

Abstract

This study examines the role of mindfulness in work-settings. In particular, it was hypothesized that the satisfaction of basic needs (competence, autonomy, relatedness) and intrinsic motivation mediate the relationship between mindfulness and both job satisfaction and job performance (in-role, extra-role). It was also explored how ethical leadership influences these relationships. The predictions were tested in a cross-sectional study among 431 employees in various Dutch sectors. The results revealed that the three needs and intrinsic motivation mediated the relationship between mindfulness / ethical leadership and job satisfaction as expected. Different results were found for both aspects of job performance though. Only competence and autonomy mediated the link between mindfulness / ethical leadership and in-role performance. For extra-role performance, mediation was confirmed for all three needs and intrinsic motivation in the relationship between mindfulness / ethical leadership and extra-role performance. No confirmation was found for ethical leadership as a moderator in the relationship between mindfulness and need fulfilment (competence, autonomy, relatedness). Overall, this study contributes to our understanding of the role of mindfulness in work settings by examining the underlying constructs that explain the link between mindfulness and work-related outcomes. It also contributes to our understanding of how an interpersonal context in terms of ethical leadership influences these relationships.

Keywords: mindfulness, self-determination theory, basic need fulfillment, intrinsic motivation, work-related outcomes, ethical leadership

Introduction

*“The best way to capture moments is to pay attention. This is how we cultivate mindfulness.
Mindfulness means being awake. It means knowing what you are doing.”*

— Jon Kabat-Zinn

This quote by the American scientist Jon Kabat-Zinn (1994) illustrates what the concept of mindfulness is about. Mindfulness is the nonjudgmental, open awareness of one’s moment-by-moment experience (Kabat-Zinn, 2003). In the past decades, mindfulness was shown to have physical, psychological and performance benefits in diverse settings, which increased researchers’ attention to mindfulness (Glomb, Duffy, Bono, & Yan, 2011; Williams & Kabat-Zinn, 2011). Still, less empirical research has focused on a potential link between mindfulness and work-related outcomes (Dane, 2010; Dane & Brummel, 2013; Gärtner, 2013; Hülshager, Alberts, Feinholdt, & Lang, 2012; Shao & Skarlicki, 2009), emphasizing the necessity to investigate the role of mindfulness in work settings.

Here, the focus will be on two work-related outcomes that have been associated with mindfulness before: job satisfaction and job performance (Dane & Brummel, 2013). Job satisfaction is the positive (satisfaction) or negative (dissatisfaction) evaluative judgment of a person’s job and/or work situation (Boselie, 2010; Hülshager et al., 2012; Weiss, 2002). Job performance captures both in-role performance and extra-role performance (Sonnentag & Frese, 2002; Sonnentag, Volmer, & Spsychala, 2008). In-role performance concerns all work behaviors that are prescribed by formal job roles, whereas extra-role performance concerns those work behaviors that go beyond formal job roles (Hui, Law, & Chen, 1999). Based on previous suggestions (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Dane, 2010; Dane & Brummel, 2013; Glomb et al., 2011; Hülshager et al., 2012; Shao & Skarlicki, 2009), a positive relationship between mindfulness and both job satisfaction and job performance is assumed. Still, less knowledge is available on the underlying process driving these outcomes (Hülshager et al., 2012; Shao & Skarlicki, 2009). A theory that could explain this process is self-determination theory (Deci & Ryan, 1985), which focuses on motivational processes.

Self-determination theory (SDT) is a macro-theory of human motivation. The assumption is that all individuals have three basic psychological needs: competence, autonomy and relatedness (Deci & Ryan, 2000; Hodgins & Knee, 2002; Ryan, 2009; Ryan & Deci, 2000; Ryan & Deci, 2008). Basic need fulfillment is achieved via open awareness.

Open awareness guides individuals to choose behavior(s) in line with their personal needs (Brown & Ryan, 2003). Since mindfulness is characterized by open awareness as well (Brown & Ryan, 2003; Brown et al., 2007; Hodgins & Knee, 2002; Weinstein & Ryan, 2011), it is likely that mindfulness stimulates the satisfaction of basic needs through open awareness. Basic need fulfillment will then enhance intrinsic motivation (Gagné & Deci, 2005; Ilardi, Leone, Kasser, & Ryan, 1993). Intrinsic motivation can be described as doing an activity for the inherent satisfaction of or interest in the activity itself (pleasure, enjoyment) (Niemic, Ryan, & Brown, 2008; Ryan & Deci, 2000). As such, intrinsic motivation is suggested to result in positive work outcomes, like job satisfaction and job performance (Gagné & Deci, 2005; Ilardi et al., 1993). In short, it can be expected that mindfulness supports need fulfillment, which enhances intrinsic motivation. In turn, intrinsic motivation will stimulate job satisfaction and job performance. In this way, SDT has been conceptually linked to mindfulness before, but this was not empirically tested yet (Glomb et al., 2011; Niemic et al., 2008). Hence, the added value of this research is to empirically test the association between mindfulness, SDT and work-related outcomes.

Additionally, it has been suggested that contextual elements in the workplace, like leadership, are important for need satisfaction as well (Deci & Ryan, 2000; Deci et al., 2001; Gagné & Deci, 2005; Ilardi et al., 1993; Weinstein & Ryan, 2011). Transformational leadership for example has been positively linked to need fulfillment and work-related outcomes before (Kovjanic, Schuh, Jonas, Van Quaquebeke, & Van Dick, 2012). In the current study the focus will be on ethical leadership though, because ethical leadership “is thought to be uniquely important because of the impact leaders may have on the conduct of (others in) the organization and ultimately on organizational performance” (De Hoogh & Den Hartog, 2008, p. 297). Ethical leaders are attractive, credible and legitimate role models of appropriate behavior (Brown, Treviño, & Harrison, 2005), because they are people-oriented and fair, share their power, and communicate in a transparent and open manner (De Hoogh & Den Hartog, 2008; Kalshoven, Den Hartog, & De Hoogh, 2011). As such, ethical leaders are more likely to recognize the needs of their employees. It can therefore be expected that having an ethical leader results in greater need fulfillment (Deci et al., 2001; Reb, Narayanan, & Chaturvedi, 2014; Zhu, May, & Avolio, 2004). In line with SDT, need satisfaction will then again stimulate job satisfaction and job performance through intrinsic motivation (Gagné & Deci, 2005; Ilardi et al., 1993). Ethical leadership could also be considered as a condition under which mindfulness is likely to be beneficial. That is because, due to their strong focus on personal needs (Kalshoven et al., 2011), ethical leaders could support the extent to which

mindful employees are able to fulfill their needs. This could provide new knowledge on how ethical leadership influences the relationships between mindfulness, need satisfaction, and work-related outcomes.

In short, the aim of this study is to investigate the role of mindfulness in work settings by focusing on two broad, work-related domains: job satisfaction and job performance. Self-determination theory (SDT) will be used to outline the underlying processes. Additionally, it will be clarified how ethical leadership, as a contextual factor, influences the relationships between mindfulness, need fulfillment and work-related outcomes. As empirical research on the role of mindfulness in work settings is lacking, the results of this research could be valuable for both the existing literature (new insights) and organizations (practical implications). The following research question will be answered:

“To what extent do need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediate the relationship between mindfulness and both job satisfaction and job performance (in-role, extra-role)? And how does ethical leadership influence these relationships?”

Theoretical framework

Mindfulness

From a historical point of view, mindfulness is “the fundamental attentional stance underlying all streams of Buddhist meditative practice” (Kabat-Zinn, 2003, p. 146). It is the basis of Buddhist tradition and focuses on deepening conscious awareness of the present moment (Glomb et al., 2011). From this point of view, it is assumed that an untrained mind can directly contribute to human suffering, and that meditative practices help to train the mind to alter this suffering (Kabat-Zinn, 2003). A shift of mindfulness into Western society took place when Jon Kabat-Zinn introduced his Mindfulness-Based Stress Reduction (MBSR) training in 1979 (Brandsma, 2010). This intervention was used to test the effectiveness of intensive meditative tools on medical patients’ stress, pain, and illness (Kabat-Zinn, 2003; Shapiro, Carlson, Astin, & Freedman, 2006). With success, as today many people experience the health benefits of MBSR in (non)clinical settings worldwide (Glomb et al., 2011; Williams & Kabat-Zinn, 2011).

From this Western perspective, mindfulness is more than meditation only (Shapiro et al., 2006). Kabat-Zinn (2003) describes mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (p. 145). Mindfulness concerns an open awareness towards experiences in the present rather than the past or the future, indicating a present-oriented consciousness. Mindful individuals only observe their experiences; they do not judge, reflect, evaluate or analyze. So, mindfulness is the nonjudgmental, open awareness of present moment reality and experiences, both internal (thoughts, bodily sensations) and external (physical and social environment). Mindfulness is not only a human capacity, varying in strength across situations (state) and across individuals (trait), but it can also be developed over time (Baer, 2003; Brown & Ryan, 2003; Brown et al., 2007; Dane, 2010; Glomb et al., 2011; Hülshager et al., 2013). Mindfulness as a trait means that some individuals have a general tendency to be more mindful than others; mindfulness differs *between* individuals. As such, the extent to which individuals are mindful in daily life is considered to be part of someone’s character. At the same time, mindfulness can be seen as a psychological state varying from moment to moment and across situations; it differs *within* individuals (Brown & Ryan, 2003; Brown et al., 2007; Dane, 2010; Dane & Brummel, 2013; Glomb et al., 2011; Hülshager et al., 2013; Shapiro et al., 2006). Additionally, the capacity of being mindful is

learnable. Individuals are able to develop mindfulness skills through training, which will enlarge the probability of experiencing states of mindfulness in the future (Baer, 2003). In essence, all (un)trained individuals have the ability to experience mindfulness at least at one point in their lives (Kabat-Zinn, 1994; Ruedy & Schweitzer, 2010). So, the three perspectives on mindfulness are mindfulness as a trait, a state or a learnable skill. To narrow our view, the current study will focus on mindfulness as a trait or personal characteristic only.

Although mindfulness has been researched in diverse (non)clinical settings before (Glomb et al., 2011; Williams & Kabat-Zinn, 2011), work settings are still underexposed. Consequently, clear empirical evidence concerning the role of mindfulness in work settings is lacking (Dane, 2010; Dane & Brummel, 2013; Hülshager et al., 2012; Shao & Skarlicki, 2009). The focus will therefore be on mindfulness and work-related outcomes.

Mindfulness and work-related outcomes

The concept of mindfulness has been related to work-related outcomes before. In prior research, a positive connection between mindfulness and both job satisfaction and job performance has been suggested (Brown & Ryan, 2003; Brown et al., 2007; Dane, 2010; Dane & Brummel, 2013; Glomb et al., 2011; Hülshager et al., 2012; Shao & Skarlicki, 2009). Therefore, a positive relationship between mindfulness and both job satisfaction and job performance will be assumed here too. Still, insight in the underlying processes explaining these assumed relationships is lacking (Hülshager et al., 2012; Shao & Skarlicki, 2009). One way to gain this insight is by focusing on motivational processes. Before elaborating on such processes, the concepts of job satisfaction and job performance will be outlined first.

Job satisfaction is a dimension of employee well-being and is specifically targeted at the job (Van de Voorde, 2009; Van de Voorde, Paauwe, & Van Veldhoven, 2012). Spector (1997) simply describes job satisfaction as “the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs” (p. 2). A more formal description of job satisfaction is the positive or negative evaluative judgment of an employee’s job and/or work situation. Stated differently, an employee’s opinions about the job guides the positive or negative feelings towards the work in general (Boselie, 2010; Hülshager et al., 2012; Weiss, 2002).

Job performance is a multi-dimensional concept. Here, a distinction will be made between in-role and extra-role performance (Sonnentag & Frese, 2002; Sonnentag et al., 2008). In-role performance captures all work-related behaviors prescribed by formal job roles whereas extra-role performance captures all work behaviors that go beyond formal job roles (Hui et al., 1999). More specifically, in-role performance concerns all activities that

(in)directly contribute to the core business of the organization; all activities that are part of the employer-employee contract. These activities vary between jobs, are role-prescribed and therefore related to employees' ability. In contrast, extra-role behaviors do not directly contribute to the organizational core, but support the broader organizational, social and psychological environment. Such activities are quite similar across job, less role-prescribed and really depend on one's personality and motivation (Borman & Motowidlo, 1997; Goodman & Svyantek, 1999; Motowidlo & Van Scotter, 1994; Sonnentag & Frese, 2002; Sonnentag et al., 2008). According to Boselie (2010), extra-role performance occurs when employees have the "willingness to put extra effort in their job without additional rewards or payment" (p. 86).

Mindfulness and self-determination theory (SDT)

As mentioned in the previous section, motivational processes could explain the assumed positive relationship between mindfulness and both job satisfaction and job performance. Self-determination theory covers such motivational processes and will therefore be central in this section. Self-determination theory (SDT) is a macro-theory of human motivation. It focuses on people as active organisms with inherent growth tendencies and innate psychological needs (Ryan, 2009; Ryan & Deci, 2000; Ryan & Deci, 2008). These basic psychological needs are competence, autonomy and relatedness (Deci & Ryan, 2000; Hodgins & Knee, 2002). Competence concerns the need to feel effective and skillful in activities, and the ability to influence both internal and external environments in desirable ways. Autonomy is the need to experience choice, willingness and control over one's own actions and behavior. Relatedness is the need to feel closeness, connectedness, respect, care and reliance with others (Deci et al., 2001; Ryan, Huta, & Deci, 2008; Weinstein & Ryan, 2011). All individuals will try to fulfill these basic needs, as basic need fulfillment is necessary for optimal development and functioning (Weinstein & Ryan, 2011). This could benefit both individuals and organizations in terms of optimal psychological growth, integrity, happiness and personal well-being for individuals, and more effective functioning, better performance, greater job satisfaction and general well-being within organizations (Deci et al., 2001; Ilardi et al., 1993; Ryan, 2009; Ryan et al., 2008). To create such benefits, it is necessary to understand how basic need fulfillment can be achieved.

Basic need fulfillment is achieved via open awareness. Open awareness implies that individuals are able to choose behavior(s) consistent with their personal needs (Brown & Ryan, 2003). Mindfulness is characterized by open awareness as well. This indicates that

mindful individuals are more aware of what is actually occurring in the present and will cope differently with their emotions. They will also be more aware of and closer related to their personal needs, which gives them a better ability to make meaningful choices in line with these needs (Brown & Ryan, 2003; Brown et al., 2007; Hodgins & Knee, 2002; Ryan & Deci, 2008; Ryan et al., 2008; Weinstein & Ryan, 2011). Thus, it can be argued that mindfulness stimulates satisfaction of basic needs through mindfulness.

Consequently, basic need fulfillment will enhance intrinsic motivation (Gagné & Deci, 2005; Ilardi et al., 1993). Intrinsic motivation concerns doing an activity for the inherent satisfaction of or interest in the activity itself (i.e. pleasure or enjoyment). It is an inner resource and supports the development of skills and competencies (Niemiec et al., 2008; Ryan & Deci, 2000). Within SDT, intrinsic motivation is considered to be a predictor of job satisfaction and job performance (Deci & Ryan, 2008). As such, intrinsic motivation functions as the underlying principle in explaining how need fulfillment results in job satisfaction and job performance (Niemiec et al., 2008).

In short, it is argued that mindfulness supports basic need fulfillment through open awareness. In turn, satisfaction of basic needs will enhance intrinsic motivation, which results in job satisfaction and job performance. Thus can be expected:

Hypothesis 1a: Need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediate the assumed positive relationship between mindfulness and job satisfaction

Hypothesis 1b: Need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediate the assumed positive relationship between mindfulness and job performance (in-role, extra-role)

The role of ethical leadership

Research has shown that contextual elements in the workplace, like leadership, play an important role in need fulfillment as well (Deci & Ryan, 2000; Deci et al., 2001; Gagné & Deci, 2005; Ilardi et al., 1993; Weinstein & Ryan, 2011). Here, the focus will be on ethical leadership because ethical leaders are expected to better recognize the needs of their employees, which will support need fulfillment (Deci et al., 2001; Reb et al., 2014; Zhu et al., 2014). Ethical leaders are considered to be attractive, credible and legitimate role models of appropriate behavior (Brown et al., 2005), due to characteristics such as people-orientation,

power sharing, fairness, and role clarification (De Hoogh & Den Hartog, 2008).

