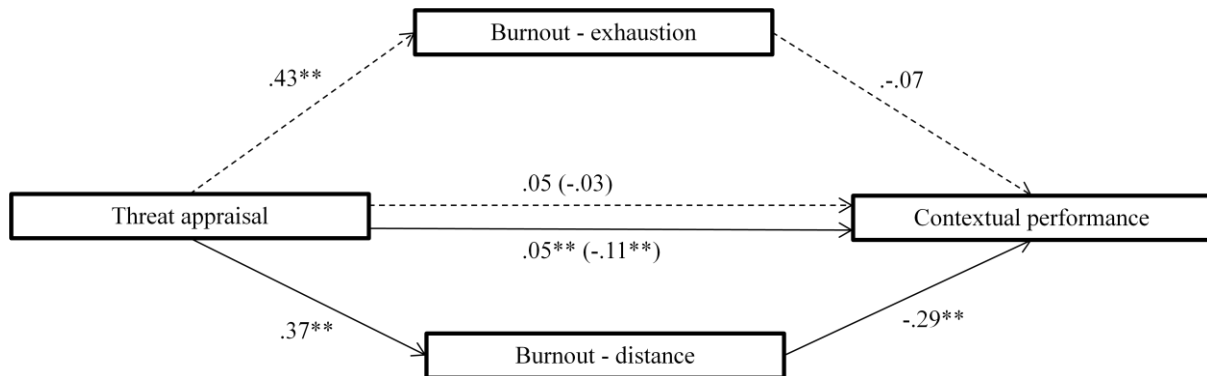


The third sub-hypothesis (H1c) used contextual performance as the dependent variable, threat appraisal as the independent variable and burnout (exhaustion) as the mediating variable. The analysis indicated a direct relationship between threat appraisal and contextual performance, and a relationship between burnout (exhaustion) and contextual performance. However, evidence did not indicate a connection between threat appraisal and burnout (exhaustion). The dashed arrows in the upper part of Figure 4 visualize the relations between the variables. H1c is not confirmed.

The fourth sub-hypothesis (H1d) used contextual performance as the dependent variable, threat appraisal as the independent variable, and burnout (distance) as the mediating variable. The full arrows in the lower part of Figure 4 visualize the relations between the variables. The results indicated a direct relationship between threat appraisal and contextual performance. Results further suggested that threat appraisal affects burnout (distance) and that burnout (distance) affects performance. H1d indicated a partial mediation effect.

**Figure 4**

*Mediation effects of burnout (exhaustion) - H1c - and burnout (distance) - H1d - on contextual performance (b's).*

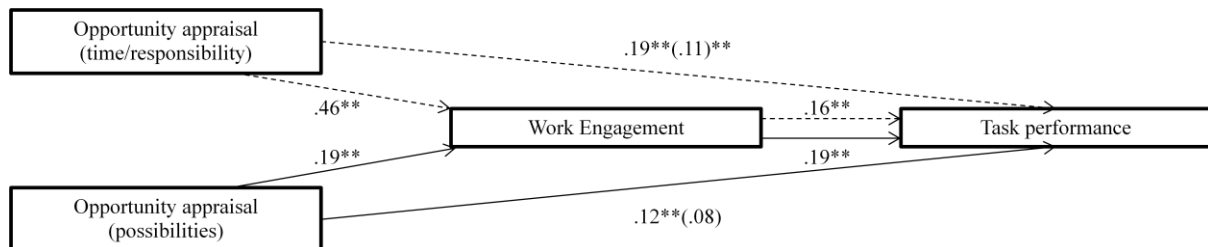


To test *Hypothesis 2* (work engagement mediates the relationship between opportunity appraisal and performance), four mediation analyses utilizing PROCESS were carried out. The first sub-hypothesis (H2a) used task performance as the dependent variable, opportunity appraisal (time/responsibility) as the independent variable and work engagement as the mediating variable. The dashed arrows in the upper part of Figure 5 visualize the relations between the variables. The analysis indicated that a significant relationship exists between opportunity appraisal (time/responsibility) and task performance, as well as between opportunity (time/responsibility) and work engagement, and work engagement and task performance. Next, results indicated that work engagement had a mediating effect. H2a indicated a partial mediation effect

The second sub-hypothesis (H2b) employed task performance as the dependent variable, opportunity appraisal (possibilities) as the independent variable and work engagement as the mediating variable. The full arrows in the lower part of Figure 5 visualize the relations between the variables. The results indicated a direct relationship between opportunity appraisal (possibilities) and task performance. Furthermore, opportunity appraisal (possibilities) was related to work engagement, and work engagement was related to task performance. Work engagement was not found to have a mediating effect here. H2b was not confirmed.

