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**TRANSFORMATIONAL LEADERSHIP AND BURNOUT: THE ROLE OF THRIVING  
AND FOLLOWERS' OPENNESS TO EXPERIENCE**

**Keywords:** Transformational leadership, burnout, conservation of resources theory, thriving, openness to experience

## **Abstract**

Grounding our research in Conservation of Resources theory, we set out to shed light on the relationship between transformational leadership and employee burnout. Specifically, we considered both thriving at work, a personal resource, and employees' openness to experience (OTE), a key resource, to uncover whether all employees benefit equally from transformational leadership (a contextual resource). In detail, we argued that the negative effect of transformational leadership on employee burnout is mediated by employee thriving at work, and that employees' OTE constitutes a boundary condition of this process. Our moderated mediation model was tested with two waves of data from 148 employees from a mid-sized German manufacturing company. The results supported our hypotheses and revealed that employees' thriving at work mediated the link between transformational leadership and reduced burnout. As predicted, these relationships were moderated by employees' personality in such a way that transformational leadership affected thriving and hence burnout of employees high on OTE, but not of employees low on OTE. Taken together, our findings suggest that transformational leadership serves as a resource that protects employees from burning out, but also highlights the need to consider employees' personality in perceptions of and reactions to leadership.

## INTRODUCTION

Burnout, the manifestation of prolonged stress on the job (Ganster & Schaubroeck, 1991) has, due to its high incidence rate, gained a reputation as ‘the’ work-related illness of the 20<sup>th</sup> and 21<sup>st</sup> century (Weber & Jaekel-Reinhard, 2000). Its severe individual (e.g., reduced physical health) and organizational consequences (e.g., reduced job performance, increased turnover and associated costs) have been convincingly demonstrated by a plethora of research (e.g., Burke, Greenglass, & Schwarzer, 1996; Toppinen-Tanner, Kalimo, & Mutanen, 2002). However, job stressors that have been linked to increased burnout, such as emotional demands or role conflict (Crawford, LePine, & Rich, 2010), are often difficult to reduce or even remove. Hence, finding alternative ways to manage burnout seems to be the way forward and appears especially urgent in light of the currently aggravated burnout levels following the 2008 Global Financial Crisis (Tsai & Chan, 2011).

Conservation of resources theory (COR; Hobfoll, 1989, 2001), one of the leading theories for understanding burnout (e.g., Halbesleben, 2006), offers a potential solution as it highlights the importance of resources in dealing with job demands and reducing demand-related stress. It states that actual or potential resource loss is responsible for burnout, with resources being defined as “anything perceived by the individual to help attain his or her goals” (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014; p.1338). COR places special importance on the role of the work context as providing multiple resources (e.g., job control; Halbesleben et al., 2014; Hobfoll, 1989), and supervisors have been noted as offering employees various valuable resources, such as feedback and task significance (Piccolo & Colquitt, 2006). Consequently, we focus in this study on supervisors, namely transformational leaders (Bass, 1985; Burns, 1978).

Transformational leadership (TFL; Bass, 1985; Burns, 1978), the most researched leadership style of the last decades (e.g., Judge & Piccolo, 2004), has fulfilled its promise of

‘performance beyond expectations’ through being repeatedly linked to increased job performance (e.g., Braun, Peus, Weisweiler & Frey, 2013; Dvir, Eden, Avolio, & Shamir, 2002). Furthermore, it has also been convincingly shown in numerous studies that employees benefit from transformational supervision through, for example, increased well-being, which has been used as an umbrella term for various positive constructs such as happiness, psychological well-being and physical health (e.g., Arnold, Turner, Barling, Kelloway, & McKee, 2007; Kelloway, Turner, Barling & Loughlin, 2012). In light of this, it is surprising that relatively little attention has been paid to the link between TFL and burnout (Breevaart, Bakker, Hetland, & Hetland, 2014), particularly given that the existing research yields inconsistent findings (i.e. positive, negative or null effects; e.g., Corrigan, Diwan, Campion, & Rashid, 2003; Nielsen & Daniels, 2012; Seltzer, Numerof, & Bass, 1989). It is therefore not possible to draw firm conclusions from these empirical studies and it hence remains unclear if TFL is linked to reduced burnout or whether ‘performance beyond expectations’ (Bass, 1985) comes at the expense of employees’ mental health (i.e. increased burnout).

Moreover, while TFL has been shown to influence employee well-being through, for example, meaningfulness of work, trust in the leader and self-efficacy (Arnold et al., 2007; Arnold & Connelly, 2013; Liu, Siu, & Shi, 2010), it is unknown through which processes TFL affects burnout. In addition, no study has, to our knowledge, examined boundary conditions of the TFL-burnout link, which we deem to be of utmost importance because a moderator might explain said inconclusive results. Indeed, factors such as personality that impact the TFL-burnout relationship have been discussed (Hetland, Sandal, & Johnson, 2007), but not empirically examined.

To address these gaps in the literature, we draw on COR (Hobfoll, 1989, 2001) and build on Ten Brummelhuis and Bakker’s resource taxonomy (2012). We develop a resource-based research model that unites various resources that all focus on

growth, flourishing and learning. In detail, we propose that TFL should be related to reduced levels of burnout due to its positive effect on employees' thriving at work (i.e. learning and vitality; Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). Furthermore, we acknowledge that the experience and effectiveness of leadership depends on followers' characteristics (e.g., Fiedler, 1964; Perry, Witt, Penney, & Atwater, 2010) and propose that TFL (Bass, 1985) does not fulfill the needs of all employees equally, but might instead constitute more of a resource for some employees than others. We focus on employees' openness to experience (OTE), which is characterized by curiosity, broad-mindedness and openness to divergent ideas (Costa & McCrae, 1992), as the Big Five personality dimension most relevant to flourishing and self-development. Taken together, we propose that TFL only has a negative indirect effect on employee burnout via thriving for those employees' high on OTE, ceasing to exist at low levels of the moderator (moderated mediation).

This study offers several noteworthy contributions. First, it sheds light on the link between TFL and employee burnout by examining employee thriving as the underlying mechanism. Second, we integrate research on leadership and personality in regard to burnout by examining OTE as a boundary condition of the TFL-burnout relationship, emphasizing that employees differ in their preference for, and reaction to, leadership (e.g., Fiedler, 1964). In doing so, we aim to explain previous inconsistencies in the literature and answer calls for the examination of moderators of the said link (Breevaart et al., 2014). Importantly, we develop a parsimonious research model in which all variables overlap in their core content of flourishing and learning (positive psychology; Cameron, Dutton, Quinn, & Wrzesniewski, 2003) to address this call. Lastly, from an empirical perspective, the time-wise separation of predictor and outcome variables and the inclusion of important control variables (i.e. neuroticism and negative affect), which have

been linked to burnout in the past (Iverson, Olekalns, & Erwin, 1998; Langelaan, Bakker, Van Doornen, & Schaufeli, 2006), add to the robustness of the findings.