People-orientation captures the care and concern ethical leaders show for their employees and their needs (De Hoogh & Den Hartog, 2008; Kalshoven et al., 2011). Ethical leaders thus create interpersonal contexts characterized by a sense of security and relatedness (Ryan & Deci, 2000). Also, employees have the ability to develop a high quality relationship with their ethical leader (Deci et al., 2001; Reb et al., 2014). Therefore, it is likely that ethical leaders contribute to satisfaction of the need for relatedness. Power sharing implies that employees with an ethical leader can take part in decision-making and can share their ideas and concerns; they have voice (De Hoogh & Den Hartog, 2008; Kalshoven et al., 2011). As such, ethical leaders support employee autonomy and empowerment (Deci et al., 2001; Zhu et al., 2004), indicating that ethical leaders support the need for autonomy. Fairness means that ethical leaders treat others fairly and act with integrity. Role clarification indicates that ethical leaders are transparent and communicate in an open manner (De Hoogh & Den Hartog, 2008; Kalshoven et al., 2011). These two characteristics imply that ethical leaders create a climate of trust, respect and clarity. Hereby, employees know what is expected from them, which results in fewer misunderstandings. Consequently, employees will experience higher feelings of competence. Additionally, ethical leaders will place employees in positions where they experience work role fit and a sense of meaning, and where growth and confidence are facilitated (Zhu et al., 2004). This contributes to satisfaction of the need for competence as well. Thus, ethical leaders too will contribute to need fulfillment of their employees.

Again, need satisfaction will enhance intrinsic motivation and thereby improve job satisfaction and job performance (SDT, Gagné & Deci, 2005; Ilardi et al., 1993). So, employees with an ethical leader are likely to fulfill their needs, which will enhance intrinsic motivation. In turn, job satisfaction and job performance will improve. Thus can be expected:

Hypothesis 2a: Need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediate the relationship between ethical leadership and job satisfaction

Hypothesis 2b: Need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediate the relationship between ethical leadership and job performance (in-role, extra-role)

Ethical leadership as a contextual element could also be considered as a condition supporting the influence of mindfulness on need fulfillment. This can be explained as follows. Mindful

employees are open to stimuli in the organizational context, like ethical leadership. This implies that mindful employees are more attentive to the actions and behaviors of their ethical leader (Eissenbeiss & Van Knippenberg, 2015). Since ethical leaders are attractive, credible and legitimate role models of appropriate behavior, employees will behave accordingly (social learning theory, Bandura, 1971). So, when mindful employees experience that the behaviors of their ethical leader focus on fulfillment of the needs for relatedness (people-orientation), autonomy (power sharing) and competence (fairness, role clarification), they will consider this as appropriate behavior, and will do the same. As such, ethical leadership seems to interact with mindfulness in predicting need fulfillment. Therefore can be expected:

Hypothesis 3: Ethical leadership moderates the relationship between mindfulness and need fulfillment (competence, autonomy, relatedness) such that having an ethical leader strengthens the relationship between mindfulness and need fulfillment (competence, autonomy, relatedness)

The hypothesized relationships are summarized in Figure 1 and 2:

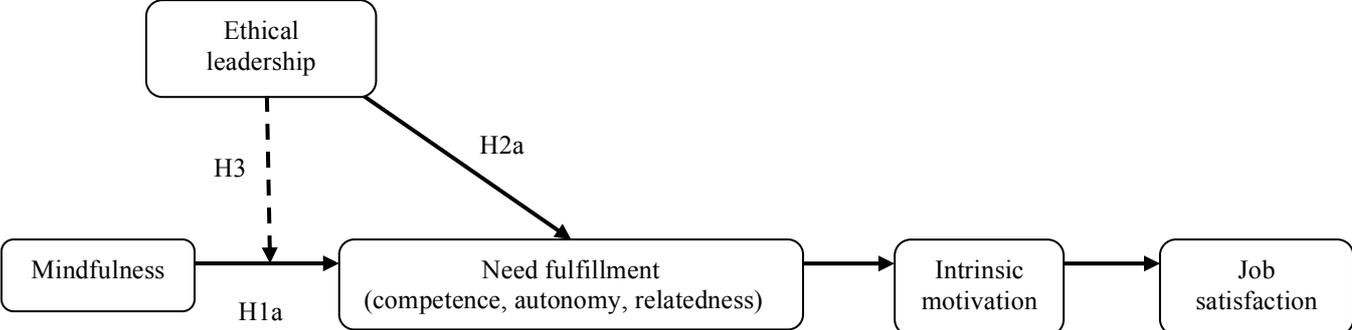


Figure 1. The proposed theoretical model for job satisfaction.

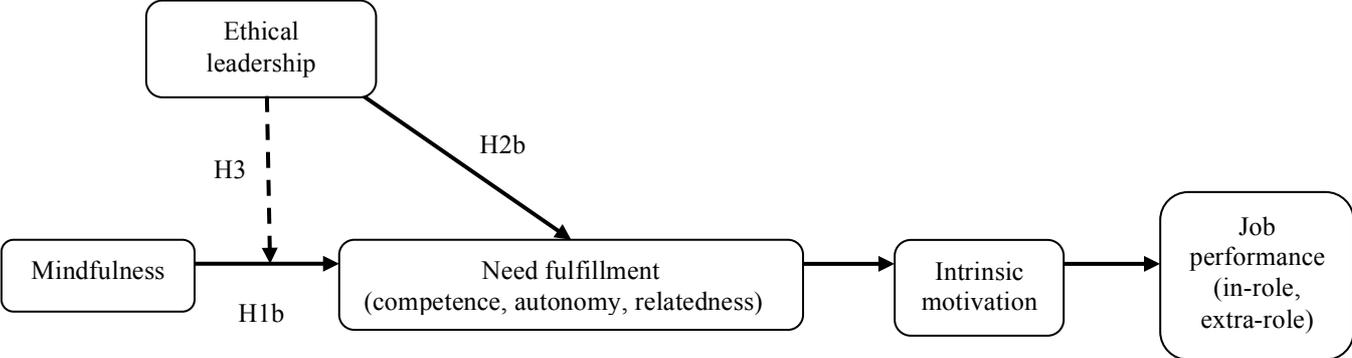


Figure 2. The proposed theoretical model for job performance.

Method

Research design

This research focuses on understanding the relationship between mindfulness and both job satisfaction and job performance, mediated by need fulfillment and intrinsic motivation. Besides, the influence of ethical leadership on these relationships was taken into account. The hypothesized relationships were investigated with an explanatory, quantitative and cross-sectional research design. This research is explanatory because it focuses on explaining the relationships between multiple variables by seeking answers to hypotheses (Singleton Jr. & Straits, 2005). The quantitative nature of this research lies in the fact that questionnaires were used to gain insight into individual employees' attitudes, thoughts, feelings, relationships and opinions (Baarda, De Goede & Kalmijn, 2010). A cross-sectional design indicates that the questionnaires were spread only at a single point in time (Singleton Jr. & Straits, 2005).

Participants and procedure

Data were collected from individual employees (level of analysis) working in various sectors in the Netherlands. The only criterion was that employees needed to have a supervisor in their job. Within the personal network of the researcher, 218 employees were contacted. These employees were conveniently available, indicating a convenience sample (Singleton Jr. & Straits, 2005). This type of non-probability sampling makes it easier to include employees in the sample as an equal or known chance of being included is not required (Singleton Jr. & Straits, 2005). Besides, employees knew the researcher, which might have increased the willingness to participate. Employees were asked to fill in a 10-15 minute online questionnaire via a link that was sent to them (Appendix 1). In this way, anonymity of the respondents could be guaranteed. Employees were then asked to spread the link among their colleagues. Using such a chain of referral to collect data is called snowball sampling (Singleton Jr. & Straits, 2005). This was done to quickly increase the number of available data. After two weeks, the initial group of contacted employees received a reminder.

In total, 535 respondents filled in the questionnaire. After excluding those respondents who did not meet the criterion of having a supervisor and those who left too many questions unanswered, a total of 431 respondents remained. Due to the use of snowball sampling, the response rate could not be calculated. The average age of the respondents was 41 years ($SD = 12.451$) of whom 44.5% were male and 55.5% were female employees.

Manager-employee tenure was on average 4 years ($SD = 5.640$) and 63% of the respondents had a tenure of more than one year. 40.3% of the respondents did not only have a supervisor, but were supervisors themselves as well. Respondents were employed either in the services sector (72.8%, e.g. health, education, consultancy) or in the manufacturing sector (27.2%, e.g. construction, industry, agriculture). 12.4% of the respondents participated in some sort of mindfulness training and 7.3% finished it more than one year ago.

Measures

The questionnaire was written in Dutch and all variables under investigation were measured via pre-existing and previously used scales. Although these scales were shown to be reliable in previous research, factor analysis was used to examine the construct validity of each scale. This clearly resulted in one factor for all variables except ethical leadership, which will be outlined below. Appendix 2 provides the factor analyses for each scale. Cronbach's alpha was used to evaluate the reliability of the scales and these were shown to be good.

Items were measured on a 5-point Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*), unless otherwise stated below.

Mindfulness

Mindfulness was measured with the Mindfulness Attention Awareness Scale (MAAS) (Brown & Ryan, 2003), which has been validated in Dutch by Schroevers, Nykliček and Topman (2008). MAAS focuses on mindfulness as a trait, which is in line with the perspective on mindfulness as used in this study. It measures the attention and awareness towards someone's internal and external experiences in daily life (Ruedy & Schweitzer, 2010; Weinstein & Ryan, 2011). MAAS is the most frequently used and validated measure in different populations (Brown & Ryan, 2003; Ruedy & Schweitzer, 2010). The items are also clearly formulated and easy to understand. The scale contains 15 items such as "I find myself doing things without paying attention" and "I find it difficult to stay focused on what's happening in the present". Respondents rated their experiences on a 6-point Likert scale, ranging from 1 (*almost never*) to 6 (*almost always*). Cronbach's α was .861.

Need fulfillment

Need fulfillment (competence, autonomy, relatedness) was measured with the Dutch version of the Work-related Basic Need Satisfaction Scale (Van den Broeck, Vansteenkiste, De Witte,

Soenens, & Lens, 2010). *Competence satisfaction* was measured with six items like “I feel competent at my job” and “I really master my tasks at my job”. Cronbach’s α was .861. *Autonomy satisfaction* was also measured with six items. Sample items are “I feel free to do my job the way I think it could be best done” and “I feel like I can be myself at my job”. Cronbach’s α was .806. *Relatedness satisfaction* contained six items as well, such as “At work, I feel part of a group” and “Some people I work with are close friends of mine”. Cronbach’s α was .826.

Intrinsic motivation

Intrinsic motivation was measured with the Sport Motivation Scale (Pelletier et al., 1995), as it has been linked to self-determination theory (SDT) before. Van Yperen and Diderich (1998) attuned this scale specifically to work situations, and translated and validated it in Dutch. The scale contained 10 items like “I do this job because of the complacency I feel when improving my weak points on the job” and “I do this job because of the contentment I feel when I have conquered difficulties in my job. Answers were rated on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Cronbach’s α was .933.

Job satisfaction

Job satisfaction was measured with one item from the VBBA 2.0 (Van Veldhoven, Prins, Van der Laken, & Dijkstra, 2014). Although it has been argued to measure job satisfaction on multiple dimensions, research shows that a single-item component is not only reliable and valid, but also preferable over multiple-item measures (Nagy, 2010). Thus, the single item that measures job satisfaction is “In general, I am satisfied with my job”.

Job performance

Koopmans, Bernaards, Hildebrandt, De Vet and Van der Beek (2014) developed a Dutch questionnaire to measure individual job performance (in-role, extra-role). This Individual Work Performance Questionnaire (IWPQ) is a short, complete and generic measure for individual work performance, and has been shown to be a valid and reliable measure (Koopmans et al., 2014). Answers are rated on a 4-point Likert scale ranging from 1 (*never*) to 4 (*always*). *In-role performance* was measured with five items like “In the last three months I have made an optimal planning” and “In the last three months I succeed in differentiating main and side issues”. Cronbach’s α was .708. *Extra-role performance* was measured with eight items, including “In the last three months I have taken extra

responsibilities” and “In the last three months I have been searching for new challenges at work” Cronbach’s α was .821.

Ethical leadership

Ethical leadership, as used here, covers people-orientation, power sharing, fairness and role clarification and was measured with 25 items adapted from the Dutch version of the multi-dimensional Ethical Leadership at Work Questionnaire (ELW) (Kalshoven et al., 2011). Kalshoven et al. (2011) have shown the importance of a multi-dimensional measure of ethical leadership over a uni-dimensional measure like the Ethical Leadership Scale (ELS) (Brown et al., 2005). The scale originally contained 25 items, but only 23 items were used here. Factor analysis indicated that two fairness items did not load on the fairness component of ethical leadership, as can be seen in Appendix 2. Also, removing both items would result in a higher reliability of the scale. So, the items “My supervisor holds me responsible for work that I have no control over” and “My supervisor holds me responsible for things that are not my fault” were removed. Consequently, the final scale measuring ethical leadership contained 23 items. Sample items are “My supervisor allows subordinates to influence critical decisions” and “My supervisor is interested in how I feel and how I am doing”. Cronbach’s α of the 23-item scale was .940.

Control variables

Control variables were added to control for spurious relationships. Spurious relationships are produced by antecedent variables rather than model variables, which should be avoided (Singleton Jr. & Straits, 2005). The control variables used here are considered to influence all model variables in the model, and are gender (0 = *male*; 1 = *female*), tenure with the leader and sector (0 = *services*; 1 = *manufacturing*).

Results

Descriptive analysis

Table 1 shows the means, standard deviations and correlations of all variables. Mindfulness and need fulfillment were indeed correlated: competence ($r = .375, p < .01$), autonomy ($r = .237, p < .01$), relatedness ($r = .181, p < .01$). As expected, need fulfillment and intrinsic motivation were positively correlated: competence ($r = .299, p < .01$), autonomy ($r = .466, p < .01$), relatedness ($r = .284, p < .01$). A positive correlation was also found between intrinsic motivation and the work-related outcomes: job satisfaction ($r = .480, p < .01$), in-role performance ($r = .127, p < .01$), and extra-role performance ($r = .345, p < .01$). For ethical leadership, a positive correlation with need fulfillment existed as expected: competence ($r = .155, p < .01$), autonomy ($r = .374, p < .01$), relatedness ($r = .237, p < .01$). Surprisingly, no correlation was found between relatedness ($r = .082, n.s$) and in-role performance.

Unexpectedly, the control variables correlated with model variables. Independent samples t-tests (Pallant, 2010) for gender revealed that men scored significantly higher on mindfulness ($M = 4.35, SD = .647$); $t(408) = 4.483, p < .01$ (two-tailed), competence ($M = 4.19, SD = .554$); $t(415) = 2.551, p < .05$ (two-tailed), autonomy ($M = 3.90, SD = .591$); $t(423) = 3.418, p < .01$ (two-tailed) and job satisfaction ($M = 4.13, SD = .684$); $t(425) = 2.210, p < .05$ (two-tailed). The t-tests for sector showed that the scores within the manufacturing sector were significantly higher compared to the services sector on mindfulness ($M = 4.32, SD = .649$); $t(209) = -2.386, p < .05$ (two-tailed). The t-tests for tenure with the leader indicated that employees with a tenure of less than 4 years scored significantly higher on mindfulness ($M = 4.30, SD = .668$); $t(175) = -2.077, p < .05$ (two-tailed).