**Figure 5**

*Mediation effects of work engagement on the relationship between opportunity appraisal (time/responsibility) on task performance (H2a) and opportunity appraisal (possibilities) on task performance (H2b) (b's).*

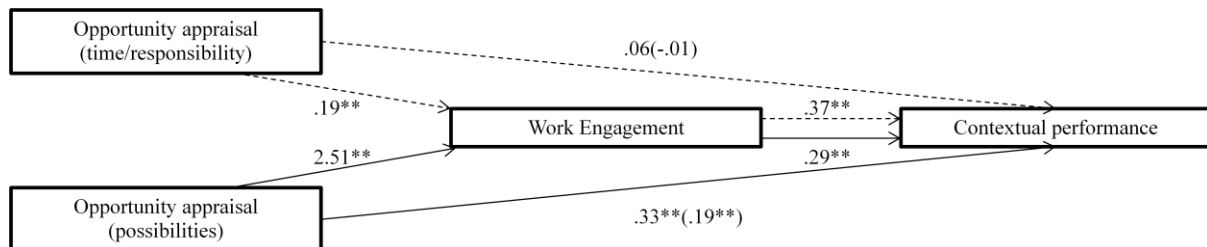


The third sub-hypothesis (H2c) utilized contextual performance as the dependent variable, opportunity appraisal (time/responsibility) as the independent variable and work engagement as the mediating variable. The dashed arrows in the upper part of Figure 6 visualize the relations between the variables. The results indicated a significant relationship between opportunity appraisal (time/responsibility) and contextual performance. Opportunity appraisal (time/responsibility) was correlated with work engagement, and work engagement was in turn related to contextual performance. Furthermore, results indicated that work engagement had a mediating effect. H2c indicated a partial mediation effect.

In the fourth sub-hypothesis (H2d), contextual performance was the dependent variable, opportunity appraisal (possibilities) was the independent variable and work engagement was the mediating variable. The dashed arrows in the lower part of Figure 6 visualize the relations between the variables. The results indicated an insignificant relationship between opportunity appraisal (possibilities) and contextual performance. Furthermore, opportunity appraisal (possibilities) was significantly related to work engagement, and work engagement to contextual performance. Work engagement was not found to have a mediating effect here. H2d was not confirmed.

**Figure 6**

*Mediation effects of work engagement on the relation of opportunity appraisal (time/responsibility) on contextual performance (H2c) and opportunity appraisal (possibilities) on contextual performance (H2d) (b's).*



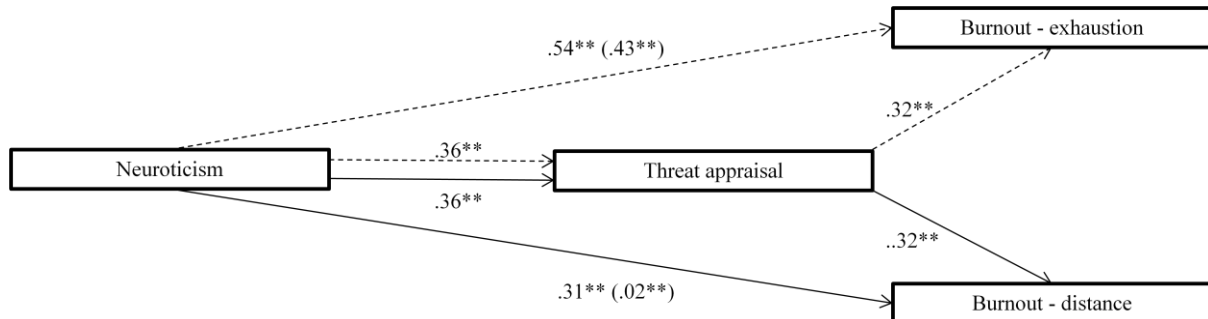
To test *Hypothesis 3* (threat appraisal mediates the relationship between neuroticism and burnout), two mediation analyses were carried out utilizing PROCESS. In the first sub-hypothesis (H3a), burnout (exhaustion) was the dependent variable, neuroticism was the independent variable and threat appraisal was the mediating variable. The dashed arrows in the upper part of Figure 7 visualize the relations between the variables. The results indicated a significant relationship between neuroticism and burnout (exhaustion). Moreover, neuroticism was correlated with threat appraisal, and threat appraisal was related to burnout (exhaustion). Results indicated that work engagement had a mediating effect. H3a was confirmed.

In the second sub-hypothesis (H3b), burnout (distance) was the dependent variable, neuroticism was the independent variable and threat appraisal the mediating variable. The full arrows in the lower part of Figure 7 visualize the relations between the variables. The analysis indicated that a significant relationship exists between neuroticism and burnout (distance). Neuroticism was correlated with threat appraisal, while threat appraisal and burnout (distance) were also related. Results indicated that work engagement had a mediating effect. H3b was confirmed.



**Figure 7**

*Mediation effects of threat appraisal on the relationship between neuroticism and burnout (exhaustion)(H3a) and burnout (distance) (H3b), respectively (b's).*