## **THEORY AND HYPOTHESES**

### **Burnout and Conservation of Resources Theory**

Burnout is said to result from an excessive involvement in work (Freudenberger, 1974) and is characterized by exhaustion and disengagement from work (Demerouti, Bakker, Vardakou, & Kantas, 2003). *Exhaustion* has been defined as the consequence of intensive physical, affective and cognitive strain and *disengagement from work* as the emotional, cognitive and behavioral rejection of the job (Freudenberger, 1974). According to COR (Hobfoll, 1989, 2001), employees experience stress when the things they value (their resources) are under threat of loss, actually lost, or when insufficient resources are gained following previous resource investment. Burnout consequently results from the bleeding out of resources without counterbalancing resource gains (Hobfoll, 1989). To counteract resource loss, individuals need to invest resources (Hobfoll, 2001).

The resource concept is further elaborated upon by Ten Brummelhuis and Bakker (2012), who proposed a resource taxonomy. These authors classify resources based on the source of the resource (i.e. contextual vs. personal) and their transient nature (i.e. structural vs. volatile). Contextual resources are, in line with Hobfoll (2002), part of the social context of an individual, while personal resources are proximate to the self. Examples of structural (i.e. durable), contextual resources are working conditions, and examples of volatile (i.e. temporal or fleeting), personal resources are energy and attention. Ten Brummelhuis and Bakker (2012) propose that contextual resources, such as praise from the supervisor, lead to various outcomes, for example job performance, through their positive impact on personal resources, such as positive emotions. These relationships are said to be, in turn, moderated by individuals' key resources. Key resources constitute a subtype of personal, structural

resources that serve as management resources in so far that they enable the efficient usage of other resources (Thoits, 1994). In this way, key resources are said to facilitate an active and efficient coping style (Hobfoll, 2002). Examples include personality traits such as optimism and self-esteem that influence whether individuals begin difficult tasks and seek support in doing so (Ten Brummelhuis & Bakker, 2012). Through the inclusion of key resources, these authors highlight that the value of a resource is not universal, but depends on the fit between the individual and the respective resource, which has been termed ‘ideographic approach’ (Halbesleben et al., 2014).

Since leaders are an inherent part of employees’ social context at work, we conceptualize TFL as a structural, contextual resource that should be related to reduced burnout due to its positive impact on employees’ thriving at work. While we conceptualize thriving as a volatile, personal resource due to its state-like nature (Spreitzer et al., 2005), we also acknowledge the idea that people utilize resources differently. Consequently, we propose that the effect of TFL on burnout through thriving is moderated by employees’ OTE, which should constitute a key resource that influences the selection and implementation of other resources (Ten Brummelhuis & Bakker, 2012).

### **TFL and burnout**

TFL is conceptualized as encompassing four dimensions - idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Avolio, Waldman, & Yammarino, 1991; Bass & Riggio, 2006), which tap into one higher-order TFL construct (Avolio, Bass, & Jung, 1999). *Idealized influence* can be divided into attributed idealized influence, being the extent to which followers admire their leader, and behavioral idealized influence, being the extent to which leaders’ actions convey their mission and purpose. *Inspirational motivation* signifies the motivation of followers through meaning and optimism, while *intellectual stimulation* occurs when leaders challenge followers’ long-held

assumptions, motivating them to think for themselves and to be creative. Finally, *individualized consideration* signifies the attention leaders pay to followers' needs and concerns.

So far, theory and empirical results are equivocal concerning the impact of TFL on employee burnout (Arnold & Connelly, 2013). On the one hand, theoretical arguments have been made (e.g., Seltzer et al., 1989) that the intellectual stimulation and the high performance expectations inherent in TFL might come at the cost of employees' mental health, resulting in increased burnout. These assumptions rest on the idea of transformational leadership constituting a demand, since it could be argued that subordinates working for a transformational leader might spend longer hours working and might put more energy into their work, resulting in health-impairing stress (Arnold & Connelly, 2013). On the other hand, transformational leaders' focus on employees' individual needs and their association of employees' work with a higher mission and purpose could constitute a resource that protects employees from burning out. This assumption is underpinned by research that consistently links TFL to increased well-being (e.g., Arnold et al., 2007). This theoretical ambiguity is also reflected in empirical research, which finds positive, negative or no effects depending on whether overall TFL/burnout or their dimensions are examined (see Skakon, Nieksen & Borg, 2010 for an overview; e.g., Corrigan et al., 2003; Hetland et al., 2007; Nielsen & Daniels, 2012; Seltzer et al., 1989). To our knowledge, no research has yet examined the processes that explain these inconsistent effects. In line with the previous literature that highlights TFL as a contextual characteristic (see Salancik & Pfeffer, 1978; e.g., Braun et al., 2013), we conceptualize TFL as a structural, contextual resource (Hobfoll, 2001; Ten Brummelhuis & Bakker, 2012) that should extend and influence the pool of resources employees have available (Halbesleben, 2006), especially employee thriving, a volatile personal resource. This resource process should, in turn, explain the negative effect of TFL on burnout. The hypothesized model is depicted in Figure 1.

## **The mediating role of thriving**

Thriving at work has been defined as “the psychological state in which individuals experience both a sense of vitality and a sense of learning at work” (Spreitzer et al., 2005; p. 538), with *vitality* referring to feelings of aliveness and energy and *learning* referring to the acquisition and application of knowledge and skills (Porath, Spreitzer, Gibson, & Garnett, 2012). Thriving has been both theoretically and empirically distinguished from related constructs such as learning goal orientation and flow (Porath et al., 2012; Spreitzer et al., 2005). The proximal work context constituting of decision-making discretion, broad information sharing and climate of trust and respect is considered to be central in facilitating thriving (Spreitzer et al., 2005), which has received preliminary empirical support (Paterson, Luthans, & Jeung, 2013).

The proposition that TFL can be regarded as a contextual facilitator of thriving is in line with COR (Hobfoll, 1989, 2001; Ten Brummelhuis & Bakker, 2012). We argue that TFL as a contextual resource influences the pool of resources that employees have available (see e.g., Halbesleben, 2006), aiding the development of thriving as a volatile, personal resource (see e.g., Gerbasi, Porath, Parker, Spreitzer, & Cross, 2015). Specifically, transformational leaders convey a purposeful vision and motivate their followers to think outside of the box and to challenge long-held assumptions (Bass, 1985). TFL should hence be related to the learning-component of thriving since it offers resources, such as intellectual stimulation and vision that should enable employees to show explorative behaviors. Furthermore, by communicating an inspiring vision and acting as role models (Bass, 1985), transformational leaders should energize their followers, resulting in increased vitality. This is further supported by transformational leaders’ consideration of employees’ individual needs and the use of meaning and optimism to motivate followers (Bass, 1985), which should lead to feelings of aliveness, energy and positive emotions, characteristic of the vitality-component

of thriving and well-known outcomes of TFL (e.g., Bono, Foldes, Vinson, & Muros, 2007). Additionally, TFL has been linked to employees' perception of various work characteristics such as autonomy (Piccolo & Colquitt, 2006) and positive intra-team processes such as climate of support for innovation (Eisenbeiss & van Knippenberg, 2008), which should constitute valuable resources and, in turn, contribute to increased levels of thriving. We hypothesize based on the above argumentation:

*Hypothesis 1:* TFL is positively related to employee thriving.