Hypothesis testing (mediation)

In earlier research, the causal steps method (Baron & Kenny, 1986) was commonly used to test for mediation. Due to its limitations, this method is no longer appropriate (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Instead, alternative procedures like those recommended by Hayes (2013) can be used. These procedures use bootstrapping rather than a Sobel test to test the significance of an indirect effect. Bootstrapping is a resampling procedure to test for mediation by repeatedly sampling from the original data set and estimating the indirect effect in each resampled data set. Confidence intervals for the indirect effect can then be constructed. If zero is *not* included in the interval, the mediating effect is

Table 1

Descriptive statistics

| Variable | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|----------------------------|------|-------|---------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Gender ^a | .55 | .498 | | | | | | | | | | | |
| 2. Sector ^b | .27 | .445 | -.228** | | | | | | | | | | |
| 3. Tenure with leader | 4.21 | 5.640 | -.141** | .050 | | | | | | | | | |
| 4. Mindfulness | 4.19 | .661 | -.212** | .114* | .140** | | | | | | | | |
| 5. Competence | 4.11 | .574 | -.122* | .095* | .097 | .375** | | | | | | | |
| 6. Autonomy | 3.79 | .643 | -.161** | -.001 | .033 | .237** | .424** | | | | | | |
| 7. Relatedness | 3.79 | .599 | .020 | .046 | .012 | .181** | .295** | .315** | | | | | |
| 8. Intrinsic motivation | 5.75 | .851 | -.033 | .006 | -.003 | .174** | .299** | .466** | .284** | | | | |
| 9. Job satisfaction | 4.04 | .758 | -.105* | .008 | .061 | .123* | .274** | .530** | .266** | .480** | | | |
| 10. In-role performance | 2.94 | .455 | -.059 | -.032 | .074 | .319** | .450** | .301** | .082 | .127* | .130** | | |
| 11. Extra-role performance | 2.81 | .517 | -.085 | .018 | .033 | .145** | .401** | .326** | .246** | .345** | .272** | .312** | |
| 12. Ethical leadership | 3.61 | .654 | .038 | -.050 | .000 | .026 | .155** | .374** | .237** | .256** | .284** | .123* | .155** |

Notes. N varies from 377 to 431 due to missing values; * $p < .05$. ** $p < .01$.

^a 0 = men, 1 = women

^b 0 = services, 1 = manufacturing

significant (Preacher & Hayes, 2008). Perfect or full mediation exists when the direct effect is no longer significant once the mediator(s) is added. Partial mediation exists when the direct effect remains significant after adding the intervening variable; both the direct effect and the indirect effect are significant (Keith, 2006).

Serial multiple mediation analysis (Hayes, 2013) was used to test for mediation with *PROCESS* in *SPSS*, because all mediation hypotheses included two intervening variables. Template 6 (Appendix 3) illustrates such a serial multiple mediation model. Average scores rather than sum scores were used in the analyses. The *SPSS* macro output of all analyses can be found in Appendix 4. As can be seen in Figure 3 and Tables 2, 3 and 4 mindfulness indirectly influenced job satisfaction through its effect on need fulfillment (competence, autonomy, relatedness) and intrinsic motivation (H1a). In more detail:

- A bootstrap confidence interval for the indirect effect through competence and intrinsic motivation ($ab = .0534$) based on 1000 bootstrap samples was entirely above zero (.0298 to .0876) (Table 2).
- A bootstrap confidence interval for the indirect effect through autonomy and intrinsic motivation ($ab = .0316$) based on 1000 bootstrap samples was entirely above zero (.0125 to .0663) (Table 3).
- A bootstrap confidence interval for the indirect effect through relatedness and intrinsic motivation ($ab = .0208$) based on 1000 bootstrap samples was entirely above zero (.0063 to .0474) (Table 4).

There was no evidence that mindfulness influenced job satisfaction independent of its effect on competence and intrinsic motivation ($c' = -.0624$, $p = .2764$), autonomy and intrinsic motivation ($c' = -.0724$, $p = .1662$), and relatedness and intrinsic motivation ($c' = -.0381$, $p = .4974$).

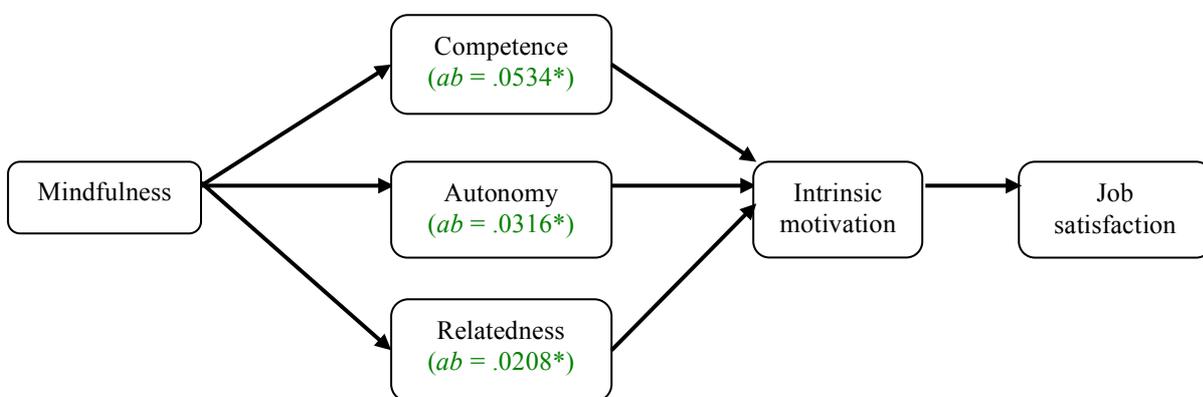


Figure 3. The effect of mindfulness on job satisfaction, mediated by need fulfillment and intrinsic motivation.

Table 2

Direct and indirect effect(s) of mindfulness on job satisfaction, mediated by competence and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 355) = 15.6417^{**}$ | | | .1498 ^{**} | |
| Main effect on the first mediator variable: competence | | | | |
| Mindfulness | .3167 ^{**} | .0445 | | |
| Gender ^a | -.0308 | .0616 | | |
| Sector ^b | .0541 | .0541 | | |
| Tenure with leader | .0054 | .0054 | | |
| Model 2: $F(5, 354) = 7.9695^{**}$ | | | .1012 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Competence | .4127 ^{**} | .0799 | | |
| Mindfulness | .1076 | .0716 | | |
| Gender ^a | .0316 | .0927 | | |
| Sector ^b | -.0095 | .0996 | | |
| Tenure with leader | -.0063 | .0077 | | |
| Model 3: $F(6, 353) = 19.7453^{**}$ | | | .2513 ^{**} | |
| Main effect on the dependent variable: job satisfaction | | | | |
| Intrinsic motivation | .4087 ^{**} | .0589 | | |
| Competence | .1420 | .0679 | | |
| Mindfulness | -.0642 | .0435 | | |
| Gender ^a | -.1258 | .0760 | | |
| Sector ^b | -.0154 | .0816 | | |
| Tenure with leader | .0067 | .0063 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on job satisfaction | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| MINDFUL > JOBSAT | <i>c'</i> | | | |
| | -.0642 | .0589 | -.1800 | .0516 |
| <i>Indirect</i> | | | | |
| Total: | <i>ab</i> | | | |
| | .1424* | .0399 | .0723 | .2266 |
| Ind1 (MINDFUL > COMP > JOBSAT): | | | | |
| | .0450* | .0249 | .0013 | .1004 |
| Ind2 (MINDFUL > COMP > INTRMOT > JOBSAT): | .0534* | .0143 | .0298 | .0876 |
| Ind3 (MINDFUL > INTRMOT > JOBSAT): | | | | |
| | .0440 | .0271 | -.0066 | .1022 |

Notes. $N = 360$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 3

Direct and indirect effect(s) of mindfulness on job satisfaction, mediated by autonomy and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|----------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 355) = 6.9325^{**}$ | | | .0725 ^{**} | |
| Main effect on the first mediator variable: autonomy | | | | |
| Mindfulness | .1818 ^{**} | .0507 | | |
| Gender ^a | -.2133 ^{**} | .0701 | | |
| Sector ^b | -.0967 | .0752 | | |
| Tenure with leader | -.0011 | .0058 | | |
| Model 2: $F(5, 354) = 22.9588^{**}$ | | | .2449 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Autonomy | .6404 ^{**} | .0643 | | |
| Mindfulness | .1219 | .0625 | | |
| Gender ^a | .1554 | .0861 | | |
| Sector ^b | .0747 | .0914 | | |
| Tenure with leader | -.0033 | .0070 | | |
| Model 3: $F(6, 353) = 32.2506^{**}$ | | | .3541 ^{**} | |
| Main effect on the dependent variable: job satisfaction | | | | |
| Intrinsic motivation | .2713 ^{**} | .0441 | | |
| Autonomy | .4729 ^{**} | .0604 | | |
| Mindfulness | -.0724 | .0522 | | |
| Gender ^a | -.0267 | .0718 | | |
| Sector ^b | .0397 | .0759 | | |
| Tenure with leader | .0074 | .0059 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on job satisfaction | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > JOBSAT) | -.0723 | .0522 | -.1751 | .0302 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .1506* | .0399 | .0809 | .2394 |
| Ind1 (MINDFUL > AUTON > JOBSAT): | .0859* | .0272 | .0394 | .1522 |
| Ind2 (MINDFUL > AUTON > INTRMOT > JOBSAT): | .0316* | .0129 | .0125 | .0663 |
| Ind3 (MINDFUL > INTRMOT > JOBSAT): | .0331* | .0169 | .0035 | .0691 |

Notes. $N = 360$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 4

Direct and indirect effect(s) of mindfulness on job satisfaction, mediated by relatedness and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------------|--------------|----------------|---------------------|
| Model 1: $F(4, 351) = 2.1161$ | | | | .0235 |
| Main effect on the first mediator variable: relatedness | | | | |
| Mindfulness | .1248 | .0485 | | |
| Gender ^a | .0918 | .0672 | | |
| Sector ^b | .0715 | .0724 | | |
| Tenure with leader | -.0002 | .0056 | | |
| Model 2: $F(5, 350) = 8.6058^{**}$ | | | | .1095 ^{**} |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Relatedness | .4015 ^{**} | .0738 | | |
| Mindfulness | .1914 ^{**} | .0676 | | |
| Gender ^a | -.0149 | .0931 | | |
| Sector ^b | -.0256 | .1003 | | |
| Tenure with leader | -.0041 | .0077 | | |
| Model 3: $F(6, 349) = 19.9323^{**}$ | | | | .2552 ^{**} |
| Main effect on the dependent variable: job satisfaction | | | | |
| Intrinsic motivation | .4149 ^{**} | .0438 | | |
| Relatedness | .1161 | .0629 | | |
| Mindfulness | -.0381 | .0560 | | |
| Gender ^a | -.1432 | .0763 | | |
| Sector ^b | -.0185 | .0822 | | |
| Tenure with leader | .0082 | .0063 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on job satisfaction | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > JOBSAT) | -.0381 | .0560 | -.1483 | .0721 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .1147* | .0310 | .0570 | .1776 |
| Ind1 (MINDFUL > RELAT > JOBSAT): | .0145* | .0091 | .0018 | .0430 |
| Ind2 (MINDFUL > RELAT > INTRMOT > JOBSAT): | .0208* | .0097 | .0063 | .0474 |
| Ind3 (MINDFUL > INTRMOT > JOBSAT): | .0794* | .0299 | .0257 | .1420 |

Notes. $N = 356$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

The outcomes indicated different findings for in-role and extra-role performance. Therefore, both aspects of job performance are presented separately. As can be seen in Figure 4 and Tables 5, 6 and 7 mindfulness indirectly influenced in-role performance through competence and autonomy only. Intrinsic motivation did not function as a second mediator. In more detail:

- A bootstrap confidence interval for the indirect effect through competence ($ab = .0946$) based on 1000 bootstrap samples was entirely above zero (.0559 to .1405) (Table 5).
- A bootstrap confidence interval for the indirect effect through autonomy ($ab = .0314$) based on 1000 bootstrap samples was entirely above zero (.0118 to .0638) (Table 6).
- A bootstrap confidence interval for the indirect effect through relatedness ($ab = -.0006$) based on a 1000 bootstrap samples was *not* above zero (-.0131 to .0016) (Table 7). Therefore, relatedness will not be taken into account.

There was evidence that mindfulness influenced job satisfaction independent of its effect on competence ($c' = .1330, p < .01$) and autonomy ($c' = .1983, p < .01$), which implies partial mediation.

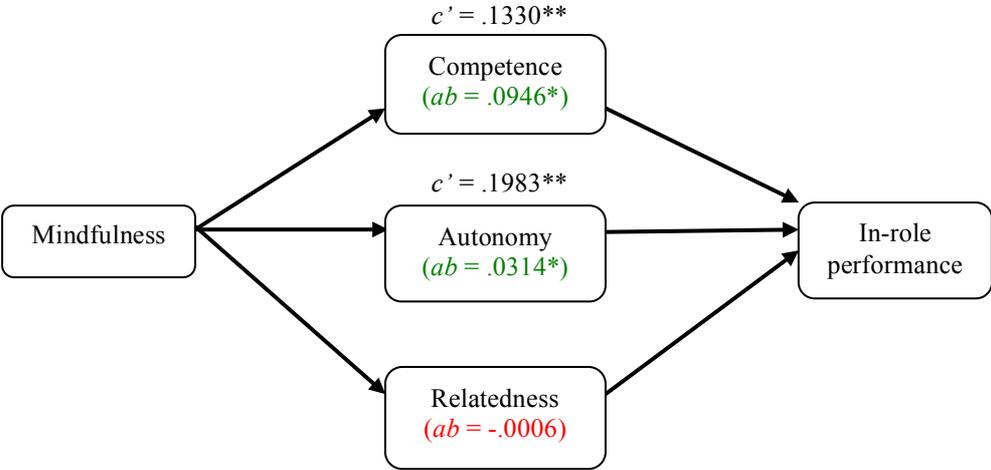


Figure 4. The effect of mindfulness on in-role performance, mediated by competence and autonomy.