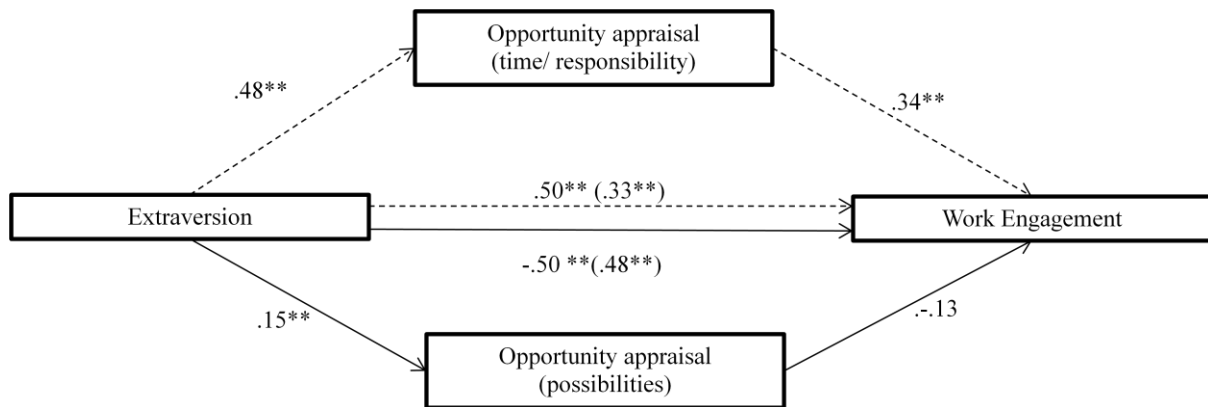
To test *Hypothesis 4* (opportunity appraisal mediates the relationship between extraversion and work engagement), two mediation analyses with PROCESS were carried out. Next, three interaction analyses were executed to account for neuroticism's influence on opportunity appraisal and work engagement. In the first sub-hypothesis (H4a), work engagement was the dependent variable, extraversion was the independent variable and opportunity appraisal (time/responsibility) was the mediating variable. The dashed arrows in the upper part of Figure 8 visualize the relationship between the variables. The results indicated a significant relations between extraversion and work engagement. Extraversion related significantly to opportunity appraisal (time/responsibility), and opportunity appraisal (time/responsibility) was correlated with work engagement. Furthermore, results indicated that opportunity appraisal (time/responsibility) had a mediating effect. H4a was confirmed.

In the second sub-hypothesis (H4b), work engagement was the dependent variable, extraversion was the independent variable and opportunity appraisal (possibilities) was the mediating variable. The full arrows in the lower part of Figure 8 visualize the relations between the variables. The results indicated a significant relationship between extraversion and work engagement. Extraversion was correlated to opportunity appraisal (possibilities), while opportunity appraisal (possibilities) was correlated with work engagement. Furthermore, opportunity appraisal (possibilities) was not found to have a mediation effect. H4b was not confirmed.

To test whether extraversion influences opportunity appraisal and work engagement on its own (H4c), or in collaboration with neuroticism, a univariate analysis was executed. The results indicated that the dependent variables ‘work engagement’  $F(90,38)=.647$ ,  $p=.952$ , and ‘opportunity appraisal (possibilities)’  $F(90,38)=1,34$ ,  $p=.156$  were not influenced by an interaction between extraversion and neuroticism. However, opportunity appraisal (time/responsibility) seemed to be predicted by both personality traits  $F(90,38)=1.66$ ,  $p=.041$ .

**Figure 8**

*Mediation effects of opportunity appraisal (time/responsibility)(H4a) and opportunity appraisal (possibilities) (H4b) on extraversion and work engagement (b’s).*



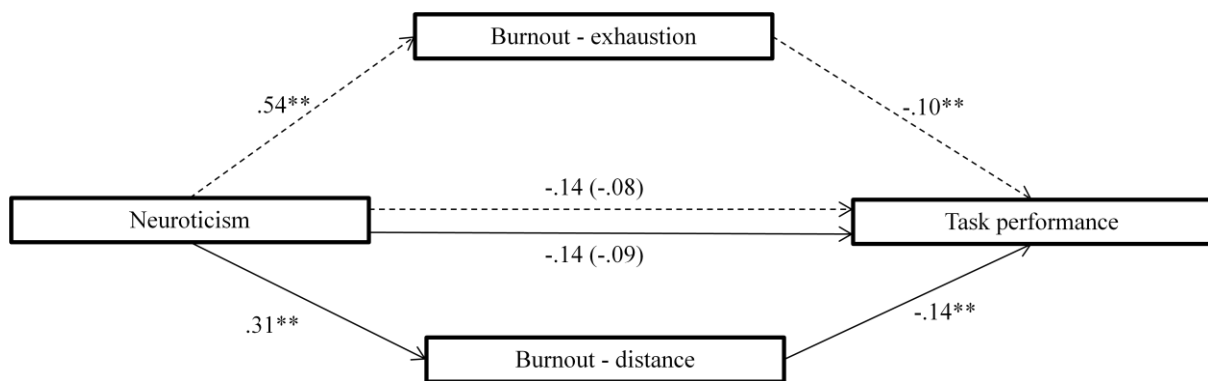
To test *Hypothesis 5* (burnout mediates the relationship between neuroticism and performance), four mediation analyses were conducted using PROCESS. In the first sub-hypothesis (H5a), task performance was the dependent variable, neuroticism was the independent variable and burnout (exhaustion) was the mediating variable. The dashed arrows in the upper part of Figure 9 visualize the relations between the variables. The results of this analysis indicated that the direct relationship between neuroticism and task performance was insignificant. However, there were significant correlations between neuroticism and burnout (exhaustion) and between burnout (exhaustion) and task performance. Further, burnout (exhaustion) was not found to have a mediating effect. H5a was not confirmed.