Spreitzer, Porath and Gibson (2012) propose that the feelings of learning and vitality characteristic of thriving should counteract the development of burnout, which has received empirical support (Porath et al., 2012). In line with COR (Hobfoll, 1989, 2001) and Ten Brummelhuis and Bakker (2012), we consider thriving as a personal energy resource, which should enable employees to more effectively deal with the challenges of their work, resulting in reduced burnout. Thriving constitutes a positive emotional experience which should counteract the resource drain characteristic of burnout. Hence, the vitality and learning associated with thriving should represent resources that enable employees to better cope with the demands that contribute to burnout (e.g., emotional demands and organizational change; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Additionally, employees who thrive should also develop further resources. Namely, employees who experience learning should acquire knowledge and progress in their careers, while energized employees should find it easy to connect with others, leading to various social resources, such as support from colleagues. Taken together, thriving should constitute a resource and be associated with the development of further resources. We therefore propose the following:

*Hypothesis 2:* Thriving is negatively related to employee burnout.

Building on the previous two hypotheses, we argue that TFL exerts a negative effect on burnout because of its positive effect on employee thriving. As discussed before, research

that examines a direct effect is inconclusive and has yet to explore underlying processes of this link (Arnold & Connelly, 2013). We argue here in line with Ten Brummelhuis and Bakker (2012) that TFL as a contextual resource reduces burnout through its positive effect on thriving as a personal resource. The purposeful vision, ability to intellectually stimulate and capacity to consider followers' individual needs related to TFL should lead to thriving in employees. The learning and vitality associated with thriving should, in turn, assist employees in counterbalancing burnout, while the additional resources which employees who thrive create (e.g., social resources) should further reduce burnout. Based on the proposition that thriving explains how TFL relates to burnout, we propose the following:

*Hypothesis 3:* Thriving mediates the negative effect of TFL on employee burnout.

### **The moderating role of employees' OTE**

Contingency theorists argue that the effectiveness of leadership depends, amongst other factors, on the characteristics of employees (e.g., Fiedler, 1964). Indeed, for decades, scholars have discussed the role that followers' attributes, and especially their personality, play in their perception of and reaction to transformational/charismatic leadership (e.g., Klein & House, 1995). Hence, to obtain a better understanding of the relationship between TFL and employee burnout, and to examine whether all employees benefit from TFL equally in regards to reduced burnout, we considered employee personality as a boundary condition. By integrating TFL and employees' characteristics, we are also addressing previous calls for such endeavor (Hetland et al., 2007) and aim to shed light on the inconclusive findings reported in previous studies on TFL and burnout (Arnold & Connelly, 2013).

We focus on OTE, one of the five factors that form the structure of personality (Costa & McCrae, 1992), as OTE is viewed as the personality trait most relevant to learning (e.g., LePine, Colquitt, & Erez, 2000) and is aligned with TFL and thriving in its focus on flourishing and growth. Individuals high on OTE can be described as curious,

creative, imaginative and unconventional and are open to learning and enjoy it, while their counterparts (low OTE) prefer convention and sticking to routine, such as working in '9 to 5 jobs' and on tasks that require little reflection, self-assessment and are highly structured (Duff, Boyle, Dunleavy, & Ferguson, 2004). We here argue, in line with COR and Ten Brummelhuis and Bakker (2012) that OTE constitutes a key resource, which enables a more active and efficient coping style through the facilitated selection and implementation of resources.

Halbesleben and colleagues (2014) state that individuals value resources differently and that this value depends on the fit between the individual and the respective resource (idiographic approach). This is reflected in the conceptualization of key resources (Ten Brummelhuis & Bakker, 2012) as management resources, which determine how individuals select and implement resources, and hence determine their efficient usage. Along these lines, we argue that OTE determines the degree to which employees benefit from, or value, TFL, resulting in increased levels of thriving for employees high on OTE. Namely, transformational leaders intellectually stimulate their followers through vision and meaning and challenge them to think independently, while providing them at the same time with individualized support and assisting them on their individual journeys (Bass, 1985). In addition, TFL focuses strongly on change as opposed to maintaining the status quo (Bass & Riggio, 2006). We propose that these leadership behaviors should be more or less favorably perceived by certain employees (Gooty et al., 2009; Perry et al., 2010), affecting their behavior differently. High OTE employees, who are naturally driven to achieve, enjoy being intellectually stimulated, welcome change, and are enthusiastic about learning (see e.g., Komarraju, et al., 2009), should benefit the most from being supervised by a transformational leader. This resulting fit between the contextual resource of TFL and the natural tendencies of high OTE employees should lead to increased learning and vitality and hence to increased thriving. On the contrary, low OTE employees are less interested in being

intellectually challenged and prefer to follow fixed work routines (Costa & McCrae, 1992). They should hence benefit less from the challenging tasks transformational leaders set and identify less with their inspirational vision. Furthermore, employees low on OTE should also relate less well to their transformational leaders, who are very different from them because they exhibit high levels of OTE (Judge & Bono, 2000). Hence, the contextual resource of TFL should fit the needs of low OTE employees less, not resulting in thriving for these employees. As transformational leaders are however aware of employees' individual needs and consider their individual preferences (Bass, 1985), we do not propose that TFL constitutes a demand or stressor for low OTE employees as it is the case for autocratic leadership and neurotic employees (De Hoogh & Den Hartog, 2009; Perry et al., 2010), but simply that the weaker fit of resources does not result in increased thriving. This proposition is also supported by drawing on Spreitzer and colleagues' (2005) model of thriving at work, according to which individuals carrying certain personality traits are predisposed to thrive more than others. It can be argued, in line with this model, that TFL fulfills the basic psychological needs (Deci & Ryan, 2000) of employees high on OTE (e.g., work independently on challenging task), resulting in thriving, while the needs of low OTE employees (e.g., competence through work on routine tasks) are less satisfied. We therefore hypothesize:

*Hypothesis 4:* OTE moderates the positive relationship between TFL and thriving such that this relationship is stronger when OTE is high compared to low.

### **Moderated mediation**

Building on the rationale above, we hypothesize a moderated mediation model. In line with COR (Hobfoll, 2001) and Ten Brummelhuis and Bakker (2012), key resources such as OTE should moderate the impact of contextual resources, for example TFL, on personal resources, such as thriving, influencing outcome variables (i.e. burnout). This is because key resources and consequently OTE enable a more active and efficient coping style that

facilitates the usage of resources and protects employee health (Hobfoll, 2002). As all of the named resources can be considered to be positive psychological constructs (Cameron et al., 2003) and as they are all aligned in their focus on flourishing and growth, we propose that the indirect effect of TFL on employee burnout through thriving depends on employees' OTE, resulting only in reduced burnout for employees who are high on OTE. We therefore hypothesize:

*Hypothesis 5:* OTE moderates the indirect effect of TFL on employee burnout (through thriving), such that the mediated relationship will be stronger under high compared to low OTE.