Table 5

Direct and indirect effect(s) of mindfulness on in-role performance, mediated by competence and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|---|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 354) = 15.5500^{**}$ | | | .1494** | |
| Main effect on the first mediator variable: competence | | | | |
| Mindfulness | .3164** | .1982 | | |
| Gender ^a | -.0305 | .0446 | | |
| Sector ^b | .0539 | .0662 | | |
| Tenure with leader | .0054 | .0051 | | |
| Model 2: $F(5, 353) = 7.9644^{**}$ | | | .1014** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Competence | .4106** | .0779 | | |
| Mindfulness | .0936 | .0699 | | |
| Gender ^a | .0469 | .0904 | | |
| Sector ^b | -.0179 | .0970 | | |
| Tenure with leader | -.0032 | .0075 | | |
| Model 3: $F(6, 352) = 17.5891^{**}$ | | | .2307** | |
| Main effect on the dependent variable: in-role performance | | | | |
| Intrinsic motivation | -.0175 | .0270 | | |
| Competence | .2989** | .0411 | | |
| Mindfulness | .1330 | .0356 | | |
| Gender ^a | .0195 | .0459 | | |
| Sector ^b | -.1045 | .0493 | | |
| Tenure with leader | .0017 | .0038 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on in-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > INPERF) | .1330** | .0356 | .0631 | .2030 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0907* | .0210 | .0551 | .1360 |
| Ind1 (MINDFUL > COMP > INPERF): | .0946* | .0215 | .0559 | .1405 |
| Ind2 (MINDFUL > COMP > INTRMOT > INPERF): | -.0023 | .0051 | -.0115 | .0089 |
| Ind3 (MINDFUL > INTRMOT > INPERF): | -.0016 | .0045 | -.0146 | .0042 |

Notes. $N = 359$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 6

Direct and indirect effect(s) of mindfulness on in-role performance, mediated by autonomy and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|---|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 354) = 6.9576^{**}$ | | | .0729** | |
| Main effect on the first mediator variable: autonomy | | | | |
| Mindfulness | .1828** | .0508 | | |
| Gender ^a | -.2144** | .0702 | | |
| Sector ^b | -.0960 | .0753 | | |
| Tenure with leader | -.0014 | .0058 | | |
| Model 2: $F(5, 353) = 24.6539^{**}$ | | | .2588** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Autonomy | .6476** | .0621 | | |
| Mindfulness | .1052 | .0604 | | |
| Gender ^a | .1732* | .0832 | | |
| Sector ^b | .0664 | .0882 | | |
| Tenure with leader | .0000 | .0068 | | |
| Model 3: $F(6, 352) = 10.8168^{**}$ | | | .1557** | |
| Main effect on the dependent variable: in-role performance | | | | |
| Intrinsic motivation | -.0267 | .0312 | | |
| Autonomy | .1716** | .0416 | | |
| Mindfulness | .1983** | .0356 | | |
| Gender ^a | .0475 | .0490 | | |
| Sector ^b | -.0718 | .0517 | | |
| Tenure with leader | .0036 | .0040 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on in-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > INPERF) | .1983** | .0356 | .1284 | .2682 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0254* | .0132 | .0024 | .0557 |
| Ind1 (MINDFUL > AUTON > INPERF): | .0314* | .0129 | .0118 | .0638 |
| Ind2 (MINDFUL > AUTON > INTRMOT > INPERF): | -.0032 | .0061 | -.0177 | .0072 |
| Ind3 (MINDFUL > INTRMOT > INPERF): | -.0028 | .0058 | -.0188 | .0053 |

Notes. $N = 359$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 7

Direct and indirect effect(s) of mindfulness on in-role performance, mediated by relatedness and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|---|---------|---------|----------------|-----------|
| Model 1: $F(4, 350) = 2.1342$ | | | .0238 | |
| Main effect on the first mediator variable: relatedness | | | | |
| Mindfulness | .1259** | .0486 | | |
| Gender ^a | .0906 | .0673 | | |
| Sector ^b | .0721 | .0725 | | |
| Tenure with leader | -.0004 | .0056 | | |
| Model 2: $F(5, 349) = 9.0010^{**}$ | | | .1142** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Relatedness | .4099** | .0717 | | |
| Mindfulness | .1751** | .0658 | | |
| Gender ^a | .0006* | .0906 | | |
| Sector ^b | -.0352 | .0974 | | |
| Tenure with leader | -.0008 | .0075 | | |
| Model 3: $F(6, 348) = 7.5326^{**}$ | | | .1149** | |
| Main effect on the dependent variable: in-role performance | | | | |
| Intrinsic motivation | .0372 | .0412 | | |
| Relatedness | -.0045 | .0294 | | |
| Mindfulness | .2162** | .0365 | | |
| Gender ^a | .0078 | .0498 | | |
| Sector ^b | -.0877 | .0535 | | |
| Tenure with leader | .0033 | .0041 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on in-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| Dir1 (MINDFUL > INPERF) | .2162** | .0356 | .1444 | .2880 |
| <i>Indirect</i> | | | | |
| Total: | .0079 | .0110 | -.0093 | .0345 |
| Ind1 (MINDFUL > RELAT > INPERF): | -.0006 | .0058 | -.0131 | .0116 |
| Ind2 (MINDFUL > RELAT > INTRMOT > INPERF): | .0019 | .0026 | -.0018 | .0088 |
| Ind3 (MINDFUL > INTRMOT > INPERF): | .0065 | .0093 | -.0069 | .0328 |

Notes. $N = 355$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

In contrast, mindfulness indeed indirectly influenced extra-role performance through need fulfillment (competence, autonomy, relatedness) and intrinsic motivation. This is shown in Figure 5 and Tables 8, 9 and 10. In more detail:

- A bootstrap confidence interval for the indirect effect through competence and intrinsic motivation ($ab = .0188$) based on 1000 bootstrap samples was entirely above zero (.0056 to .0423) (Table 8).
- A bootstrap confidence interval for the indirect effect through autonomy and intrinsic motivation ($ab = .0156$) based on 1000 bootstrap samples was entirely above zero (.0036 to .0388) (Table 9).
- A bootstrap confidence interval for the indirect effect through relatedness and intrinsic motivation ($ab = .0084$) based on 1000 bootstrap samples was entirely above zero (.0023 to .0217) (Table 10).

There was no evidence that mindfulness influenced job satisfaction independent of its effect on competence and intrinsic motivation ($c' = -.0435$, $p = .2893$), autonomy and intrinsic motivation ($c' = .0231$, $p = .5695$), and relatedness and intrinsic motivation ($c' = .0348$, $p = .3966$). This implies full mediation. So, when H1b is viewed separately for in-role and extra-role performance, the hypothesis can only be confirmed for extra-role performance.

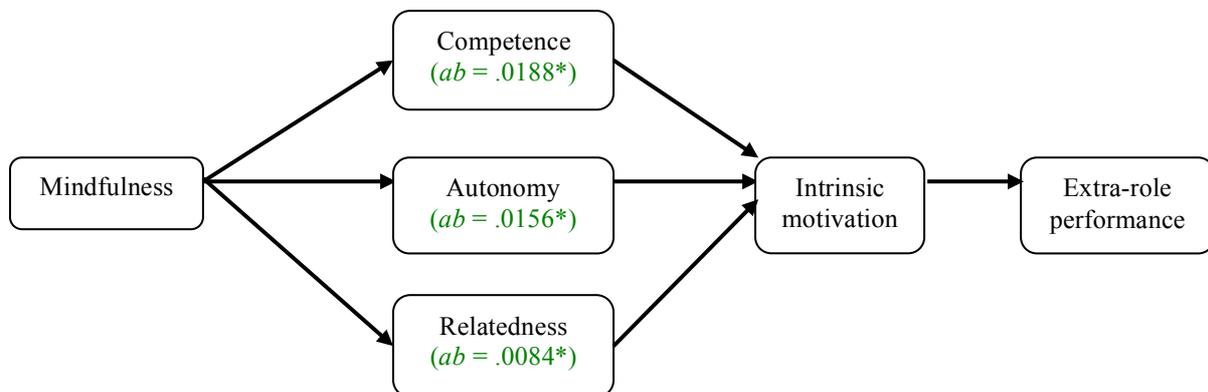


Figure 5. The effect of mindfulness on extra-role performance, mediated by need fulfillment and intrinsic motivation.

Table 8

Direct and indirect effect(s) of mindfulness on extra-role performance, mediated by competence and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 353) = 15.6127^{**}$ | | | .1503** | |
| Main effect on the first mediator variable: competence | | | | |
| Mindfulness | .3170** | .0446 | | |
| Gender ^a | -.0320 | .0618 | | |
| Sector ^b | .0564 | .0664 | | |
| Tenure with leader | .0053 | .0051 | | |
| Model 2: $F(5, 352) = 7.9806^{**}$ | | | .1018** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Competence | .4136** | .0798 | | |
| Mindfulness | .1068 | .0715 | | |
| Gender ^a | .0389 | .0927 | | |
| Sector ^b | -.0159 | .0996 | | |
| Tenure with leader | -.0063 | .0077 | | |
| Model 3: $F(6, 351) = 15.4702^{**}$ | | | .2091** | |
| Main effect on the dependent variable: extra-role performance | | | | |
| Intrinsic motivation | .1430** | .0473 | | |
| Competence | .3060** | .0305 | | |
| Mindfulness | -.0435 | .0410 | | |
| Gender ^a | -.0091 | .0530 | | |
| Sector ^b | -.0055 | .0570 | | |
| Tenure with leader | .0007 | .0044 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on extra-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > EXPERF) | -.0435 | .0410 | -.1242 | .0371 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .1310* | .0251 | .0859 | .1832 |
| Ind1 (MINDFUL > COMP > EXPERF): | .0970* | .0212 | .0602 | .1446 |
| Ind2 (MINDFUL > COMP > INTRMOT > EXPERF): | .0188* | .0092 | .0056 | .0423 |
| Ind3 (MINDFUL > INTRMOT > EXPERF): | .0153 | .0120 | -.0001 | .0500 |

Notes. $N = 358$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 9

Direct and indirect effect(s) of mindfulness on extra-role performance, mediated by autonomy and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 353) = 6.8838^{**}$ | | | .0724** | |
| Main effect on the first mediator variable: autonomy | | | | |
| Mindfulness | .1820** | .0508 | | |
| Gender ^a | -.2130** | .0704 | | |
| Sector ^b | -.0956 | .0756 | | |
| Tenure with leader | -.0012 | .0058 | | |
| Model 2: $F(5, 352) = 22.7905^{**}$ | | | .2446** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Autonomy | .6377** | .0643 | | |
| Mindfulness | .1218 | .0625 | | |
| Gender ^a | .1614 | .0861 | | |
| Sector ^b | .0684 | .0915 | | |
| Tenure with leader | -.0033 | .0070 | | |
| Model 3: $F(6, 351) = 10.3020^{**}$ | | | .1497** | |
| Main effect on the dependent variable: extra-role performance | | | | |
| Intrinsic motivation | .1345** | .0470 | | |
| Autonomy | .1781** | .0345 | | |
| Mindfulness | .0231 | .0406 | | |
| Gender ^a | .0193 | .0559 | | |
| Sector ^b | .0288 | .0592 | | |
| Tenure with leader | .0025 | .0045 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on extra-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > EXPERF) | .0231 | .0406 | -.0567 | .1029 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0644* | .0229 | .0291 | .1219 |
| Ind1 (MINDFUL > AUTON > EXPERF): | .0324* | .0135 | .0119 | .0669 |
| Ind2 (MINDFUL > AUTON > INTRMOT > EXPERF): | .0156* | .0084 | .0036 | .0388 |
| Ind3 (MINDFUL > INTRMOT > EXPERF): | .0164* | .0125 | .0005 | .0502 |

Notes. $N = 358$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 10

Direct and indirect effect(s) of mindfulness on extra-role performance, mediated by relatedness and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 349) = 2.0836$ | | | .0233 | |
| Main effect on the first mediator variable: relatedness | | | | |
| Mindfulness | .1242* | .0486 | | |
| Gender ^a | .0952 | .0674 | | |
| Sector ^b | .0674 | .0728 | | |
| Tenure with leader | -.0001 | .0056 | | |
| Model 2: $F(5, 348) = 8.4229^{**}$ | | | .1080** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Relatedness | .3965** | .0738 | | |
| Mindfulness | .1918** | .0676 | | |
| Gender ^a | -.0088 | .0932 | | |
| Sector ^b | -.0291 | .1004 | | |
| Tenure with leader | -.0041 | .0077 | | |
| Model 3: $F(6, 347) = 8.6827^{**}$ | | | .1305** | |
| Main effect on the dependent variable: extra-role performance | | | | |
| Intrinsic motivation | .1706** | .1760 | | |
| Relatedness | .1182* | .0461 | | |
| Mindfulness | .0348 | .0348 | | |
| Gender ^a | -.0335 | .0559 | | |
| Sector ^b | -.0103 | .0603 | | |
| Tenure with leader | .0027 | .0046 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on extra-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (MINDFUL > EXPERF) | .0348 | .0410 | -.0459 | .1155 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0558* | .0226 | .0207 | .1131 |
| Ind1 (MINDFUL > RELAT > EXPERF): | .0147* | .0091 | .0025 | .0410 |
| Ind2 (MINDFUL > RELAT > INTRMOT > EXPERF): | .0084* | .0045 | .0023 | .0217 |
| Ind3 (MINDFUL > INTRMOT > EXPERF): | .0327* | .0183 | .0075 | .0809 |

Notes. $N = 354$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

As can be seen in Figure 6 and Tables 11, 12 and 13 ethical leadership influenced job satisfaction through need fulfillment (competence, autonomy, relatedness) and intrinsic motivation (H2a). In more detail:

- A bootstrap confidence interval for the indirect effect through competence and intrinsic motivation ($ab = .0188$) based on 1000 bootstrap samples was entirely above zero (.0035 to .0425) (Table 11).
- A bootstrap confidence interval for the indirect effect through autonomy and intrinsic motivation ($ab = .0603$) based on 1000 bootstrap samples was entirely above zero (.0306 to .1090) (Table 12).
- A bootstrap confidence interval for the indirect effect through relatedness and intrinsic motivation ($ab = .0267$) based on 1000 bootstrap samples was entirely above zero (.0119 to .0557) (Table 13).

There was evidence that ethical leadership influenced job satisfaction independent of its effect on competence and intrinsic motivation ($c' = .2045, p < .01$), and relatedness and intrinsic motivation ($c' = .1974, p < .01$). Such evidence was not found for the effect on autonomy and intrinsic motivation ($c' = .0912, p = .1002$). Thus, this means partial mediation for competence and relatedness, and full mediation for autonomy.

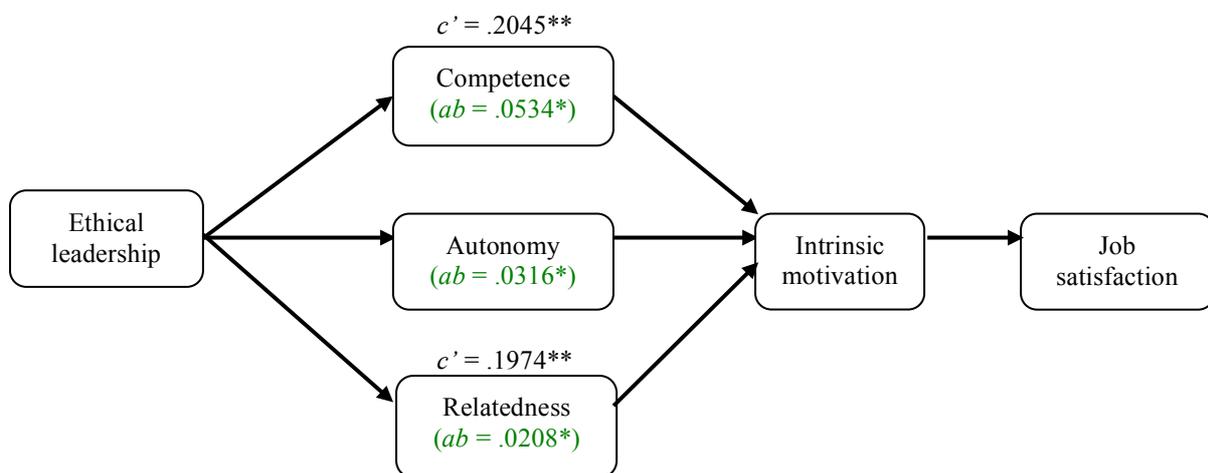


Figure 6. The effect of ethical leadership on job satisfaction, mediated by need fulfillment and intrinsic motivation.