In the second sub-hypothesis (H5b), task performance was the dependent variable, neuroticism was the independent variable and burnout (distance) was the mediating variable. The full arrows in the lower part of Figure 9 visualize the relations between the variables. The results of this analysis indicated that the direct relationship between neuroticism and task

performance was insignificant. However, correlations between neuroticism and burnout (distance) and between burnout (distance) and task performance were significant. Further, burnout (distance) was not found to have a mediating effect. H5b was not confirmed.

**Figure 9**

*Mediation effects of burnout (distance) (H5a) and burnout (exhaustion) (H5b) on neuroticism and task performance (b's).*

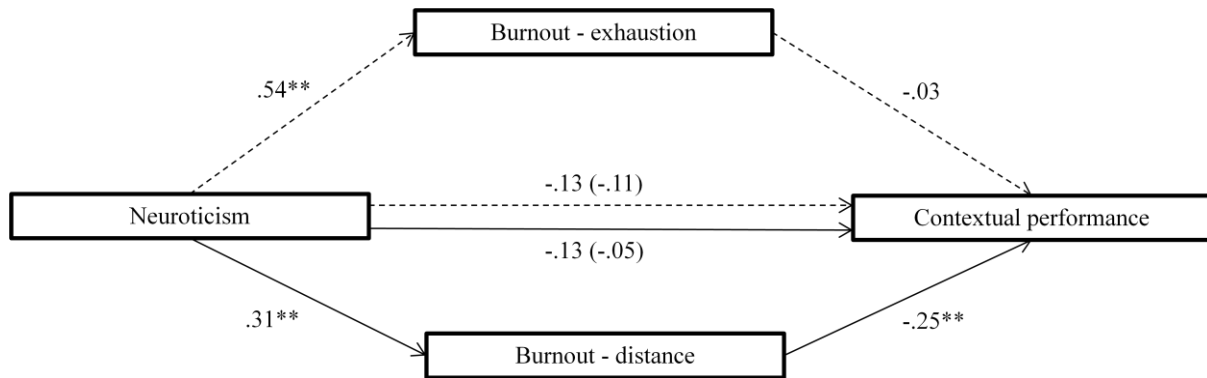


In the third sub-hypothesis (H5c), contextual performance was the dependent variable, neuroticism was the independent variable and burnout (exhaustion) was the mediating variable. The dashed arrows in the upper part of Figure 10 visualize the relations between the variables. The results of this analysis indicated that the direct relationship between neuroticism and contextual performance was insignificant, as was the direct relationship between burnout (exhaustion) and contextual performance. However, there was significant relationship between neuroticism and burnout (exhaustion). Moreover, no evidence was found that burnout (exhaustion) has a mediating effect. H5c was not confirmed.

In the fourth sub-hypothesis (H5d), contextual performance was the dependent variable, neuroticism was the independent variable and burnout (distance) was the mediating variable. The full arrows in the lower part of Figure 10 visualize the relations between the variables. The results of this analysis indicated that the direct relationship between neuroticism and contextual performance was insignificant, while the correlation between neuroticism and burnout (distance) was significant, as was the correlation between burnout (distance) and contextual performance. Neuroticism was not found to have a mediating effect. H5d was not confirmed.

**Figure 10**

*Mediation effects of burnout (distance) (H5c) and burnout (exhaustion) (H5d) on neuroticism and contextual performance (b's).*



To test *Hypothesis 6* (work engagement mediates the relationship between extraversion and performance) two mediation analyses utilizing PROCESS were executed. Next, three interaction analyses were conducted to account for neuroticism's influence on performance and work engagement. In the first sub-hypothesis (H6a), task performance was the dependent variable, extraversion was the independent variable and work engagement was the mediating variable. The dashed arrows in the upper part of Figure 11 visualize the relations between the variables. The results of this analysis indicated that the relationship between extraversion and task performance was insignificant. However, extraversion and work engagement were found to be significantly correlated, as were work engagement and task performance. Furthermore, work engagement was not found to have a mediating effect. H6a was not confirmed.

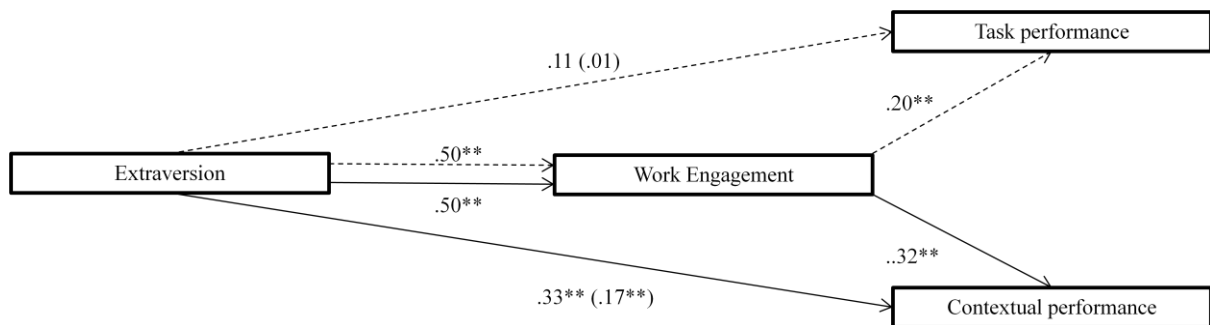
In the second sub-hypothesis (H6b), contextual performance was the dependent variable, extraversion was the independent variable and work engagement was the mediating variable. The full arrows in the lower part of Figure 11 visualize the relations between the variables. The results indicated a significant relationship between extraversion and contextual performance. Extraversion was correlated with work engagement, while work engagement was related to contextual performance. Furthermore, work engagement was found to have a mediating effect. H6b was partially confirmed.