## **METHOD**

### **Procedure**

To test our study hypotheses, we conducted a study with two measurement points at an interval of two weeks. Measuring burnout twice while controlling for the initial level of burnout allowed us to reduce the influence of common-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Data for this study was obtained from employees of a midsize paper-box manufacturing company in the South of Germany. Access was obtained through personal contact and the study was conducted after approval by the company's workers' council was granted. As our sample included both office and manufacturing workers, we agreed to use two data collection methods to better meet the needs and availability of each group. Thus, following the recommendation of our contact person, manufacturing workers, who did not have access to a computer during working hours, filled out a paper-and-pencil questionnaire, while office-based employees completed an online version of the questionnaire. The contact person distributed the paper-and pencil questionnaires to all employees who were fluent in German and hence able to understand the questionnaire. At the same time, a link for the online questionnaire was emailed to all office-based employees.

All questionnaires included a cover letter explaining the objectives of the study and assuring employees of the confidentiality of their responses and the voluntary nature of their participation. All questionnaires had to be completed within a week. Paper questionnaires were collected at the end of this period by the first investigator. This process was repeated two weeks later. In order to match participants' responses across the two waves, employees were at both times asked to generate an identifying code. In the first wave of data collection, we included measures of TFL, thriving, burnout, OTE and control variables (neuroticism, negative affect, age, gender). The dependent variable, burnout, was again assessed in the second questionnaire.

### **Participants**

At Time 1, we collected questionnaires from 227 employees, of which 17 had to be excluded due to missing data or identifying code, while at Time 2 six of 193 participating employees were excluded for the same reasons. Matching of the two questionnaires yielded a sample of 148 employees (65% response rate of all participating employees at Time 1). Employees who dropped out after Time 1 did not significantly differ in terms of gender, marital status, tenure and the study variables from those employees who completed both questionnaires (2-tailed t-tests and chi-square tests; 95 % CI). However, the samples were significantly different from each other in regard to age (7 categories ranging from (1) = < 20 years to (7) = > 70 years) and education (4 categories consisting of no vocational training/apprenticeship, vocational training/apprenticeship, polytechnic degree or university degree). Both age and tenure were measured with ordinal scales in order to ensure participants' anonymity and as requested by the organization. In detail, the employees who did not participate at Time 2 were younger (83.9% vs. 75.2% under 50 years) and more educated (74.2% vs. 81.5% had an apprenticeship as their highest educational achievement).

The final sample was predominately male (78%)

and the highest educational achievement of the majority of the participants was a vocational training/apprenticeship (72%), equivalent to a vocational high school degree, while 10% held a lower (no vocational training/apprenticeship) and 18% a higher qualification (advanced technical certificate/ polytechnic degree or university degree). Concerning respondents' age, 1 per cent was less than 20 years old, 14 per cent were between 20 and 30 years, 21 per cent were between 31 and 40 years, 40 per cent were between 41 and 50 years, 22 per cent were between 51 and 60 years, and three per cent were between 61 and 70 years. Concerning tenure, 1 per cent had worked in the company less than 1 year, 10 per cent 1 to 5 years, 20 per cent 6 to 10 years, 32 per cent 11 to 20 years and 38 per cent more than 20 years.

### **Measures**

For all variables except for thriving, we used measures previously translated and validated in German (e.g., Felfe, 2006). The items pertaining to thriving were translated into German by a German bi-lingual academic and back-translated into English by another German bi-lingual academic. The two English versions were then compared by a third bi-lingual academic, and minor rewordings were made to the German items following this comparison (Brislin, 1980).

*Supervisor's TFL* was measured using the 15-item German version (Felfe, 2006) of the Multifactor Leadership Questionnaire Form 5X-Short (MLQ; Bass & Avolio, 1995). This instrument captures the transformational dimensions of attributed and behavioral idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation with three items each. Sample items for the five dimensions are: "My leader displays a sense of power and confidence" (attributed idealized influence); "My leader emphasizes the importance of having a collective sense of mission" (behavioral idealized influence); "My leader talks enthusiastically about what needs to be accomplished" (inspirational motivation); "Gets me to look at problems from many different angles" (intellectual stimulation); and "My

leader spends time teaching and coaching” (individualized consideration). Respondents were asked to answer the items on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The coefficient alpha in this study was .97. Following previous research, the items were averaged to compose an overall measure of TFL.

*Thriving* was measured with the 10-item Thriving at Work Scale (Porath et al., 2011). Sample items are: “I continue to learn more and more as time goes by” (learning); and “I am looking forward to each new day” (vitality). Response options ranged from 1 (*never*) to 7 (*always*). The coefficient alpha in this study was .89.

*Burnout* was measured with the 16-item Oldenburg Burnout Inventory (Demerouti et al., 2003). Sample items are: “Lately, I tend to think less at work and do my job almost mechanically” (disengagement from work); and “During my work, I often feel emotionally drained” (exhaustion). Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The coefficient alpha in this study was .91.

*OTE* was measured with six bipolar adjective pairs from the validated German short version MRS-30 (Schallberger & Venetz, 1999) of the MRS Inventory (Ostendorf, 1990). The MRS-30 assesses the Big Five personality factors with six adjective pairs per factor and has been used in previous research (e.g., Semmer, Tschan, Meier, Facchin, & Jacobshagen, 2010). Respondents were asked to indicate on a 6-point bipolar rating scale (1 and 6 = very much, 2 and 5 = quite, 3 and 4 = rather) which of the two opposing adjectives described them best. As an example, for the adjective pair “uncreative – creative”, respondents who indicated that they were ‘quite creative’ were awarded a 5 for this item, while those indicating they were ‘quite uncreative’ were awarded a 2. One adjective pair (“conventional – original”) was deleted as scale reliability was higher excluding it (Cronbach’s alpha with the item = .67; Cronbach’s alpha without the item = .71).