Table 11

Direct and indirect effect(s) of ethical leadership on job satisfaction, mediated by competence and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 353) = 4.5003^{**}$ | | | .0485** | |
| Main effect on the first mediator variable: competence | | | | |
| Ethical leadership | .1279** | .0466 | | |
| Gender ^a | -.1107 | .0641 | | |
| Sector ^b | .1047 | .0699 | | |
| Tenure with leader | .0091 | .0054 | | |
| Model 2: $F(5, 352) = 11.5268^{**}$ | | | .1407** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Competence | .4011** | .0741 | | |
| Ethical leadership | .2908** | .0656 | | |
| Gender ^a | .0047 | .0896 | | |
| Sector ^b | .0266 | .0977 | | |
| Tenure with leader | -.0050 | .0075 | | |
| Model 3: $F(6, 351) = 22.0199^{**}$ | | | .2735** | |
| Main effect on the dependent variable: job satisfaction | | | | |
| Intrinsic motivation | .3667** | .0440 | | |
| Competence | .1002 | .0637 | | |
| Ethical leadership | .2045** | .0557 | | |
| Gender ^a | -.1151 | .0740 | | |
| Sector ^b | -.0042 | .0807 | | |
| Tenure with leader | .0062 | .0062 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on job satisfaction | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (ELW > JOBSAT) | .2045 | .0557 | .0949 | .3140 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .1383* | .0382 | .0756 | .2264 |
| Ind1 (ELW > COMP > JOBSAT): | .0128* | .0115 | -.0013 | .0492 |
| Ind2 (ELW > COMP > INTRMOT > JOBSAT): | .0188* | .0098 | .0035 | .0425 |
| Ind3 (ELW > INTRMOT > JOBSAT): | .1066* | .0331 | .0536 | .1880 |

Notes. $N = 358$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 12

Direct and indirect effect(s) of ethical leadership on job satisfaction, mediated by autonomy and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 353) = 20.2636^{**}$ | | | .1867** | |
| Main effect on the first mediator variable: autonomy | | | | |
| Ethical leadership | .3793** | .0469 | | |
| Gender ^a | -.2557** | .0644 | | |
| Sector ^b | -.0530 | .0703 | | |
| Tenure with leader | .0007 | .0054 | | |
| Model 2: $F(5, 352) = 22.2510^{**}$ | | | .2402** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Autonomy | .6170** | .0693 | | |
| Ethical leadership | .1081 | .0665 | | |
| Gender ^a | .1181 | .0857 | | |
| Sector ^b | .1013 | .0916 | | |
| Tenure with leader | -.0017 | .0070 | | |
| Model 3: $F(6, 351) = 22.0199^{**}$ | | | .2735** | |
| Main effect on the dependent variable: job satisfaction | | | | |
| Intrinsic motivation | .2577** | .0442 | | |
| Autonomy | .4307** | .0636 | | |
| Ethical leadership | .0912 | .0553 | | |
| Gender ^a | -.0204 | .0713 | | |
| Sector ^b | .0366 | .0761 | | |
| Tenure with leader | .0067 | .0058 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on job satisfaction | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| Dir1 (ELW > JOBSAT) | .0912 | .0553 | -.0176 | .2000 |
| <i>Indirect</i> | | | | |
| Total: | .2516* | .0495 | .1692 | .3603 |
| Ind1 (ELW > AUTON > JOBSAT): | .1634* | .0378 | .1008 | .2551 |
| Ind2 (ELW > AUTON > INTRMOT > JOBSAT): | .0603* | .0197 | .0306 | .1090 |
| Ind3 (ELW > INTRMOT > JOBSAT): | .0278 | .0203 | -.0071 | .0727 |

Notes. $N = 358$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 13

Direct and indirect effect(s) of ethical leadership on job satisfaction, mediated by relatedness and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------|--------------|----------------|--------------|
| Model 1: $F(4, 349) = 4.8647^{**}$ | | | .0528** | |
| Main effect on the first mediator variable: relatedness | | | | |
| Ethical leadership | .1977** | .0475 | | |
| Gender ^a | .0619 | .0653 | | |
| Sector ^b | .0995 | .0715 | | |
| Tenure with leader | .0012 | .0055 | | |
| Model 2: $F(5, 348) = 10.2455^{**}$ | | | .1283** | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Relatedness | .3586** | .0742 | | |
| Ethical leadership | .2743** | .0675 | | |
| Gender ^a | -.0604 | .0906 | | |
| Sector ^b | .0212 | .0994 | | |
| Tenure with leader | -.0018 | .0076 | | |
| Model 3: $F(6, 351) = 22.0199^{**}$ | | | .2766** | |
| Main effect on the dependent variable: job satisfaction | | | | |
| Intrinsic motivation | .3766** | .0438 | | |
| Relatedness | .0777 | .0626 | | |
| Ethical leadership | .1974** | .0564 | | |
| Gender ^a | -.1331 | .0741 | | |
| Sector ^b | -.0077 | .0812 | | |
| Tenure with leader | .0077 | .0062 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on job satisfaction | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (ELW > JOBSAT) | .1974* | .0564 | .0865 | .3084 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .1453* | .0382 | .0798 | .2369 |
| Ind1 (ELW > RELAT > JOBSAT): | .0154 | .0136 | -.0073 | .0448 |
| Ind2 (ELW > RELAT > INTRMOT > JOBSAT): | .0267* | .0103 | .0119 | .0557 |
| Ind3 (ELW > INTRMOT > JOBSAT): | .1033 | .0352 | -.0423 | .1898 |

Notes. $N = 354$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Again, different results for in-role and extra-role performance were found. Like mindfulness, ethical leadership influenced in-role performance through competence and autonomy only. Intrinsic did not function as a second mediator here either. These findings are presented in Figure 7 and Tables 14, 15 and 16. In more detail:

- A bootstrap confidence interval for the indirect effect through competence ($ab = .0436$) based on 1000 bootstrap samples was entirely above zero (.0074 to .0862) (Table 14).
- A bootstrap confidence interval for the indirect effect through autonomy ($ab = .0736$) based on 1000 bootstrap samples was entirely above zero (.0380 to .1221) (Table 15).
- A bootstrap confidence interval for the indirect effect through relatedness ($ab = .0007$) based on 1000 bootstrap samples was *not* above zero (-.0189 to .0240) (Table 16). Therefore, relatedness will be not taken into account.

There was no evidence that ethical leadership influenced in-role performance independent of its effect on competence ($c' = .0409$, $p = .2407$) and autonomy ($c' = .0087$, $p = .8242$), which implies full mediation.

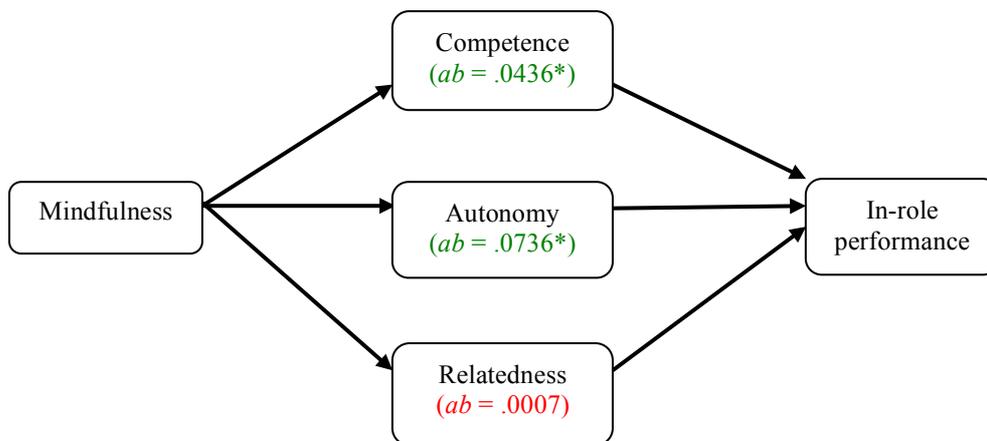


Figure 7. The effect of ethical leadership on in-role performance, mediated by competence and autonomy.

Table 14

Direct and indirect effect(s) of ethical leadership on in-role performance, mediated by competence and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|---|---------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 352) = 4.4798^{**}$ | | | .0484 ^{**} | |
| Main effect on the first mediator variable: competence | | | | |
| Ethical leadership | .1275 ^{**} | .0467 | | |
| Gender ^a | -.1095 | .0642 | | |
| Sector ^b | .1041 | .0700 | | |
| Tenure with leader | .0093 | .0054 | | |
| Model 2: $F(5, 351) = 11.6850^{**}$ | | | .1427 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Competence | .3945 ^{**} | .0721 | | |
| Ethical leadership | .2852 ^{**} | .0639 | | |
| Gender ^a | .0231 | .0873 | | |
| Sector ^b | .0169 | .0951 | | |
| Tenure with leader | -.0020 | .0073 | | |
| Model 3: $F(6, 350) = 14.4587^{**}$ | | | .1986 ^{**} | |
| Main effect on the dependent variable: in-role performance | | | | |
| Intrinsic motivation | -.0201 | .0283 | | |
| Competence | .3418 ^{**} | .0398 | | |
| Ethical leadership | .0409 | .0348 | | |
| Gender ^a | -.0072 | .0462 | | |
| Sector ^b | -.0871 | .0503 | | |
| Tenure with leader | .0029 | .0039 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on in-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| Dir1 (ELW > INPERF) | .0409 | .0348 | -.0275 | .1092 |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Indirect</i> | | | | |
| Total: | .0369 | .0234 | -.0105 | .0841 |
| Ind1 (ELW > COMP > INPERF): | .0436* | .0201 | .0074 | .0862 |
| Ind2 (ELW > COMP > INTRMOT > INPERF): | -.0010 | .0022 | -.0061 | .0026 |
| Ind3 (ELW > INTRMOT > INPERF): | -.0057 | .0117 | -.0320 | .0150 |

Notes. $N = 357$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 15

Direct and indirect effect(s) of ethical leadership on in-role performance, mediated by autonomy and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|---|----------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 352) = 20.2641^{**}$ | | | .1872 ^{**} | |
| Main effect on the first mediator variable: autonomy | | | | |
| Ethical leadership | .3798 ^{**} | .0469 | | |
| Gender ^a | -.2571 ^{**} | .0645 | | |
| Sector ^b | -.0522 | .0704 | | |
| Tenure with leader | .0004 | .0054 | | |
| Model 2: $F(5, 351) = 24.0430^{**}$ | | | .2551 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Autonomy | .6245 ^{**} | .0669 | | |
| Ethical leadership | .0979 | .0642 | | |
| Gender ^a | .1407 | .0828 | | |
| Sector ^b | .0905 | .0884 | | |
| Tenure with leader | .0014 | .0068 | | |
| Model 3: $F(6, 350) = 4.8928^{**}$ | | | .0774 ^{**} | |
| Main effect on the dependent variable: in-role performance | | | | |
| Intrinsic motivation | -.0138 | .0325 | | |
| Autonomy | .1939 ^{**} | .0456 | | |
| Ethical leadership | .0087 | .0392 | | |
| Gender ^a | .0054 | .0507 | | |
| Sector ^b | -.0418 | .0540 | | |
| Tenure with leader | .0060 | .0042 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on in-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (ELW > INPERF) | .0087 | .0392 | -.0685 | .0859 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0690* | .0205 | .0335 | .1117 |
| Ind1 (ELW > AUTON > INPERF): | .0736* | .0205 | .0380 | .1221 |
| Ind2 (ELW > AUTON > INTRMOT > INPERF): | -.0033 | .0119 | -.0295 | .0184 |
| Ind3 (ELW > INTRMOT > INPERF): | -.0014 | .0062 | -.0227 | .0070 |

Notes. $N = 357$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 16

Direct and indirect effect(s) of ethical leadership on in-role performance, mediated by relatedness and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|---|---------------------|---------|---------------------|-----------|
| Model 1: $F(4, 348) = 4.8689^{**}$ | | | .0530 ^{**} | |
| Main effect on the first mediator variable: relatedness | | | | |
| Ethical leadership | .1981 ^{**} | .0476 | | |
| Gender ^a | .0605 | .0654 | | |
| Sector ^b | .1002 | .0716 | | |
| Tenure with leader | .0009 | .0055 | | |
| Model 2: $F(5, 347) = 10.8324^{**}$ | | | .1350 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Relatedness | .3667 ^{**} | .0720 | | |
| Ethical leadership | .2658 ^{**} | .0655 | | |
| Gender ^a | -.0406 | .0881 | | |
| Sector ^b | .0092 | .0965 | | |
| Tenure with leader | .0013 | .0074 | | |
| Model 3: $F(6, 346) = 1.7913$ | | | .0301 | |
| Main effect on the dependent variable: in-role performance | | | | |
| Intrinsic motivation | .0479 | .0312 | | |
| Relatedness | .0035 | .0434 | | |
| Ethical leadership | .0631 | .0389 | | |
| Gender ^a | -.0441 | .0512 | | |
| Sector ^b | -.0546 | .0560 | | |
| Tenure with leader | .0059 | .0043 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on in-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| Dir1 (ELW > INPERF) | .0631 | .0389 | -.0135 | .1396 |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Indirect</i> | | | | |
| Total: | .0169 | .0184 | -.0121 | .0639 |
| Ind1 (ELW > RELAT > INPERF): | .0007 | .0106 | -.0189 | .0240 |
| Ind2 (ELW > RELAT > INTRMOT > INPERF): | .0035 | .0037 | -.0025 | .0127 |
| Ind3 (ELW > INTRMOT > INPERF): | .0127 | .0144 | -.0097 | .0458 |

Notes. $N = 353$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

In contrast, ethical leadership did indirectly influenced extra-role performance through need fulfillment (competence, autonomy, relatedness) and intrinsic motivation. This is shown in Figure 8 and Tables 17, 18 and 19. In more detail:

- A bootstrap confidence interval for the indirect effect through competence and intrinsic motivation ($ab = .0067$) based on 1000 bootstrap samples was entirely above zero (.0006 to .0205) (Table 17).
- A bootstrap confidence interval for the indirect effect through autonomy and intrinsic motivation ($ab = .0314$) based on 1000 bootstrap samples was entirely above zero (.0060 to .0594) (Table 18).
- A bootstrap confidence interval for the indirect effect through relatedness and intrinsic motivation ($ab = .0115$) based on 1000 bootstrap samples was entirely above zero (.0045 to .0260) (Table 19).

There was no evidence that ethical leadership influenced job satisfaction independent of its effect on competence and intrinsic motivation ($c' = .0417, p = .2905$), autonomy and intrinsic motivation ($c' = .0116, p = .7879$), and relatedness and intrinsic motivation ($c' = .0503, p = .2296$). This implies full mediation. So, viewing H2b separately for in-role and extra-role performance, this hypothesis can again only be confirmed for extra-role performance.

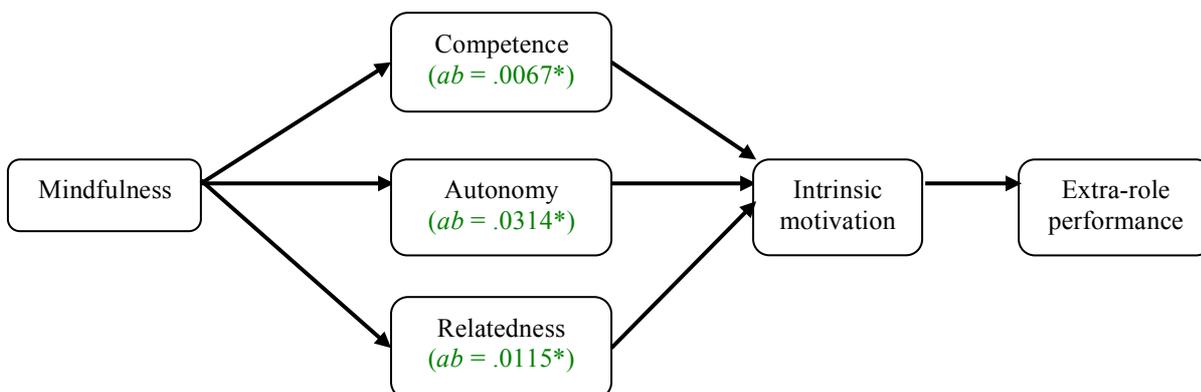


Figure 8. The effect of ethical leadership on extra-role performance, mediated by need fulfillment and intrinsic motivation.