To test whether extraversion influences work engagement, task performance and contextual performance on its own (H6c), or in interaction with neuroticism, a univariate analysis was executed. The results indicated that the dependent variables 'work engagement'  $F(90,38)=.647, p=.952$ , 'task performance'  $F(90,38)=.321, p=1.00$  and 'contextual

performance'  $F(90.38)=.364$ ,  $p=1.00$  were not influenced by an interaction between extraversion and neuroticism. Therefore was H6c confirmed, with extraversion as the only predictor of job performance.

**Figure 11**

*Mediation effects of burnout (distance) (H6a) and burnout (exhaustion) (H6b) on threat appraisal and contextual performance (b's).*



**3.4 Main results**

To test the hypotheses, eighteen regression analyses were carried out. The main results are summarized in Table 2.

**Table 2** Summary of mediation effects between measured constructs.

		Mediation		
		Partial	No	R <sup>2</sup>
Hypothesis 1				
Threat appraisal → burnout → performance	Threat appraisal - exhaustion - task performance (H1a)		X	
	Threat appraisal - exhaustion - contextual performance (H1b)		X	
	Threat appraisal - distance - task performance (H1c)		X	
	Threat appraisal - distance - contextual performance (H1d)	X		.118
Hypothesis 2				
Opportunity appraisal → work engagement → performance	Time/Responsibility - work engagement - task performance (H2a)	X		.103
	Time/Responsibility - work engagement - contextual performance (H2b)	X		.283
	Possibilities - work engagement - task performance (H2c)	X		.092
	Possibilities - work engagement - contextual performance (H2d)		X	
Hypothesis 3				
Neuroticism → threat appraisal → burnout	Neuroticism- threat appraisal - exhaustion (H3a)	X		.158
	Neuroticism - threat appraisal - distance (H3b)	X		.113
Hypothesis 4				
Extraversion → opportunity appraisal → work engagement	Extraversion - time/ responsibility - work engagement (H4a)	X		.249
	Extraversion - possibilities - work engagement (H4b)		X	
Hypothesis 5				
Neuroticism → burnout → performance	Neuroticism - exhaustion - task performance (H5a)		X	
	Neuroticism - exhaustion - contextual performance (H5b)		X	
	Neuroticism - distance - task performance (H5c)		X	
	Neuroticism - distance - contextual performance (H5d)		X	
Hypothesis 6				
Extraversion → work engagement → performance	Extraversion - work engagement - task performance (H6a)		X	
	Extraversion - work engagement - contextual performance (H6b)	X		.264

Partial mediation (38%) and no mediation effects (62%) were found in the analysis. It seems that the positive variables (opportunity appraisal and extraversion) have an especially strong influence on performance, while the negative variables (threat appraisal and neuroticism) have less of a mediating effect. This is a straightforward evaluation, and it is discussed in more detail below.

#### **4. Discussion**

This study's aim was to investigate the relationship between personality traits (neuroticism and extraversion) and work performance, as well as the relationship between both opportunity and threat appraisal and work performance. Furthermore, the study examined the mediating role of burnout and work engagement.

The *first hypothesis* anticipated that burnout mediates the relationship between threat appraisal and performance. However, no direct relationship was established between threat appraisal and performance (H1), and therefore a mediation effect was not found. Within the scope of the JD-R model (Schaufeli & Bakker, 2004), it was expected that burnout would fully mediate the relationship between threat appraisal and performance. It was anticipated that a threat appraisal signifies a job demand requiring psychological effort, thus implying psychological and physiological costs (Demerouti, et al., 2001). For that reason, threat appraisals would initiate a *health impairment process* (Schaufeli & Taris, 2013) that would lead to the emergence of burnout and decreased performance. Even if this expectation was not fulfilled, current research did suggest the presence of some of the associations that this study predicted. For example, threat appraisal seemed to be associated with burnout. Experiencing a stressor that outstrips one's personal resources is thus likely to result in feelings of exhaustion and cynicism (Maslach, Jackson & Leiter, 1997). Moreover, the relationship between burnout and decreased performance (LePine et al., 2005) is confirmed by the study.

The current study did not find evidence for the burnout's anticipated mediating effect, and the lack of a relationship between threat appraisal and performance can explain this unexpected result. Webster et al. (2011) found that hindrance appraisal is positively associated with physical and psychological strain. They stated that, "(...) *stressors appraised both as hindrance and challenges can have aversive effects on employees*" (Webster et al., 2011). This finding might explain the lack of a relationship between threat appraisal and

performance. When a stressor is simultaneously appraised as both a challenge and a hindrance, challenge appraisal might restrict the influence of threat appraisal.