*Controls.* For a more robust test of our hypotheses we controlled for burnout at Time

1, neuroticism, negative affect and employee occupation (manufacturing vs. office work), as prior research also suggests that these variables are extremely important for burnout (e.g., Iverson et al., 1998; Langelaan et al., 2006). Indeed, all of these were significantly related to burnout at Time 2, and also to thriving. Burnout at Time 1 was assessed with the scale described above ( $\alpha = .87$ ). Neuroticism ( $\alpha = .64$ ) was assessed with five items taken from the MRS-30 (Schallenger & Venetz, 1999) and negative affect ( $\alpha = .79$ ) with six items (shortened version of the PANAS (Watson, Clark, & Tellegen, 1988) as used by Sonnentag, Binnewies & Mojza, 2008). Previously translated and validated German versions were used for all scales (e.g., Krohne, Egloff, Kohlmann, & Tausch, 1996). As age and gender were not significantly related to the outcome variables (thriving, burnout;  $r = -.05 - .02$ ), we did not include these in the analysis (Spector & Brannick, 2011).<sup>1</sup>

### **Data analysis**

First, we performed confirmatory factor analyses (CFAs) to examine the distinctiveness of the four self-rated variables measured at Time 1 (TFL, thriving, burnout, OTE) by testing a series of alternative models. To achieve a good ratio of sample size to number of parameters, we created item-parcels (Kishton & Widaman, 1994) by randomly assigning items from the specific scales/ their dimensions to parcels. We created five parcels for TFL (one per dimension), four for burnout (two per dimension), four for thriving (two per dimension) and two for OTE. This resulted in an improved sample-size-to-parameter ratio ( $N:q = 9.87$ ; Bentler, 1985). The hypothesized model with four distinct but correlated factors was compared with a three-factor model (thriving and burnout combined) and a one-factor

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<sup>1</sup>All analyses were also run with age and gender as control variables, yielding a similar pattern of results as the one reported here. Social support was also included as a control variable (four items;  $\alpha = .83$ ; Caplan, Cobb, French, Harrison, & Pinneau, 1975) due to previous research emphasizing its importance for employee burnout (e.g., Halbesleben, 2006). The obtained findings mirrored the ones reported here, with the notable exception being the non-significance of the effect of TFL on burnout in the mediation and moderated mediation (Table 2 and 3;  $p = .238$  and  $p = .238$ ), indicating that social support negated the effect of TFL likely due to collinearity between the two variables.

model that combined all constructs.

Second, in order to test our hypotheses, we used the PROCESS macro developed by Hayes (2013), which allows estimating simultaneously indirect and moderated effects, and moderated regression analysis. We first ran a mediation model (Process Model 4) and then a moderated mediation model (Process Model 7). To facilitate comparison between estimates, we z-standardized the predictor variables prior to the moderation/moderated mediation analyses.

## RESULTS

The CFAs revealed that the proposed four-factor model showed a good fit to the data ( $\chi^2(81) = 182.2, p < .001, \chi^2/df = 2.25, TLI = .92, CFI = .94, RMSEA = .092$ ), and fit the data better than the three-factor model combining burnout and thriving ( $\chi^2(133) = 431.82, p < .001, \chi^2/df = 3.25, TLI = .80, CFI = .83, RMSEA = .123$ ) and the one-factor model ( $\chi^2(90) = 802.20, p < .001, \chi^2/df = 8.91, TLI = .50, CFI = .57, RMSEA = .231$ ). Taken together, these results speak for the distinctiveness of TFL, thriving, burnout and OTE.

The means, standard deviations and zero-order correlations are presented in Table 1. Table 2 summarizes the results of the Process Model 4 for testing Hypothesis 1 - 3 and Table 3 shows the results of the Process Model 7 testing moderation and moderated mediation (Hypothesis 4 – 5).

[Insert Table 1 about here]

[Insert Table 2 about here]

The results of the test of the direct effects (H1-2) and indirect effect (H3) are depicted in Figure 2. Hypothesis 1 was supported with TFL being positively related to thriving ( $B = .16, SE = .04, p < .001$ ). Thriving, in turn, was negatively related to burnout at Time 2 ( $B = -.14, SE = .05, p < .01$ ), lending support to Hypothesis 2. Bootstrapping results based on 10000 bootstrapping samples showed that the indirect effect of TFL on burnout at

Time 2 through thriving (Hypothesis 3) was significant (indirect effect =  $-.02$ , boot  $SE = .01$ ; 95%, CI  $[-.0575, -.0067]$ ).

Regarding the interaction hypotheses (Hypotheses 4-5, Table 3), the findings showed that the product of TFL and OTE on thriving (Hypothesis 4) was significant ( $B = 0.10$ ,  $SE = .03$ ,  $p < .01$ ; Figure 2). An inspection of the simple slopes revealed that the effect of TFL on thriving was significant when OTE was one  $SD$  deviation above the mean ( $B = .24$ ,  $SE = .05$ ,  $p < .001$ ) and at the mean ( $B = .14$ ,  $SE = .04$ ,  $p < .01$ ), but not significant when OTE was one  $SD$  below the mean ( $B = .04$ ,  $SE = .06$ ,  $p = .552$ ). These findings hence indicate that TFL positively affected thriving when OTE was high as compared to low.

Finally, Hypothesis 5 proposed that the mediation effect of TFL on burnout at Time 2 via thriving would be stronger if OTE was high as compared to low (moderated mediation). Bootstrap analysis revealed that this conditional indirect effect was only significant if OTE was one  $SD$  above the mean ( $B = -.04$ ,  $SE = .02$ ; 95% CI  $[-.0645, -.01121]$ ) and at the mean ( $B = -.02$ ,  $SE = .01$ ; 95 %CI  $[-.0448, -.0055]$ ), but not significant when OTE was one  $SD$  below the mean ( $B = -.00$ ,  $SE = .01$ ; 95% CI  $[-.0302, .0126]$ ). This suggests that the indirect effect of TFL on burnout at Time 2 via thriving was moderated by OTE in such a way that the indirect effect only existed for employees high on OTE, ceasing to exist at low values of OTE.

[Insert Figure 2 about here]

[Insert Table 3 about here]

## **DISCUSSION**

Motivated by the need to find ways to protect employees from burning out in light of aggravated burnout levels (Tsai & Chan, 2011), we examined the effect of various resources in reducing burnout (Hobfoll, 1989). Specifically, based on Ten Brummelhuis and Bakker's

resource taxonomy (2012), we proposed a resource model that considered the joint effect of TFL, thriving and OTE on burnout. Our findings supported our proposed model in so far that TFL at Time 1 was negatively related to burnout at Time 2 and that this effect was, as expected, mediated by employees' thriving at work. Moreover, we found that these relationships were moderated by employees' OTE in such a way that only employees with medium and high level of OTE showed increased thriving and consequently reduced burnout under transformational supervision, while this effect did not hold for employees low on OTE. Based on this moderated mediation, we can conclude that the effect of TFL on employee burnout is contingent on followers' personality (OTE; see also Halbesleben & Buckley, 2004; Perry et al., 2010).

### **Theoretical implications**

Embedded in COR (Hobfoll, 1989, 2001), this study makes an important theoretical contribution by considering the interplay of various resources on burnout. Notably, all resources (TFL, thriving and OTE) are aligned in their focus on employee flourishing, learning and self-determination, which makes our model parsimonious and emphasizes their relevance for burnout. While previous research did not consistently link TFL to reduced burnout (e.g., Seltzer et al., 1989; Nielsen & Daniels, 2012), we found an overall negative effect. Importantly, we methodologically extended previous work by controlling for negative affect and neuroticism as two important predictors of burnout (Iverson et al., 1998; Langelaan et al., 2006) and by separating the predictor (TFL) and outcome (burnout) time-wise, which increases our confidence in the obtained findings.