Table 17

Direct and indirect effect(s) of ethical leadership on extra-role performance, mediated by competence and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|---------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 351) = 4.4858^{**}$ | | | .0486 ^{**} | |
| Main effect on the first mediator variable: competence | | | | |
| Ethical leadership | .1276 ^{**} | .0468 | | |
| Gender ^a | -.1115 | .0644 | | |
| Sector ^b | .1061 | .0703 | | |
| Tenure with leader | .0091 | .0054 | | |
| Model 2: $F(5, 350) = 11.5939^{**}$ | | | .1421 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Competence | .4017 ^{**} | .0739 | | |
| Ethical leadership | .2918 ^{**} | .0655 | | |
| Gender ^a | .0128 | .0895 | | |
| Sector ^b | .0192 | .0977 | | |
| Tenure with leader | -.0050 | .0075 | | |
| Model 3: $F(6, 349) = 15.0337^{**}$ | | | .2054 ^{**} | |
| Main effect on the dependent variable: extra-role performance | | | | |
| Intrinsic motivation | .1312 ^{**} | .0313 | | |
| Competence | .2848 ^{**} | .0450 | | |
| Ethical leadership | .0417 | .0394 | | |
| Gender ^a | .0055 | .0523 | | |
| Sector ^b | .0072 | .0571 | | |
| Tenure with leader | .0000 | .0044 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on extra-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (ELW > EXPERF) | .0417 | .0394 | -.0357 | .1191 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0813* | .0270 | .0268 | .1345 |
| Ind1 (ELW > COMP > EXPERF): | .0363* | .0168 | .0065 | .0746 |
| Ind2 (ELW > COMP > INTRMOT > EXPERF): | .0067* | .0049 | .0006 | .0205 |
| Ind3 (ELW > INTRMOT > EXPERF): | .0383* | .0194 | .0097 | .0871 |

Notes. $N = 356$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 18

Direct and indirect effect(s) of ethical leadership on extra-role performance, mediated by autonomy and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|----------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 351) = 20.1209^{**}$ | | | .1865 ^{**} | |
| Main effect on the first mediator variable: autonomy | | | | |
| Ethical leadership | .3792 ^{**} | .0470 | | |
| Gender ^a | -.2546 ^{**} | .0647 | | |
| Sector ^b | -.0534 | .0706 | | |
| Tenure with leader | .0006 | .0054 | | |
| Model 2: $F(5, 350) = 22.1128^{**}$ | | | .2401 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Autonomy | .6134 ^{**} | .0693 | | |
| Ethical leadership | .1104 | .0664 | | |
| Gender ^a | .1242 | .0857 | | |
| Sector ^b | .0945 | .0917 | | |
| Tenure with leader | -.0017 | .0070 | | |
| Model 3: $F(6, 349) = 9.7696^{**}$ | | | .1438 ^{**} | |
| Main effect on the dependent variable: extra-role performance | | | | |
| Intrinsic motivation | .1351 ^{**} | .0345 | | |
| Autonomy | .1716 ^{**} | .0494 | | |
| Ethical leadership | .0116 | .0430 | | |
| Gender ^a | .0175 | .0554 | | |
| Sector ^b | .0319 | .0592 | | |
| Tenure with leader | .0025 | .0045 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on extra-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (ELW > EXPERF) | .0116 | .0430 | -.0730 | .0961 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .1114* | .0283 | .0620 | .1739 |
| Ind1 (ELW > AUTON > EXPERF): | .0651* | .0216 | .0318 | .1215 |
| Ind2 (ELW > AUTON > INTRMOT > EXPERF): | .0314* | .0135 | .0060 | .0594 |
| Ind3 (ELW > INTRMOT > EXPERF): | .0149 | .0142 | -.0042 | .0541 |

Notes. $N = 356$; * $p < .05$; ** $p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 19

Direct and indirect effect(s) of ethical leadership on extra-role performance, mediated by relatedness and intrinsic motivation

| Predictor variable | Coeff. | SE | R ² | |
|--|--------------------------|--------------|---------------------|--------------|
| Model 1: $F(4, 347) = 4.8820^{**}$ | | | .0533 ^{**} | |
| Main effect on the first mediator variable: relatedness | | | | |
| Ethical leadership | .1987 ^{**} | .0476 | | |
| Gender ^a | .0659 | .0655 | | |
| Sector ^b | .0945 | .0718 | | |
| Tenure with leader | .0012 | .0055 | | |
| Model 2: $F(5, 346) = 10.1009^{**}$ | | | .1274 ^{**} | |
| Main effect on the second mediator: intrinsic motivation | | | | |
| Relatedness | .3527 ^{**} | .0743 | | |
| Ethical leadership | .2760 ^{**} | .0674 | | |
| Gender ^a | -.0536 | .0907 | | |
| Sector ^b | .0165 | .0996 | | |
| Tenure with leader | -.0018 | .0076 | | |
| Model 3: $F(6, 345) = 8.4572^{**}$ | | | .1282 ^{**} | |
| Main effect on the dependent variable: extra-role performance | | | | |
| Intrinsic motivation | .1644 ^{**} | .0326 | | |
| Relatedness | .1099 [*] | .0464 | | |
| Ethical leadership | .0503 | .0418 | | |
| Gender ^a | -.0360 | .0550 | | |
| Sector ^b | -.0035 | .0603 | | |
| Tenure with leader | .0028 | .0046 | | |
| Serial multiple mediation model | | | | |
| Bootstrap results for the direct and indirect effects of mindfulness on extra-role performance | | | | |
| | Effect | Boot SE | LL 95% CI | UL 95% CI |
| <i>Direct</i> | | | | |
| | <i>c'</i> | | | |
| Dir1 (ELW > EXPERF) | .0503 | .0418 | -.0319 | .1326 |
| <i>Indirect</i> | | | | |
| | <i>ab</i> | | | |
| Total: | .0787 [*] | .0284 | .0325 | .1435 |
| Ind1 (ELW > RELAT > EXPERF): | .0218 [*] | .0121 | .0035 | .0536 |
| Ind2 (ELW > RELAT > INTRMOT > EXPERF): | .0115[*] | .0049 | .0045 | .0260 |
| Ind3 (ELW > INTRMOT > EXPERF): | .0454 [*] | .0224 | .0132 | .0998 |

Notes. $N = 352$; $*p < .05$; $**p < .01$.

Bootstrap sample size = 1000; LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Hypothesis testing (moderation)

In addition to the serial multiple mediation analyses as presented in the previous section, moderation analyses were done to see whether ethical leadership strengthens the effect of mindfulness on need fulfillment (competence, autonomy, relatedness) (H3). A simple moderation model was used to test the hypothesis, because there is no model in *PROCESS* that combines simple moderation with serial multiple mediation (Hayes, 2013). Template 1 (Appendix 3) illustrates this simple moderation model.

In Figure 9 and Tables 20, 21 and 22 the outcomes of the analyses are presented. The findings seem to indicate that ethical leadership indeed strengthens the effect of mindfulness on need fulfillment (competence, autonomy, relatedness). However, the overall interaction terms were not significant. So, ethical leadership and mindfulness do not interact in predicting competence ($c'_{mod} = -.0987$, n.s.), autonomy ($c'_{mod} = .0770$, n.s.) and relatedness ($c'_{mod} = -.0424$, n.s.). As such, H3 cannot be supported.

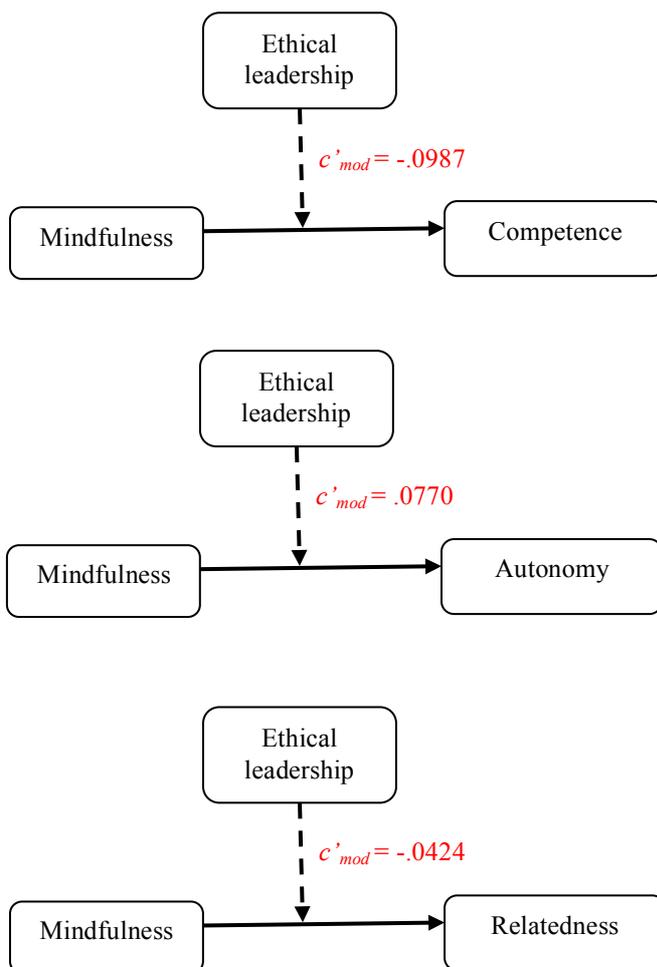


Figure 9. The effects of mindfulness on need fulfillment (competence, autonomy, relatedness), moderated by ethical leadership

Table 20

Conditional direct effect of mindfulness on competence, moderated by ethical leadership

| Predictor variable | Coeff. | SE | R ² | |
|--|--------|-------|---------------------|-----------|
| Model: $F(6, 364) = 12.3476^{**}$ | | | .1691 ^{**} | |
| Main effect on the dependent variable: competence | | | | |
| Ethical leadership | .5504 | .3057 | | |
| Mindfulness | .6783* | .2629 | | |
| Mindfulness * Ethical leadership (c'_{mod}) | -.0987 | .0704 | | |
| Gender ^a | -.0122 | .0603 | | |
| Sector ^b | .0725 | .0651 | | |
| Tenure with leader | .0051 | .0050 | | |
| Simple slope moderation analysis | | | | |
| Conditional direct effect of mindfulness on competence by ethical leadership | | | | |
| ELW | Effect | SE | LL 95% CI | UL 95% CI |
| 2.9728 (-1SD) | .3850* | .0665 | .2541 | .5158 |
| 3.6189 (SD) | .3212* | .0441 | .2345 | .4079 |
| 4.2650 (+1SD) | .2574* | .0599 | .1396 | .3753 |

Notes. $N = 371$; * $p < .05$; ** $p < .01$.

LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 21

Conditional direct effect of mindfulness on autonomy, moderated by ethical leadership

| Predictor variable | Coeff. | SE | R ² | |
|--|---------|-------|---------------------|-----------|
| Model: $F(6, 364) = 15.9085^{**}$ | | | .2078 ^{**} | |
| Main effect on the dependent variable: autonomy | | | | |
| Ethical leadership | .0466 | .3297 | | |
| Mindfulness | -.1072 | .2836 | | |
| Mindfulness * Ethical leadership (c'_{mod}) | .0770 | .0759 | | |
| Gender ^a | -.1821* | .0650 | | |
| Sector ^b | -.0514 | .0702 | | |
| Tenure with leader | -.0013 | .0054 | | |
| Simple slope moderation analysis | | | | |
| Conditional direct effect of mindfulness on autonomy by ethical leadership | | | | |
| ELW | Effect | SE | LL 95% CI | UL 95% CI |
| 2.9728 (-1SD) | .1216 | .0718 | -.0195 | .2628 |
| 3.6189 (SD) | .1713* | .0475 | .0779 | .2648 |
| 4.2650 (+1SD) | .2211* | .0646 | .0940 | .3482 |

Notes. $N = 371$; * $p < .05$; ** $p < .01$.

LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Table 22

Conditional direct effect of mindfulness on relatedness, moderated by ethical leadership

| Predictor variable | Coeff. | SE | R ² | |
|---|--------|-------|---------------------|-----------|
| Model: $F(6, 360) = 4.9072^{**}$ | | | .0756 ^{**} | |
| Main effect on the dependent variable: relatedness | | | | |
| Ethical leadership | .3872 | .3288 | | |
| Mindfulness | .2785 | .2827 | | |
| Mindfulness * Ethical leadership (c'_{mod}) | -.0424 | .0756 | | |
| Gender ^a | .0873 | .0648 | | |
| Sector ^b | .0869 | .0702 | | |
| Tenure with leader | .0002 | .0054 | | |
| Simple slope moderation analysis | | | | |
| Conditional direct effect of mindfulness on relatedness by ethical leadership | | | | |
| ELW | Effect | SE | LL 95% CI | UL 95% CI |
| 2.9743 (-1SD) | .1525* | .0715 | .0120 | .2931 |
| 3.6213 (SD) | .1251* | .0472 | .0322 | .2180 |
| 4.2683 (+1SD) | .0977 | .0644 | -.0288 | .2242 |

Notes. $N = 367$; * $p < .05$; ** $p < .01$.

LL = lower limit; CI = confidence interval; UL = upper limit.

^a 0 = men, 1 = women

^b 0 = service, 1 = manufacturing

Conclusion and discussion

The aim of this study was to investigate the role of mindfulness in work settings. Two perspectives were taken to explain how mindfulness relates to two broad, work-related outcomes. Self-determination theory (SDT) was used to explain the main effects of mindfulness in predicting job satisfaction and job performance (in-role, extra-role). Second, conditions that might enhance the effectiveness of mindfulness in work settings were considered. In a diverse sample of employees in different jobs and organizations, it was found that need fulfillment (competence, autonomy, relatedness) and intrinsic motivation were the underlying processes explaining how both mindfulness and ethical leadership result in job satisfaction. With regard to job performance, different outcomes were found for in-role and extra-role performance. Mindfulness and ethical leadership resulted in in-role performance, but only through the needs for competence and autonomy. Mindfulness and ethical leadership also resulted in extra-role performance, but here need fulfillment (competence, autonomy, relatedness) and intrinsic motivation were indeed the underlying constructs. Ethical leadership, as an environmental factor, did not interact with mindfulness in predicting need fulfillment (competence, autonomy, relatedness). This indicates that the presence of an ethical leader does not have added value for the effectiveness of mindfulness. In the following section, these findings will be discussed in greater detail.

Discussion of research findings

The first set of hypotheses was formulated to test if need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediated between mindfulness and job satisfaction (H1a), and ethical leadership and job satisfaction (H2a). The analyses supported hypothesis 1a, confirming that mindful individuals are more likely to fulfill their needs due to an open awareness. This will enhance intrinsic motivation, which in turn results in job satisfaction (Brown & Ryan, 2003; Brown et al., 2007; Deci & Ryan, 2008; Gagné & Deci, 2005; Ilardi et al., 1993; Niemiec et al., 2008; Ryan & Deci, 2008; Ryan et al., 2008; Weinstein & Ryan, 2011). The analyses also supported hypothesis 2a, confirming that having an ethical leader helps employees to satisfy their needs. This corresponds with the earlier proposed argument that ethical leaders, with the characteristics of people-orientation, power sharing, fairness and role clarification, support need fulfillment (De Hoogh & Den Hartog, 2008; Deci et al., 2001; Kalshoven et al., 2011; Reb et al., 2014; Ryan & Deci, 2000; Zhu et al., 2004). Consequently,

intrinsic motivation will enhance, which results in job satisfaction (Gagné & Deci, 2005; Ilardi et al., 1993).

The second set of hypotheses was formulated to test if need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediated between mindfulness and job performance (in-role, extra-role) (H1b), and ethical leadership and job performance (in-role, extra-role) (H2b). Here, a distinction needed to be made between both types of performance, because closer inspection of the outcomes revealed different mediating effects for in-role and extra-role performance. With regard to in-role performance, only the needs for competence and autonomy functioned as mediators. Earlier research supports this divergent finding. Greguras and Diefendorff (2009) found that employees, who perceive that they have the right skills and abilities to do their job, experience a sense of competence. Satisfaction of the need for competence will then affect the environment in terms of improved in-role performance. The same logic applies for autonomy. Employees' own autonomy orientation and the perception of their manager's autonomy support contribute to satisfaction of the need for autonomy, which in turn enhances in-role performance (Baard, Deci, & Ryan, 2004). Intrinsic motivation is absent in these relationships though, which can be explained with the concept of job resources. Job resources are all physical, psychological, social and organizational aspects of the job that support work goal achievement and stimulate personal growth, learning and development (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). It is argued that job resources are motivational in itself, which directly leads to high work engagement, lower absenteeism and turnover, and excellent performance (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). Since competence and autonomy are seen as job resources (Bakker & Demerouti, 2007), it is likely that they directly contribute to in-role performance. This implies that intrinsic motivation is not required for in-role performance. Relatedness is not required for in-role performance either. That is because antecedents of in-role performance usually involve cognitive ability (competence, autonomy) rather than personality (relatedness) (Borman & Motowidlo, 1997).