González-Morales and Neves (2013) also anticipated the threat appraisal-performance relationship. The research setting could account for why they found evidence for this relationship while this study did not. González-Morales and Neves' (2013) study differed in terms of its sample and its method for measuring performance. Furthermore, they used distress rather than burnout as a mediator. Distress has a negative influence on achievement motivation (Selye, 1982). Distress seems comparable to burnout, which was also expected to negatively influence performance (Maslach, Jackson & Leiter, 1997). Perhaps these two constructs are not actually that similar, even if they were expected to have analogous effects on performance. Furthermore, the scale measured distress with a focus on psychosomatic complaints, while the UBOS is broader and addresses employees' feelings and experiences regarding work situations (Schaufeli & Dierendonck, 2000). Another difference between the two studies concerns the measurement of performance. González-Morales and Neves (2013) attempted to objectively measure performance and allowed supervisors to rate their subordinates. It is possible that the supervisors' ratings diverged from the employees' self-assessed performance.

The *second hypothesis* was partly confirmed. Instead of a full mediation effect, a partial mediation effect was found. It was expected that work engagement mediates the relationship between opportunity appraisal and performance. Within the scope of the JD-R model, opportunity appraisal can be interpreted as a kind of job resource, and is therefore responsible for initiating the *motivational process* (Schaufeli & Taris, 2013). This process leads to the achievement of work goals, personal growth and development (Demerouti, et al., 2001). Earlier research indicated that a relationship exists between opportunity appraisal and work engagement (Maslach, Jackson & Leiter, 1997). It is possible that a positively appraised situation might lead to positive feelings and to the preservation or enhancement of personal well-being (Lazarus & Folkman, 1984). Positive feelings and the possibility of enhanced well-being are, in turn, correlated with the emergence of work engagement in the dimensions of vitality, dedication and resilience; these associations are confirmed by current research. Furthermore, this study also found evidence that work engagement is related to better performance (LePine, 2005). Also, direct relationship was found between opportunity appraisal and performance, a relationship on which work engagement had a mediating effect. That points to a partial mediation effect and partly contradicts expectations that were based



on previous research. Multiple differences regarding research settings could explain these unanticipated results. González-Morales and Neves' (2013) research population consisted of students. Their opportunity and threat appraisal questionnaire consisted of questions adapted for this particular sample. In contrast, the current study focused on employees of a large organisation, and its questionnaire was adapted for this context. The participants of the two studies differed concerning their maturity levels, daily tasks, work contexts and other factors.

The third hypothesis was confirmed; it had anticipated that threat appraisal has a partial mediation effect on the relationship between neuroticism and burnout. Previous research indicated that a relationship exists between neuroticism and threat appraisal. Individuals scoring high on neuroticism had an inclination to experience stress at work (Mak et al., 2004) leading them to appraise some situations as threatening (Hemenover, 2011; Gallagher, 1990). The appraisal of a threat, in turn, led to negative emotional experiences (Gallagher, 1990), which are antecedents of the emergence of burnout (Maslach, Jackson & Leiter, 1997).

The fourth hypothesis assumed that opportunity appraisal partially mediates the relationship between extraversion and work engagement. This hypothesis was confirmed for opportunity appraisal (time/responsibilities) (H4a), while no mediation effect was found for opportunity appraisal (possibilities) (H4b). Nevertheless, results showed a direct relationship between extraversion and work engagement (Langelaan et al., 2006), as well as the relationship between extraversion and opportunity appraisal (possibilities) (Mak et al., 2003). The association between opportunity appraisal (possibilities) and work engagement was lacking, therefore mediation was not possible. Neuroticism can likely explain the fact that the opportunity appraisal subscales each had a different influence on the relation of extraversion and work engagement. Gallagher (1990) found that neuroticism is predictive not only of threat appraisal, but that it also influences the relationship between extraversion and opportunity appraisal. The interaction analysis indicated that the opportunity appraisal regarding time and responsibility is influenced by an interaction between neuroticism and extraversion ( $\alpha=.041$ ), while the subscale for possibilities is only influenced by extraversion (H4c). The presence of an interaction, in turn, can influence the relationship between opportunity appraisal and work engagement.

The fifth hypothesis stated that burnout mediates the relationship between neuroticism and performance. However, this study found that neuroticism and performance do not have a

direct relationship. Within the scope of the JD-R model (Schaufeli & Bakker, 2004), it was expected that neuroticism and performance were negatively related. It was anticipated that high neuroticism was associated with the emergence of burnout (Langelaan et al., 2006), which would consequently lead to lowered performance (LePine et al., 2005; Taris, 2006). For that reason, neuroticism would initiate a *health impairment process* (Schaufeli & Taris, 2013) that would lead to the emergence of burnout and to decreased performance. Nevertheless, a positive relationship was established between neuroticism and burnout, and burnout and performance. Alarcon et al.'s (2006) meta-analysis also found evidence for this relationship. Burnout and performance were negatively correlated in Alarcon et al.'s study. As burnout increases, performance declines (Maslach et al., 2000).