Furthermore, we revealed employee thriving as a mediator of the TFL-burnout link, which expands theory by showing that thriving as characterized by learning and vitality is amongst the mechanisms through which TFL exerts its influence (e.g., work characteristics mediate the link between TFL and well-being; Arnold et al., 2007) and through

highlighting the importance of positive psychological states as resources that offset burnout (Hobfoll, 1989). Lastly, we shed light on the boundary conditions of the TFL-burnout link and showed that the burnout-reducing effect of TFL depends on followers' personality (i.e. OTE). By drawing on COR (Hobfoll, 1989, 2001) and its extension by Ten Brummelhuis and Bakker (2012), we revealed that TFL, while not constituting a demand/stressor, only constitutes a strong resource for those employees medium or high on OTE, only affecting their thriving and, in turn, their burnout. Hence, we contribute to a more follower-focused approach to leadership (e.g., Perry et al., 2010), as followers' perception of and reactions to leadership (and their use of resources) depend on their attributes and personality (Halbesleben & Buckley, 2004).

### **Practical implications**

The financial importance of burnout for organizations cannot be overestimated (Maslach, Schaufeli & Leiter, 2001). This research contributes to practice through revealing TFL as a pathway to reducing employees' risk of burnout and its associated negative individual and organizational consequences such as reduced physical health (Burke et al., 1996). Following from this, appropriate ways to mitigate employees' experience of burnout are TFL trainings (e.g., Dvir et al., 2002), an evaluation of supervisors' TFL in the annual developmental assessment or 360-degree feedback (see Piccolo & Colquitt, 2006) and possibly considering the use of instruments such as the MLQ (Bass & Avolio, 1995) as tools in leader selection. By ensuring that leaders express TFL behaviors, organizations are better able to protect employees' mental health in times of long working hours and increased job stress.

Furthermore, this study showed that TFL was positively related to employee thriving at work. Therefore, beyond negatively affecting employees' burnout, the methods suggested above to enhance TFL behaviors in organizations should also increase employees' vitality and

learning, which might be especially relevant in companies where creative performance is essential for organizational success (e.g., R&D or marketing). This implication is strengthened by research that has linked thriving to increased individual health and innovation (Porath et al., 2012).

We also revealed in this study that only employees with medium and high levels of OTE (+1 SD) benefited from TFL in terms of enhanced thriving and reduced burnout, while the thriving and burnout of followers low on OTE were not affected. Recent empirical findings showed that individuals from Europe and America are relatively high on OTE (Schmitt, Allik, McCrae, & Benet-Martinez, 2007), whereas East Asians are comparatively low on OTE. These findings therefore imply that TFL might be more relevant for burnout in the former countries due to the higher percentage of employees with medium and high levels of OTE. It is however important to emphasize that while this study found no positive effects of TFL on burnout for low OTE employees, no adverse effects were discovered and should hence be expected either. While transformational leaders should naturally be aware of their employees' needs (individualized consideration; Bass, 1985) and hence not overwhelm low OTE followers with extremely challenging tasks, transformational leaders might have to be made aware in leadership trainings how to best manage low OTE employees in order to significantly increase their thriving and reduce their burnout. While this question needs to be explored in future research, as followers low on OTE prefer prevention-focused goals (Vaughn, Baumann, & Klemann, 2008), transformational leaders might yield the best effects if they emphasize security and safety when sharing their vision (Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001). Similarly, as employees low on OTE prefer to work on routine tasks that are less challenging (Costa & McCrae, 1992), transformational leaders should take their work preferences into account when allocating tasks. From a different angle, since recent research has shown that OTE can be increased

through interventions (Jackson, Hill, Payne, Roberts, & Stine-Morrow, 2012), transformational leaders could try to increase employees' OTE through setting them gradually more challenging tasks, while making sure that employees do not feel overwhelmed. Taken together, organizations should benefit from these implications through having a mentally healthy and knowledgeable workforce that is also highly engaged and performs well (Aryee, Walumbwa, Zhou, & Hartnell, 2012).

### **Limitations and strengths**

A key limitation of this study is its reliance on self-reports, making our findings vulnerable to single source bias (Podsakoff et al., 2003). However, previous research emphasized the lack of difference between self and other-ratings of leadership (Eagly, Johnassen-Schmidt, & Van Engen, 2003; but for a counterpoint see e.g., Day, Fleenor, Atwater, Sturm & McKee, 2014) and relied on followers' perceptions as the best source for ratings of their own burnout (e.g., De Hoogh & Den Hartog, 2009). Importantly, single source variance is unlikely to influence interactions (Aiken & West, 1991) and the temporal separation of predictors (TFL, thriving) and burnout, the outcome variable, while controlling for burnout at Time 1, also strengthens our confidence in the mediation results we uncovered. It might also be pointed out that because burnout is by definition the result of prolonged stress (Ganster & Schaubroeck, 1991), the two weeks' time lag in our study might not have been long enough to observe changes. We however note that our choice was guided by previous recommendations (Van Dierendonck, Haynes, Borrill & Stride, 2004), and recent findings that show the methodological superiority of shorter over longer time lags further supports our decision (Dormann & Griffin, 2015). Furthermore, recent evidence shows that burnout varies from day to day (Halbesleben & Wheeler, 2011), implying that changes should be observable over short time frames. Our research can also be criticized because the correlation between thriving and burnout at Time 1 and Time 2 was rather high ( $r = -.75$ ). However, this finding is

in line with previous research (Porath et al., 2012) and our CFA of the measurement model showed that the model that considered thriving and burnout to be distinctive constructs had a better fit than the model that merged both factors into one.

Moreover, although large groups of employees shared the same supervisor, we were not able to collect information on group composition, and could therefore not account for variance due to team membership. Nevertheless, the small number of different supervisors in the company would have deemed it unviable to conduct multi-level analysis, which requires the number of teams that share the same supervisor to exceed 30 (Hox, 2010).

Additionally, burnout has been shown to accumulate over time (Maslach et al., 2001). As we did not collect longitudinal data, it cannot be excluded that the continuous pressures for high performance imposed by transformational leaders (Bass, 1985) on employees who are not particularly keen on developing their range of skills and knowledge (low OTE), might prove to be too depleting, leading to burnout in the long run (COR; Hobfoll, 1989, 2001). We consider this however to be rather unlikely, as the health-promoting effects of TFL on, for example well-being and physical health, are well-established (Arnold et al., 2007; Zwingmann et al., 2013). Lastly, our research is limited in its generalizability to other industries and countries, as all data stemmed from one sample from one company. However, as most of the research on TFL and psychological health is conducted in the care sector (e.g., Arnold et al., 2007), our study actually represents an interesting addition to this stream of research. Hence, replications of our study in other contexts than care and manufacturing and other countries would reinforce our confidence in the generalizability of the results.