In contrast, need fulfillment (competence, autonomy, relatedness) and intrinsic motivation did mediate between mindfulness and extra-role performance, and ethical leadership and extra-role performance, which can be explained as follows. Extra-role performance is not formally rewarded. As such, an intrinsic, self-generated motivation is required to perform behaviors beyond formal duties, also known as extra-role behaviors (Demerouti, 2006; Piccolo & Colquitt, 2006). Intrinsic motivation is thus key in explaining why employees perform extra-role behaviors in particular. Since need fulfillment

(competence, autonomy, relatedness) enhances intrinsic motivation (Gagné & Deci, 2005; Ilardi et al., 1993), it is logical that these concepts mediate between mindfulness and extra-role performance, and ethical leadership and extra-role performance.

The final hypothesis was formulated to verify whether or not ethical leadership, as a conditional factor, would moderate the relationship between mindfulness and need fulfillment (competence, autonomy, relatedness) (H3). More specifically, it was expected that having an ethical leader would strengthen the relationship between mindfulness and need fulfillment. This expectation could not be supported though, which indicates that ethical leadership does not compensate for a lack of mindfulness. As such, it seems that both ethical leadership and mindfulness have unique effects on need fulfillment. This direct effect of ethical leadership on need fulfillment is supported by Deci et al. (2001), Reb et al. (2014) and Zhu et al. (2014) who argue that ethical leaders in particular will support the satisfaction of need as they better recognize the needs of their employees. Thus, ethical leadership and mindfulness both contribute to need fulfillment, but they do not interact with each other in further stimulating the satisfaction of needs.

Theoretical implications and future research

To review, the outcomes of this study confirm that SDT is an important theory in understanding how mindfulness results in work-related outcomes. Need fulfillment (competence, autonomy, relatedness) and intrinsic motivation mediated between mindfulness and job satisfaction, and mindfulness and extra-role performance. As such, the use of SDT adds insight in the motivational process underlying these relationships. However, for in-role performance, another explanation is needed. The outcomes of this research also show that ethical leadership and mindfulness have similar effects on job satisfaction, in-role performance and extra-role performance. These findings hold several suggestions for future research, which will be outlined here.

First, other researchers suggested that mindfulness is a multi-dimensional concept. Malinowski and Lim (2015) used the Five-Factor Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) to identify non-reactivity and non-judging as important mindfulness skills in the workplace. To better understand the role of mindfulness in work settings it would be worthwhile to use such a multi-dimensional measure to further investigate which specific dimensions are most important in relation to work contexts.

Additionally, future research could focus on understanding why individuals differ on mindfulness. Based on for example interpersonal (trait) or intrapersonal (state) differences,

personality trait differences (neuroticism, conscientiousness), dispositions and mental models (De Vibe et al., 2015; Hyland, Lee, & Mills, 2015), and differences in gender, education, function and work-family conflict, it could be identified who benefits most from the positive effects of mindfulness.

Despite such positive effects of mindfulness, as shown in this study, un-intended results that are not necessarily beneficial for the organization might exist as well. For example, mindfulness may reduce the automaticity with which employees fulfill their tasks (Hyland et al., 2015), which is beneficial for some organizations (e.g. decision-making) but not for others (e.g. production). Besides, mindfulness allows employees to become more aware of their values and interests, and favor behaviors that do not necessarily contribute to organizational success in the short term like a more relaxed approach, better work-family balance and less extra work duties (Glomb et al., 2011; Hyland et al., 2015). This will still benefit organizations in the long run due to happier employees. In short, it takes time before organizations can actually see the advantages of mindful employees, which asks for longitudinal study designs in the future.

Next, Ryan and Deci (2000) argue that need fulfillment and motivational processes as well as the influence of mindfulness could differ across cultures. Hyland et al. (2015) argue that cultural differences could indeed influence the effects of mindfulness; employees from different backgrounds react differently to mindfulness. As today's workplaces are largely globalizing, this is very important to consider. Thus, it would be interesting to replicate this research abroad.

A final suggestion would be to see how mindful employees react when they have a different type of leader since having an ethical leader did not affect need satisfaction. A suggestion would be to choose a leadership style that does not focus on need fulfillment at all in order to see how mindful employees cope with such diverging behaviors. Despotic leadership for example, which is characterized by insensitivity to employees' needs, exploitation, self-absorption and lack of moral standards (De Hoogh & Den Hartog, 2008). Will mindful employees then still be able to satisfy their needs or will unethical behavior have a negative influence on need fulfillment? Future research could thus place this research in a context of despotic leadership to see how another type of leadership will influence the outcomes found in the current study. Another suggestion could be to see if mindful employees have the ability to compensate for such a lack of focus on need fulfillment by proposing mindfulness as a moderator in the relationship between despotic leadership and need fulfillment.

Strengths and limitations

This study is the first to investigate the importance of mindfulness for work related outcomes in a substantial sample of employees across diverse jobs and sectors in the Netherlands. This was achieved with a snowball sample, causing fewer sampling errors (Smith & Smith, 2005). At the same time however, snowball sampling is seen as “a biased sampling technique because it is not random and it selects individuals on the basis of social networks” (Browne, 2005, p. 51). It is not possible to calculate a response rate either and respondents with a negative research experience might have discouraged potential respondents to participate (Browne, 2005). This wasn’t such a big problem though as many employees filled in the questionnaire.

The cross-sectional design of this study implies that causal relationships cannot be tested, so directionality of relationships was assumed. Thereby a longitudinal design (experiment, daily fluctuations, diary study) or random assignment is required to test for causality of the confirmed relationships and patterns of change (Singleton Jr. & Straits, 2005).

Another limitation is the use of self-report measures. Hereby, common method variance (i.e. variance caused by measurement method instead of the constructs; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) might have had an influence. Yet, for all model variables except job performance, the use of self-reports is justified as they focus on subjective experiences like knowledge, beliefs, feelings, attitudes, opinions, and perceptions (Singleton Jr. & Straits, 2005). With regard to job performance, a more objective measure could be used in future research. Examples are manager ratings, assessments, 360° feedback (Smith & Smith, 2005), and even sales or revenue growth (Walumbwa et al., 2009). Nonetheless, it is argued that well developed measures, as the ones used here, are resistant to common source bias (Spector, 2006). Besides, respondents were informed about anonymous participation, and interaction hypotheses were tested, which are both ways to minimize common method bias (Podsakoff, MacKenzie, & Podsakoff, 2012; Spector, 2006).

Important to notice is that some changes were made to the ethical leadership scale. Two fairness items did not load on the fairness dimension of ethical leadership. Besides, Cronbach’s α would be higher after removing both items, so the items were removed. It is therefore difficult to compare the current study with other studies that used the complete scale.

Further, some remarks can be made to the length of the questionnaire. Some respondents largely exceeded the indicated time to fill in the questionnaire. Distractions in the respondents’ environment might have caused this delay. Those who were motivated to participate might also have dropped out when the questionnaire appeared to be longer than expected. This could

explain why most missing values were grouped at the end of the questionnaire. Additionally, answers to questions at the end of the questionnaire might have been faster, shorter and more uniform, thus less adequate, due to fatigue and boredom (Gales & Bosnjak, 2009). Nevertheless, most respondents completed the questionnaire within the indicated time.

A final limitation could be that some employees faced a period of organizational change while filling in the questionnaire. This might have influenced their perceptions. For example, employees can express resistance to change by exposing dysfunctional attitudes and behaviors (Avey, Wernsing, & Luthans, 2008). This could have influenced employees' scores on the scales need fulfillment (competence, autonomy, relatedness), job satisfaction, job performance (in-role, extra-role) and ethical leadership. However, mindfulness might have tempered such negative feelings through enlarged awareness of present thoughts and feelings, as Avey et al. (2008) state. Besides, mindfulness can enhance readiness for change "by making employees' attitudes and perceived experience more flexible" (Gärtner, 2013, p. 52). Thus, mindfulness might have compensated for potential negative effects of respondents who faced organizational change. As such, organizational change might not have been an issue.

Despite these limitations the present study may provide some valuable insights for the existing literature on mindfulness and SDT. In addition, some practical implications can be drawn from the current research findings. These will be outlined below.

Practical implications

This study has shown the importance of mindfulness in work settings in terms of satisfaction of basic needs, enhanced intrinsic motivation, more job satisfaction and improved in-role and extra-role performance. These outcomes imply that mindfulness can be beneficial for both employers and employees. As such, organizations could promote mindfulness and its benefits among the existing workforce. Once employees are more aware of what mindfulness is they might be more open to accept and use such a different approach. Organizations do have a responsibility here since organizational support is needed to provide employees with the necessary resources to be mindful (Reb, Narayanan, & Ho, 2015). Thus, organizations could support the use and development of mindfulness skills in the workplace.

Although being mindful is not the first criterion to select applicants, less mindful employees are still valuable for the organization; it could be worthwhile to consider incorporating a mindfulness test in the selection procedure to indicate how mindful applicants already are. This might give insight in the extent to which the organization has to invest in developing mindfulness skills once a certain applicant is hired. Mindfulness would then be

measured as a trait and can easily be added to existing selection procedures since personality traits are already frequently tested.

The current study has also shown that ethical leadership can be a valuable asset for organizations as well. That is because the presence of an ethical leader has outcomes similar to those of having mindful employees. So, rather than focusing on and investing in the development of mindfulness skills, organizations could also hire and/or develop ethical leaders.

In conclusion, the present research implies that a) both mindfulness and ethical leadership are important in predicting job satisfaction and extra-role performance, b) need fulfillment (competence, autonomy, relatedness) and intrinsic motivation are the processes that underlay these relationships, and c) only satisfaction of the needs for competence and autonomy is necessary for mindfulness and ethical leadership to predict in-role performance.

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Welkom bij deze vragenlijst

Beste deelnemer,

hartelijk dank voor uw medewerking aan dit onderzoek van mijn masterscriptie voor de opleiding Human Resource Studies aan Tilburg University.

Dit onderzoek focust op de rol van sociale relaties in organisaties; hoe deze relaties tot stand komen en het belang van sociale relaties voor organisaties en werknemers.

Een relevant onderwerp, want hoe belangrijk zijn collega's en leidinggevendenden nu precies voor werk en welzijn?

Het invullen van de vragenlijst kost u ongeveer 10 minuten. Vul de vragen vlot in, denk niet te lang na. Geef het antwoord dat als eerste in u opkomt. Er zijn geen foute antwoorden.

Deelname is anoniem en de resultaten zullen enkel gebruikt worden voor onderzoeksdoeleinden.

Bij vragen kunt u contact opnemen via onderstaande gegevens.

Veel succes!

Charlotte Menting
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Algemene vragen

1. Wat is uw geslacht?

- Man Vrouw

2. In welk jaar bent u geboren? _____

3. Wat is uw hoogst genoten, afgeronde opleiding?

- VMBO MBO
 HAVO HBO
 VWO WO
 Anders, namelijk _____

4. In welke sector bent u werkzaam?

Kies het best passende antwoord

- | | |
|---|---|
| <input type="checkbox"/> Gezondheidszorg | <input type="checkbox"/> Logistiek / Transportsector |
| <input type="checkbox"/> Wetenschap | <input type="checkbox"/> Agrarische sector |
| <input type="checkbox"/> Onderwijs / Educatie | <input type="checkbox"/> Zakelijke / Financiële dienstverlening |
| <input type="checkbox"/> Industriële sector | <input type="checkbox"/> Consultancy |
| <input type="checkbox"/> Bouw | <input type="checkbox"/> Media |
| <input type="checkbox"/> Juridische sector | <input type="checkbox"/> Kunst / Cultuur |
| <input type="checkbox"/> IT sector | <input type="checkbox"/> Voedingsindustrie |
| <input type="checkbox"/> Handel | <input type="checkbox"/> Horeca |
| <input type="checkbox"/> Overheid | <input type="checkbox"/> Anders, namelijk _____ |

5. Hoe lang bent u werkzaam in uw huidige organisatie? _____ jaar

6. Wat voor type contract heeft u?

- Vast
 Tijdelijk met uitzicht op vast
 Tijdelijk
 Uitzend/detachering
 Anders, namelijk _____

7. Heeft u een leidinggevende?

- Ja Nee

8. Hoe lang werkt u voor uw huidige leidinggevende? _____ jaar

9. Geeft u zelf leiding?

- Ja Nee

10. Werkt u veel samen met anderen (collega's, leidinggevend) in uw functie?

- Ja Nee

Dagelijkse ervaringen

Onderstaande vragen gaan over uw dagelijkse ervaringen in het algemeen. Kies het cijfer dat het beste aangeeft hoe vaak u een bepaalde ervaring heeft. Belangrijk hierbij is dat u aangeeft wat uw ervaring écht is in plaats van hoe het wellicht zou moeten zijn volgens u.

| 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|--------|-----------|------------|------|--------------|
| Bijna nooit | Zelden | Niet vaak | Regelmatig | Vaak | Bijna altijd |

11. Ik kan een emotie ervaren en mij daar pas later bewust van zijn. 1 2 3 4 5 6
12. Ik breek of mors dingen door onzorgvuldigheid, onoplettendheid of doordat ik er met mijn gedachten niet bij ben. 1 2 3 4 5 6
13. Ik vind het moeilijk om mijn aandacht te houden bij wat er op dit moment gaande is. 1 2 3 4 5 6
14. Ik heb de neiging snel naar mijn bestemming te lopen, zonder aandacht te schenken aan wat ik onderweg meemaak. 1 2 3 4 5 6
15. Ik merk lichamelijk spanning of ongemak pas op als deze echt mijn aandacht trekken. 1 2 3 4 5 6
16. Ik vergeet iemands naam bijna meteen als ik die voor de eerste keer hoor. 1 2 3 4 5 6
17. Het lijkt er op dat ik dingen automatisch doe zonder mij erg bewust te zijn van wat ik aan het doen ben. 1 2 3 4 5 6
18. Ik voer activiteiten haastig uit, zonder er echt aandacht aan te schenken. 1 2 3 4 5 6
19. Ik ben zo gericht op een doel, dat ik het zicht verlies op wat ik op dit moment aan het doen ben om dat te bereiken. 1 2 3 4 5 6
20. Ik doe klussen en taken automatisch, zonder mij bewust te zijn van wat ik aan het doen ben. 1 2 3 4 5 6
21. Ik merk dat ik met een half oor naar iemand luister en ondertussen met iets anders bezig ben. 1 2 3 4 5 6
22. Ik ga op 'automatisch piloot' ergens heen en vraag mij dan af waarom ik daar ook alweer heen ging. 1 2 3 4 5 6
23. Ik merk dat ik erg bezig ben met de toekomst of het verleden. 1 2 3 4 5 6
24. Ik merk dat ik dingen doe, zonder er aandacht aan te besteden. 1 2 3 4 5 6
25. Ik eet haastig zonder er bewust van te zijn dat ik aan het eten ben. 1 2 3 4 5 6

Werkbeleving

Onderstaande vragen gaan over hoe u verschillende aspecten van uw werk beleeft. Kies het antwoord dat het beste past bij uw beleving, zoals u die écht ervaart.

| 1 | 2 | 3 | 4 | 5 |
|------------------------|------------|----------|----------|----------------------|
| Helemaal mee oneens | Mee oneens | Neutraal | Mee eens | Helemaal mee eens |

26. Ik heb het gevoel dat ik mezelf kan zijn in mijn werk. 1 2 3 4 5
27. Op mijn werk heb ik vaak het gevoel dat ik moet doen wat anderen mij bevelen. 1 2 3 4 5
28. Als ik mocht kiezen, dan zou ik mijn werk anders aanpakken. 1 2 3 4 5
29. Mijn taken op het werk stemmen overeen met wat ik echt wil doen. 1 2 3 4 5
30. Ik voel me vrij mijn werk te doen zoals ik denk dat het goed is. 1 2 3 4 5
31. Op mijn werk, voel ik me gedwongen dingen te doen die ik niet wil. 1 2 3 4 5
32. Ik voel me niet echt competent in mijn werk. 1 2 3 4 5
33. Ik heb de taken op mijn werk goed onder de knie. 1 2 3 4 5
34. Ik voel me bekwaam in mijn werk. 1 2 3 4 5
35. Ik twijfel eraan of ik mijn werk goed kan uitvoeren. 1 2 3 4 5
36. Ik ben goed in mijn werk. 1 2 3 4 5
37. Ik heb het gevoel dat ik ook de moeilijkste taken op mijn werk tot een goed einde kan brengen. 1 2 3 4 5
38. Ik voel niet echt een band met de andere mensen op mijn werk. 1 2 3 4 5
39. Ik voel me een deel van een groep op het werk. 1 2 3 4 5
40. Ik ga niet echt met de andere mensen op mijn werk om. 1 2 3 4 5
41. Ik kan met anderen op het werk praten over wat ik echt belangrijk vind. 1 2 3 4 5
42. Ik voel me vaak alleen als we onder collega's zijn. 1 2 3 4 5
43. De mensen op mijn werk zijn echte vrienden. 1 2 3 4 5
44. Alles overwegende ben ik tevreden met mijn functie. 1 2 3 4 5

Werkgedrag

De volgende vragen gaan over hoe u omgaat met uw werk en de bezigheden die daarbij komen kijken. Geef hiertoe aan in hoeverre onderstaande vragen en stellingen op u van toepassing zijn.

| 1 | 2 | 3 | 4 |
|-------|------|------|--------|
| Nooit | Soms | Vaak | Altijd |

45. Heeft u vrijheid bij het uitvoeren van uw werkzaamheden? 1 2 3 4
46. Kunt u zelf bepalen hoe u uw werk uitvoert? 1 2 3 4
47. Kunt u zelf bepalen hoeveel tijd u aan een bepaalde activiteit besteedt? 1 2 3 4
48. Kunt u uw werk zelf indelen? 1 2 3 4

In de afgelopen 3 maanden...