The central question regarding the fifth hypothesis is: Why failed the current research to find evidence for a relationship between neuroticism and performance? Salgado's (1997) meta-analysis could shed light on this missing relationship. He found that neuroticism is a valid coefficient for the prediction of performance. This finding contradicts the results of the current study, which did not indicate such a connection. Salgado stated that his conclusion regarding neuroticism contradicts the findings of other studies that did not find predictive value, such as those by Barrick and Mount (1991) and Hough, Eaton, Dunnette, Kamp, and McCloy (1990). He argued that this divergence could be rooted in methodology and explained by factors such as the use of confirmatory versus explorative analysis or the varying influence of different personality factors by occupation. In light of these findings, it is not surprising that the current study did not find evidence of a direct relationship between neuroticism and performance, and thus no mediation. The specific sample that this study utilized (in which all participants were employed by the same organisation) might offer another explanation for the missing relationship. A further justification might be the self-reported performance measurement, which could inaccurately portray actual employee performance.

The sixth hypothesis predicted that work engagement mediates the relationship between extraversion and performance. Regarding this hypothesis, this study's results were contradictory. Findings indicated that the anticipated direct relationship between extraversion and performance only held true for contextual performance and not for task performance. Therefore, only contextual performance was partially mediated by work engagement (H6a).

LePine (2001) found that extraversion was more strongly correlated with contextual performance than with task performance and that contextual performance may be viewed as a

social behaviour rather than as an action contributing to organizational goal attainment (Witt, Kacmar, Carlson & Zivnuska, 2002). The remaining relationships between variables indicate that both sub-hypotheses confirm the expected relationship between work engagement and both task performance and contextual performance. Further indicates current research also a positive influence of extraversion on the emergence of work engagement (Langelaan et al.,2006). Extraversion seems to be associated with an individual's feelings of vitality, dedication, and absorption at work. As in the relationship between extraversion and opportunity appraisal (H4) (Gallagher, 1990), it is also essential to consider the influence of neuroticism (Langelaan et al.,2006). This study found a negative relationship between work engagement and neuroticism, and therefore no interaction between extraversion and neuroticism (H6c).

To summarize, findings indicated that job demands do not have an inherently negative effect on performance and employee well-being (burnout versus work engagement). Rather, individual appraisals of job demands determine whether an employee experiences burnout or engagement, and whether he or she performs well. Threat and opportunity appraisals might be able to initiate (or mediate) health impairment processes or motivational processes, respectively. This could be a reason to refrain from the a priori categorisation of work characteristics as either job demands or job resources. To account for individual employees' appraisals, it seems reasonable to adapt the original JD-R model. Nevertheless, additional verification is necessary concerning to the role of appraisal. Personality traits (personal resources) are less influential than appraisal in determining performance. These traits seem to be direct antecedents of appraisal, burnout and work engagement and are not directly related to performance. More research is needed to indicate whether personality should be included in the JD-R model.

#### **4.1 Limitations & Future Research**

The first limitation regards the research design. Due to the cross-sectional design, no statement regarding causal relationships can be made. Future research should use a longitudinal research design to examine the cause-and-effect relationships between the different constructs. Furthermore, alternative orders or combinations of the mentioned study variables could be supposed. To test the model as a whole, two mediators could be used rather than one mediator. For example, could the mediating influence of threat appraisal and burnout on the relationship between neuroticism and performance be investigated. Second, all

constructs were measured with self-reports, which enhanced the risk of method variance, social desirability and dissonance reduction. To decrease these measurement errors, other arrangements are possible. First, an objective observer or a supervisor could measure performance (González-Morales & Neves,2015). Another improvement could focus on the measurement of burnout and work engagement and use peer ratings rather than subjective, individual assessments. Research has proven that peer ratings offer information that is otherwise not available and that they can be a unique source of information when the peer views his or her job in a similar manner (Angelo, de Nisi & Mitchell,1978). Third, the results are not very generalizable. This study's respondents were employees at a large organisation that specializes in IT services. Most of the employees who completed the questionnaire were men. which can be ascribed to the economic sector of the organisation and like on each other regarding education and tasks. To enhance the generalizability of outcomes, the current study should be repeated in a comparable organisational environment. Organisations of a similar size and located in the Netherlands, but offering different services, would be appropriate targets. Such a research setting might provide a more balanced sample in terms of gender and education level. Furthermore, results could offer insight into the relationships between constructs regardless of the organisations industrial sector.

Additionally, the current research indicates a theoretical suggestion for future research. Opportunity and threat appraisal were measured by a new questionnaire, based on the hindrance and challenge items of Cavanaugh et. al (2000). This study demonstrated the high reliability and validity of this instrument, therefore indicating its appropriateness for measuring appraisal. Nevertheless, more research is necessary to improve the composition of items. In particular, the questions regarding opportunity appraisal need improvement. The explorative factor analysis indicated that the items load on four different factors. Replicating this study, giving consideration to the above-mentioned limitations and their implications, would shed additional light on the relationships among the different constructs.

#### **4.2. Practical implications**

This study indicated the potential utility of opportunity and threat appraisal. Until now, managers attempted to reduce the negative effects of job demands and burnout on employees by eliminating stressors from the work context and supporting job resources. The consideration of appraisal opens up the possibility to adapt the actual stress management within organisations. When appraisal is taken into account, it would no longer be necessary to

determine whether a particular aspect of the work environment is inherently negative or positive to employee's well-being and performance. Rather, it is more important that managers are able to create a workplace with job demands that employees positively perceive. In this context, it is no longer necessary to eliminate job demands; however, it is essential to support a positive frame for these job demands. In sum, rather than focusing on the work itself, managers must focus on how employees perceive job demands via appraisal.