The aforementioned limitations are counterbalanced by a number of conceptual and methodological strengths. From a conceptual perspective, by combining COR, a well-established stress theory (Hobfoll, 1989, 2001), with Ten Brummelhuis and Bakker's resource taxonomy (2012), we offer a model that

takes contextual, personal and key resources into account to explain how various variables interact to offset burnout. Importantly, since the choice of resources was informed by their common focus on flourishing and learning, we offer a parsimonious model to explain burnout. This approach enabled us to examine the TFL-burnout link from a new perspective, leading to the uncovering of a novel underlying mechanism (thriving) and boundary condition (OTE). While OTE as a moderator emphasizes that the effects of TFL are in the eye of the beholder (Gooty et al., 2009), it also highlights an aspect of the definition of resources (Halbesleben et al., 2014), namely that the value of a resource (TFL) depends on whether it enables individuals to achieve their goals, highlighting the importance of an idiographic approach to resources (Halbesleben et al., 2014).

From a methodological point of view, a key strength lies in the research design used, as we captured predictor and outcome variables at separate points in time while controlling for the initial level of burnout. Additionally, we controlled for the influence of other well-known predictors of burnout (negative affect and neuroticism), strengthening our confidence in our findings and reducing the potential impact of common method variance (Podsakoff et al., 2003).

### **Suggestions for future research**

Firstly, while we revealed thriving as an underlying mechanism of the TFL-burnout link and invite future research to replicate this finding, future studies should also examine other potential mediators in order to increase the understanding of this important relationship. In this way, research that draws on COR (Hobfoll, 1989, 2001) and Ten Brummelhuis and Bakker's resource taxonomy (2012) might want to explore a variety of other personal resources, such as the acquisition of knowledge and skills or positive mood. Additionally, while this study highlights the importance of employees' OTE in shaping the effect that TFL has on their burnout, future research should continue to examine theory-derived contingencies

that shape this link. Key resources, such as learning goal orientation and self-efficacy, might influence whether TFL constitutes a contextual resource (e.g., Gong, Huang, & Farh, 2009), affecting employee burnout.

Secondly, although we defend that individuals are in the best position to provide information regarding their experience of burnout, future research should try to avoid issues associated with self-ratings (i.e. single source bias; Podsakoff et al., 2003) by also assessing employees' burnout through ratings of colleagues or family-members (e.g., Sandvik, Diener, & Seidlitz, 1993). Additionally, as employees nowadays often work in teams and share the same supervisor, future research should examine the effect of groups' shared perceptions of TFL on employee burnout (e.g., Nielsen & Daniels, 2012) and account for the biasing impact of variance due to team membership on the findings (Preacher, Zyphur, & Zhang, 2010).

Thirdly, while our study extends previous research on TFL and burnout through the time-wise separation of predictors and outcome, it is conceivable that both variables exist in a feedback loop (see e.g., Van Dierendonck et al., 2004) and multiple measurements of all variables would hence be necessary to exclude reverse causality (Cook & Campbell, 1979). To better understand the dynamics of this relationship and in order to test theoretical assumptions of gain spirals (i.e. resources reinforce each other), one of the main tenets of COR (Hobfoll, 2001), future research might want to adopt a diary study design (see e.g., Halbesleben & Wheeler, 2015).

Lastly, as research that examined TFL across multiple countries found that cultural dimensions influence its effects (e.g., Zwingmann et al., 2014), future research is strongly needed that replicates our findings across various countries to determine their reach. In a similar way, as mean levels of OTE have been shown to vary across countries and as it has been argued that OTE has a different function in collectivist nations (Hofstede, 2001; Schmitt

et al., 2007), it would be worthwhile to investigate the effect of OTE on the TFL-burnout link in various countries.

## **Conclusion**

Taken together, the findings of this study suggest that employee thriving, as characterized by learning and vitality, explains the negative effect of TFL on employee burnout. This study however also highlights that only employees with medium and high levels of OTE benefit from TFL with regard to reduced burnout (moderated mediation). As this research hence shows that individuals value resources such as TFL differently, we suggest that future leadership research should take a more follower-centered approach when investigating the effects of leadership on employee outcomes.

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## Tables

Table 1

*Means, standard deviations, internal reliabilities and bivariate correlations*

<i>Variable</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Burnout Time 1	2.32	.53	.87							
2. Neuroticism	2.59	.77	.34**	.64						
3. Negative affect	1.73	.61	.47**	.36**	.79					
4. Occupation	.40	.49	-.31**	-.43**	-.22**					
5. TFL	3.01	1.05	-.43**	.01	-.22**	.18*	.97			
6. Thriving	3.41	.77	-.75**	-.34**	-.32**	.45**	.50**	.89		
7. OTE	4.25	.62	.01	-.21*	-.10	-.34**	-.06	.01	.71	
8. Burnout Time 2	2.25	.54	.82**	.29**	.36**	-.42**	-.49**	-.75**	.04	.91

*Note.*  $n = 148$ . Internal reliabilities are reported along the diagonal. TFL = Transformational leadership. OTE = Openness to experience. Occupation: 0 = manufacturing workers, 1 = office-based workers. Correlations  $\geq 0.18$  are significant with  $p > .05$ ; correlations  $\geq 0.22$  are significant with  $p > .01$ .

Table 2

*Hierarchical Regression Results for Thriving as a Mediator of the Effect of Transformational Leadership on Burnout at Time 2 (Hypotheses 1-3)*

<i>Variable</i>	<u>Thriving</u>				<u>Burnout Time 2</u>			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Constant	4.85	.29	16.81	.000	1.66	.30	5.55	.000
TFL	.16	.04	3.85	.000	-.06	.03	-2.20	.030
Burnout Time 1	-.88	.09	-9.52	.000	.60	.07	8.44	.000
Neuroticism	-.07	.06	-1.20	.232	-.02	.04	-.62	.537
Negative Affect	.11	.07	1.44	.151	-.02	.05	-.52	.603
Occupation	.34	.09	3.78	.000	-.15	.06	-2.72	.008
Thriving					-.14	.05	-2.82	.006
Direct effect TFL on Burnout Time 2								
<i>Effect</i>		<i>SE</i>		<i>t</i>			<i>p</i>	
-.06		.03		-2.20			.030	
Bootstrap results for indirect effect TFL on Burnout Time 2 via Thriving								
<i>Effect</i>		<i>Boot SE</i>		<i>Boot LL 95% CI</i>		<i>Boot UL 95% CI</i>		
-.02		.01		-.0575		-.0067		

*Note.*  $n = 148$ . Unstandardized regression coefficients are reported. Bootstrap sample size = 10,000. *LL* = lower limit; *CI* = confidence interval; *UL* = upper limit. TFL = Transformational leadership. Occupation: 0 = manufacturing workers, 1 = office-based workers.

Table 3

*Hierarchical Regression Results for the Moderated Mediation of Thriving between Transformational Leadership and Burnout at Time 2 at high, medium and low Values of the Moderator Openness to Experience*

Variable	<u>Thriving</u>				<u>Burnout</u>			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Constant	5.16	.24	21.60	.000	1.49	.30	4.91	.000
TFL	.14	.04	3.28	.001	-.06	.03	-2.20	.030
Burnout at Time 1	-.89	.09	-9.94	.000	.60	.07	.844	.000
Neuroticism	-.02	.06	-.36	.721	-.02	.04	-.62	.537
Negative Affect	.11	.07	1.59	.114	-.02	.05	-.52	.60
Occupation	.44	.10	4.49	.000	-.15	.06	-2.71	.008
OTE	.09	.04	2.15	.033				
TFL X OTE	.10	.03	2.88	.005				
Thriving					-.14	.05	-2.82	.006

Bootstrap results for the conditional indirect effect of TFL on Thriving at OTE =  $M \pm 1SD$

	<i>Effect</i>	<i>SE</i>	<i>t</i>	<i>p</i>
- 1 <i>SD</i> (-1.00)	.04	.06	.60	.552
<i>M</i> (0.00)	.14	.04	3.28	.001
+ 1 <i>SD</i> (1.00)	.24	.05	4.86	.000

Bootstrap results for conditional indirect effect of TFL on Burnout Time 2 via Thriving at OTE =  $M \pm 1SD$

	<i>Effect</i>	<i>Boot SE</i>	<i>Boot LL 95% CI</i>	<i>Boot UL 95% CI</i>
- 1 <i>SD</i> (-1.00)	-.00	.01	-.0302	.0126
<i>M</i> (0.00)	-.02	.01	-.0448	-.0055
+ 1 <i>SD</i> (1.00)	-.04	.02	-.0645	-.0121

*Note.*  $n = 148$ . Standardized regression coefficients are reported for TFL, OTE and TFL x OTE only. Bootstrap sample size = 10,000. *LL* = lower limit; *CI* = confidence interval; *UL* = upper limit. TFL = Transformational leadership. OTE = Openness to experience. Occupation: 0 = manufacturing workers, 1 = office-based workers.

## Figures

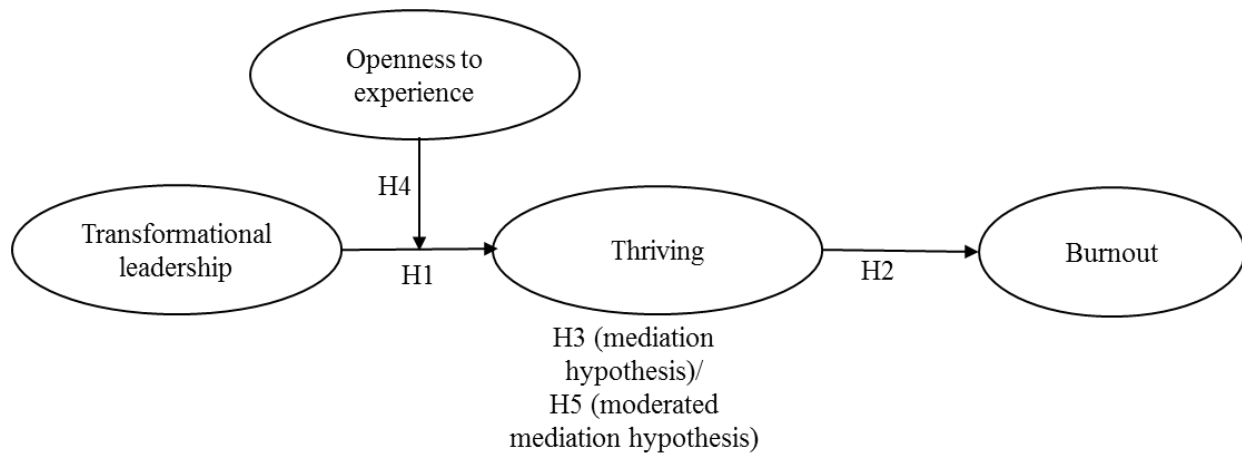


Figure 1. Hypothesized theoretical model.

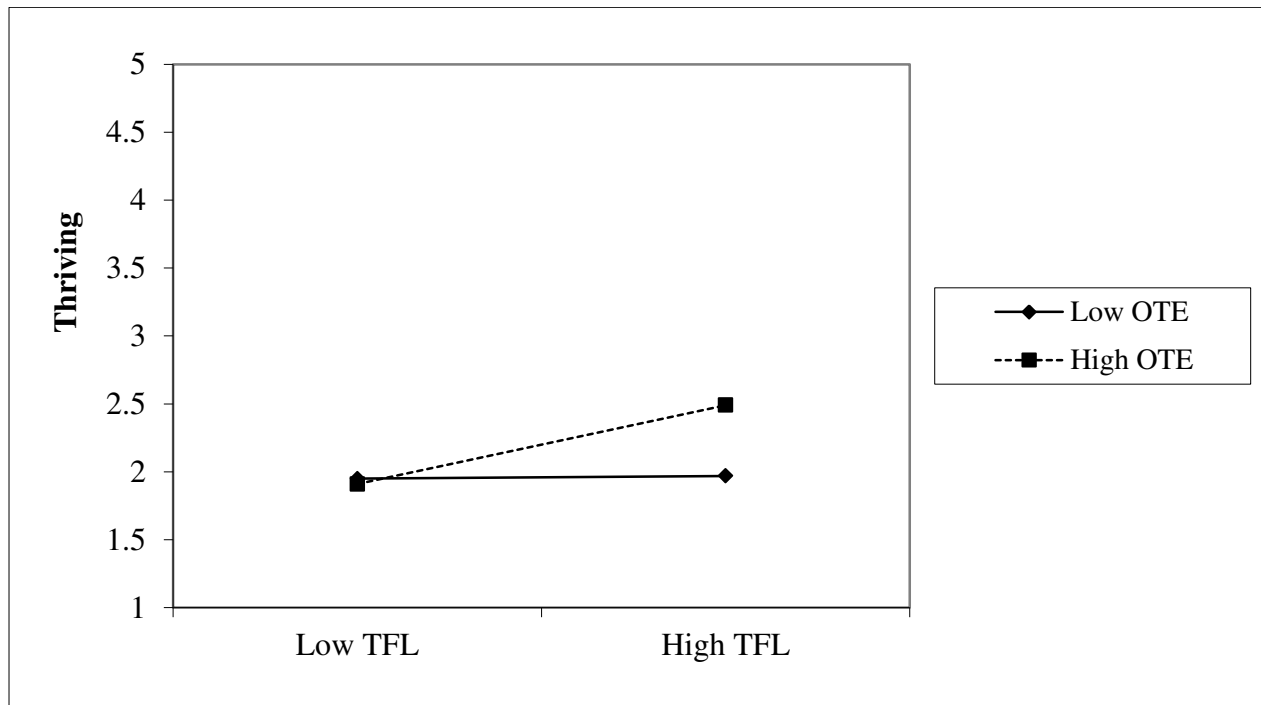


Figure 2. Interaction between transformational leadership (TFL) and openness to experience (OTE) in predicting thriving.