## **5. Conclusion**

The research findings indicated that burnout and threat appraisal have a weak mediating influence or no mediating influence on job performance. In contrast, work engagement and opportunity appraisal are more likely to mediate performance outcomes. This indicates that the *positive route* significantly influences employee performance, while the *negative route* does not seem to have comparable effects. While these findings do not fully confirm previous research outcomes, they provide additional value. Until now, Cavanaugh et al.'s (2000) challenge and hindrance categories have been utilized to investigate the influence of stressors on work engagement, burnout and performance. This study can update previous research and demonstrate the mediating power of work engagement, opportunity appraisal and threat appraisal. So far, these mediations were only anticipated on the basis of research regarding direct relationships between study variables and the nature of the JD-R model (Bakker & Schaufeli, 2004). Previous research was only able to anticipate the possibility of a mediation effect. This study not only proved the existence of these anticipated relationships but also provided additional information regarding mediation and regressions.

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## 7. Annexes

### ANNEX 1: Pattern Matrix - Threat appraisal questionnaire

Component	1	2	3
	Time Responsibility	Clarity	Possibilities
Het aantal verschillende taken dat ik heb	<b>.788</b>		
De hoeveelheid tijd die ik spendeer op mijn werk	<b>.693</b>		
De hoeveelheid werk die gedaan moet worden binnen de gestelde tijd.	<b>.826</b>		
De tijdsdruk op mijn werk	<b>.879</b>		
De verantwoordelijkheid die ik draag.	<b>.834</b>		
Het gebied waaover mijn verantwoordelijkheden uitstrekken.	<b>.827</b>		
De vele discussies dat ik heb met mijn collega's.	<b>.472</b>		
De onduidelijkheid over de taken die ik moet uitvoeren.		<b>.607</b>	
Het vele gedoe dat ik dagelijks heb op mijn werk.	<b>.371</b>	<b>.430</b>	
Het politieke gekonkel dat meer invloed heeft op beslissingen dan prestaties		<b>.908</b>	
De onduidelijkheid over wat van mij op werk		<b>.618</b>	

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wordt verwacht.

De begeleiding die ik nodig heb om mijn taak te kunnen vervullen.		<b>.509</b>
Het gebrek an baanzekerheid dat ik heb.		<b>.906</b>
De mate waarin mijn carrière vastloopt.		<b>.652</b>
De mogelijkheid om mijn vaardigheden op het werk te kunnen gebruiken.	.381	<b>.528</b>
De bureaucratie die ik moet overwinnen om mijn werk goed te kunnen doen.		<b>.817</b>

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*Notice: only loadings >.30 were described.*

## **ANNEX 2: Correlation Matrix - Threat appraisal questionnaire**

*Correlation matrix for four factors in a PCA with direct oblimin rotation for threat appraisal items.*

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Factors	1	2	3
1	1	.487	.385
2	.487	1	.386
3	.385	.386	1

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### ANNEX 3: Pattern matrix - Opportunity appraisal questionnaire

Component	1	2	3	4
	Time	Possibilities	-	Time
	Responsibility			
Het aantal verschillende taken dat ik heb	<b>.789</b>			
De hoeveelheid tijd die ik spendeer op mijn werk				<b>.573</b>
De hoeveelheid werk die gedaan moet worden binnen de gestelde tijd.	<b>.508</b>			.503
De tijdsdruk op mijn werk	.439		-.306	<b>.543</b>
De verantwoordelijkheid die ik draag.	<b>.973</b>			
Het gebied waaover mijn verantwoordelijkheden uitstrekken.	<b>.938</b>			
De vele discussies dat ik heb met mijn collega's.	<b>.543</b>		-.304	
De onduidelijkheid over de taken die ik moet uitvoeren.	<b>.356</b>		-.446	-.494
Het vele gedoe dat ik dagelijks heb op mijn werk.		<b>.350</b>	-.505	
Het politieke gekonkel dat meer invloed heeft op beslissingen dan prestaties			-.952	

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De onduidelijkheid over wat van mij op werk wordt verwacht.	<b>.342</b>	-.529	-.356
De begeleiding die ik nodig heb om mijn taak te kunnen vervullen.	<b>.561</b>		
Het gebrek an baanzekerheid dat ik heb.	<b>.952</b>		
De mate waarin mijn carrière vastloopt.	<b>.821</b>		
De mogelijkheid om mijn vaardigheden op het werk te kunnen gebruiken.	<b>.654</b>		
De bureaucratie die ik moet overwinnen om mijn werk goed te kunnen doen.			-.870

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*Notice: only loadings >.30 were described.*

#### **ANNEX 4: Correlation Matrix - Opportunity appraisal questionnaire**

*Correlation matrix for three factors in a PCA with direct oblimin rotation for the  
opportunity appraisal items.*

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Factors	1	2	3	4
1	1	.298	-.436	.197
2	.298	1	-.404	-.070
3	-.436	-.404	1	-.029
4	.197	-.070	-.029	1,000

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