49. lukte het mij om mijn werk zo te plannen, dat het werk op tijd af was. 1 2 3 4
50. hield ik voor ogen welk resultaat ik moest behalen met mijn werk. 1 2 3 4
51. lukte het mij om hoofdzaken van bijzaken te scheiden. 1 2 3 4
52. lukte het mij om mijn werk goed uit te voeren met zo min mogelijk tijd en inspanning. 1 2 3 4
53. heb ik een optimale planning gemaakt. 1 2 3 4

In de afgelopen 3 maanden...

54. ben ik uit mezelf met nieuwe taken begonnen, als mijn oude taken af waren. 1 2 3 4
55. heb ik uitdagende werktaken op me genomen, als die er waren. 1 2 3 4
56. heb ik gewerkt aan het bijhouden van mijn vakkennis. 1 2 3 4
57. heb ik gewerkt aan het bijhouden van mijn werkvaardigheden. 1 2 3 4
58. kwam ik met creatieve oplossingen voor nieuwe problemen. 1 2 3 4
59. heb ik extra verantwoordelijkheden op me genomen. 1 2 3 4
60. zocht ik steeds naar nieuwe uitdagingen in het werk. 1 2 3 4
61. had ik een actieve inbreng in werkoverleg of vergaderingen. 1 2 3 4

Sociale contacten

Onderstaande vragen gaan over de contacten met uw collega's en directe leidinggevende op het werk. Hierbij gaat het om hoe u deze contacten zelf ervaart. Kies daarom het antwoord dat het beste weergeeft hoe u zich werkelijk voelt in relatie tot uw collega's en leidinggevende op het werk.

| 1 | 2 | 3 | 4 |
|-------|------|------|--------|
| Nooit | Soms | Vaak | Altijd |

62. Kunt u op uw collega's rekenen wanneer u het in uw werk wat moeilijk krijgt? 1 2 3 4
63. Kunt u als dat nodig is uw collega's om hulp vragen? 1 2 3 4
64. Is uw verstandhouding met uw collega's goed? 1 2 3 4
65. Heeft u conflicten met uw collega's? 1 2 3 4
66. Heerst er tussen u en uw collega's een prettige sfeer? 1 2 3 4
67. Doen zich tussen u en uw collega's vervelende gebeurtenissen voor? 1 2 3 4
68. Kunt u op uw directe leiding rekenen wanneer u het in uw werk wat moeilijk krijgt? 1 2 3 4
69. Kunt u als dat nodig is uw directe leiding om hulp vragen? 1 2 3 4
70. Is uw verstandhouding met uw directe leiding goed? 1 2 3 4
71. Heeft u conflicten met uw directe leiding? 1 2 3 4
72. Heerst er tussen u en uw directe leiding een prettige sfeer? 1 2 3 4
73. Doen zich tussen u en uw directe leiding vervelende gebeurtenissen voor? 1 2 3 4

| 1 | 2 | 3 | 4 | 5 |
|------------------------|------------|----------|----------|----------------------|
| Helemaal mee oneens | Mee oneens | Neutraal | Mee eens | Helemaal mee eens |

Mijn leidinggevende...

74. maakt duidelijk wie waarvoor verantwoordelijk is. 1 2 3 4 5
75. legt uit wat er van iedere werknemer wordt verwacht. 1 2 3 4 5
76. geeft prestatieverwachtingen van iedere werknemer aan. 1 2 3 4 5
77. maakt duidelijk wat de prioriteiten zijn. 1 2 3 4 5
78. vertelt wat er van mij en mijn collega's wordt verwacht. 1 2 3 4 5

Mijn leidinggevende...

79. is geïnteresseerd in hoe ik mij voel en hoe het met mij gaat. 1 2 3 4 5
80. neemt de tijd voor persoonlijk contact. 1 2 3 4 5
81. is oprecht bezorgd over mijn persoonlijke ontwikkeling. 1 2 3 4 5
82. neemt de tijd om over werk gerelateerde emoties te praten. 1 2 3 4 5
83. heeft specifieke aandacht voor mijn persoonlijke behoeften. 1 2 3 4 5
84. leeft met mij mee als er problemen zijn. 1 2 3 4 5
85. geeft om zijn/haar werknemers. 1 2 3 4 5

Mijn leidinggevende...

86. houdt mij verantwoordelijk voor problemen die buiten mijn invloed zijn ontstaan. 1 2 3 4 5
87. jaagt zijn/haar eigen succes na ten koste van anderen. 1 2 3 4 5
88. houdt mij verantwoordelijk voor processen waar ik controle over heb. 1 2 3 4 5
89. houdt me verantwoordelijk voor zaken die mijn fout zijn. 1 2 3 4 5
90. is voornamelijk gericht op het behalen van zijn/haar eigen doelen. 1 2 3 4 5
91. behandelt alle medewerkers op een eerlijke manier. 1 2 3 4 5
92. gedraagt zich conform de waarden, die hij/zij uit. 1 2 3 4 5

| 1 | 2 | 3 | 4 | 5 |
|------------------------|------------|----------|----------|----------------------|
| Helemaal mee oneens | Mee oneens | Neutraal | Mee eens | Helemaal mee eens |

Mijn leidinggevende...

93. staat toe dat medewerkers belangrijke beslissingen beïnvloeden. 1 2 3 4 5
94. heroverweegt beslissingen op basis van aanbevelingen van zijn/haar werknemers. 1 2 3 4 5
95. delegeert uitdagende verantwoordelijkheden aan werknemers. 1 2 3 4 5
96. staat anderen toe bij het nemen van beslissingen. 1 2 3 4 5
97. vraagt medewerkers om advies over de strategie van de organisatie. 1 2 3 4 5
98. staat mij toe een groot aandeel te hebben in het vaststellen van mijn prestatiedoelen. 1 2 3 4 5

Mijn leidinggevende...

99. stelt mijn behoefte boven die van zichzelf. 1 2 3 4 5
100. is consistent in het uitdragen van normen, waarden en ethiek. 1 2 3 4 5
101. legt de nadruk op collectieve doelen. 1 2 3 4 5
102. spreekt optimistisch en enthousiast en zorgt voor een prettig werkklimaat. 1 2 3 4 5
103. brengt belangrijke onderwerpen onder de aandacht en schept bewustzijn over belangrijke issues. 1 2 3 4 5
104. stimuleert verschillende standpunten en manieren van werken. 1 2 3 4 5
105. zorgt voor verschillende perspectieven. 1 2 3 4 5
106. wijst op nieuwe manieren van werken. 1 2 3 4 5
107. heeft aandacht voor verschillen tussen individuen. 1 2 3 4 5
108. legt de nadruk op mijn sterke aspecten. 1 2 3 4 5
109. heeft aandacht voor individuele groei en ontwikkeling en stelt zich op als mentor/coach. 1 2 3 4 5
110. Ik heb vertrouwen in mijn leidinggevende. 1 2 3 4 5

Stimulans om te werken

De volgende vragen gaan over de mogelijke reden(en) dat u werkzaam bent in uw huidige functie. Kies het cijfer dat het beste weergeeft in hoeverre een stelling op u van toepassing is.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------------|------------|-------------------------|--------|-------------------------|----------|----------------------|
| Helemaal mee oneens | Mee oneens | Meer oneens dan eens | Midden | Meer eens dan oneens | Mee eens | Helemaal mee eens |

Waarom doet u dit werk?

111. Omdat ik plezier ontleen aan het leren van nieuwe dingen in het werk. 1 2 3 4 5 6 7
112. Omdat ik er plezier aan beleef om in het werk nieuwe dingen te ontdekken. 1 2 3 4 5 6 7
113. Omdat ik me plezierig voel in dit werk. 1 2 3 4 5 6 7
114. Omdat ik het leuk vind om veel te leren over alles wat met het werk te maken heeft. 1 2 3 4 5 6 7
115. Omdat ik het leuk vind dat ik in het werk nieuwe vaardigheden kan ontwikkelen. 1 2 3 4 5 6 7
116. Omdat het me een tevreden gevoel geeft wanneer ik mijn vaardigheden op het werk perfectioneer. 1 2 3 4 5 6 7
117. Omdat ik me heel prettig voel wanneer ik bezig ben met de leuke kanten van mijn werk. 1 2 3 4 5 6 7
118. Omdat ik het heel bevredigend vind als ik bepaalde moeilijke vaardigheden die voor mijn werk zijn vereist, onder de knie krijg. 1 2 3 4 5 6 7
119. Voor de tevredenheid die ik voel wanneer ik bepaalde moeilijkheden in mijn werk overwin. 1 2 3 4 5 6 7
120. Omdat ik er voldoening uit put als ik in m'n werk mijn zwakke punten verbeter. 1 2 3 4 5 6 7

Waarom doet u dit werk?

121. Omdat ik me slecht zou voelen als ik niet zou werken. 1 2 3 4 5 6 7
122. Omdat ik vind dat ik moet werken. 1 2 3 4 5 6 7
123. Omdat ik moet werken wil ik een goed gevoel over mezelf hebben. 1 2 3 4 5 6 7
124. Omdat werken één van de beste manieren is om goede relaties met andere mensen te onderhouden. 1 2 3 4 5 6 7
125. Vanwege de status die je hebt door dit werk. 1 2 3 4 5 6 7
126. Omdat ik door het werk wat ik doe een goede indruk 1 2 3 4 5 6 7

kan maken op mensen die ik ken.

Afrondende vragen

127. Heeft u wel eens een mindfulness training gevolgd?

- Ja Nee

128. Wanneer heeft u de ze mindfulness training afgerond?

- | | |
|---|--|
| <input type="checkbox"/> Minder dan 3 maanden geleden | <input type="checkbox"/> Langer dan 1 jaar geleden |
| <input type="checkbox"/> 3 tot 6 maanden geleden | <input type="checkbox"/> Ik volg momenteel een training |
| <input type="checkbox"/> 6 maanden tot 1 jaar geleden | <input type="checkbox"/> Ik heb nooit een training gevolgd |

129. Heeft u vragen, suggesties of opmerkingen? Noteer deze dan hier:

130. Wilt u geïnformeerd worden over de resultaten van dit onderzoek?

Noteer dan hier uw e-mailadres:

De resultaten van dit onderzoek zullen u dan zo spoedig mogelijk na afstuderen worden toegestuurd.

Einde van de vragenlijst

Hartelijk dank voor uw tijd en medewerking!!!

Appendix 2 – Factor analyses

Mindfulness

Component Matrix^a

| | Component |
|---------------|-----------|
| | 1 |
| mindfulness14 | .842 |
| mindfulness10 | .762 |
| mindfulness8 | .747 |
| mindfulness7 | .711 |
| mindfulness9 | .694 |
| mindfulness12 | .683 |
| mindfulness11 | .615 |
| mindfulness2 | .587 |
| mindfulness3 | .560 |
| mindfulness15 | .511 |
| mindfulness4 | .507 |
| mindfulness13 | .462 |
| mindfulness5 | .434 |
| mindfulness1 | .384 |
| mindfulness6 | .374 |

Extraction Method: Principal

Component Analysis.^a

a. 1 components extracted.

Need fulfillment

(competence, autonomy, relatedness)

Pattern Matrix^a

| | Component | | |
|-------------|-----------|------|------|
| | 1 | 2 | 3 |
| compsatis2 | .889 | | |
| compsatis3 | .886 | | |
| compsatis5 | .851 | | |
| compsatis6 | .755 | | |
| compsatis4 | .633 | | |
| compsatis1 | .393 | | |
| relatsatis3 | | .792 | |
| relatsatis1 | | .772 | |
| relatsatis4 | | .723 | |
| relatsatis6 | | .690 | |
| relatsatis5 | | .689 | |
| relatsatis2 | | .678 | |
| autonsatis2 | | | .776 |
| autonsatis6 | | | .719 |
| autonsatis4 | | | .697 |
| autonsatis3 | | | .683 |
| autonsatis5 | | | .680 |
| autonsatis1 | | | .655 |

Extraction Method: Principal

Component Analysis.

Rotation Method: Oblimin with Kaiser

Normalization.^a

a. Rotation converged in 6 iterations.

Intrinsic motivation

Component Matrix^a

| | Component |
|--------------|-----------|
| | 1 |
| intrinmotiv5 | .852 |
| intrinmotiv2 | .842 |
| intrinmotiv4 | .835 |
| intrinmotiv6 | .820 |
| intrinmotiv8 | .819 |
| intrinmotiv1 | .819 |
| intrinmotiv9 | .759 |
| intrinmotiv1 | .754 |
| 0 | |
| intrinmotiv3 | .742 |
| intrinmotiv7 | .643 |

Extraction Method: Principal

Component Analysis.

a. 1 components extracted.

Job performance (in-role, extra-role)

Pattern Matrix^a

| | Component | |
|------------|-----------|------|
| | 1 | 2 |
| extraperf6 | .794 | |
| extraperf2 | .783 | |
| extraperf7 | .754 | |
| extraperf5 | .729 | |
| extraperf8 | .683 | |
| extraperf1 | .598 | |
| extraperf4 | .483 | |
| extraperf3 | .404 | |
| inperf2 | | .301 |
| inperf4 | | .754 |
| inperf1 | | .749 |
| inperf5 | | .741 |
| inperf3 | | .643 |

Extraction Method: Principal Component

Analysis.

Rotation Method: Oblimin with Kaiser

Normalization.^a

a. Rotation converged in 5 iterations.

Ethical leadership

Pattern Matrix^a

| | Component | | | | |
|--------------|-----------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 |
| ethicpeople1 | .902 | | | | |
| ethicpeople4 | .900 | | | | |
| ethicpeople2 | .882 | | | | |
| ethicpeople6 | .850 | | | | |
| ethicpeople3 | .831 | | | | |
| ethicpeople5 | .808 | | | | |
| ethicpeople7 | .683 | | | | |
| ethicrole5 | | .934 | | | |
| ethicrole2 | | .890 | | | |
| ethicrole4 | | .793 | | | |
| ethicrole3 | | .768 | | | |
| ethicrole1 | | .698 | | | |
| ethicpower5 | | | .783 | | |
| ethicpower1 | | | .765 | | |
| ethicpower3 | | | .732 | | |
| ethicpower4 | | | .694 | | |
| ethicpower2 | | | .679 | | |
| ethicpower6 | | | .666 | | |
| ethicfair2 | | | | .812 | |
| ethicfair5 | | | | .790 | |
| ethicfair1 | | | | .657 | |
| ethicfair6 | | | | .523 | |
| ethicfair7 | | | | .490 | |
| ethicfair4 | | | | | .851 |
| ethicfair3 | | | | | .810 |

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.^a

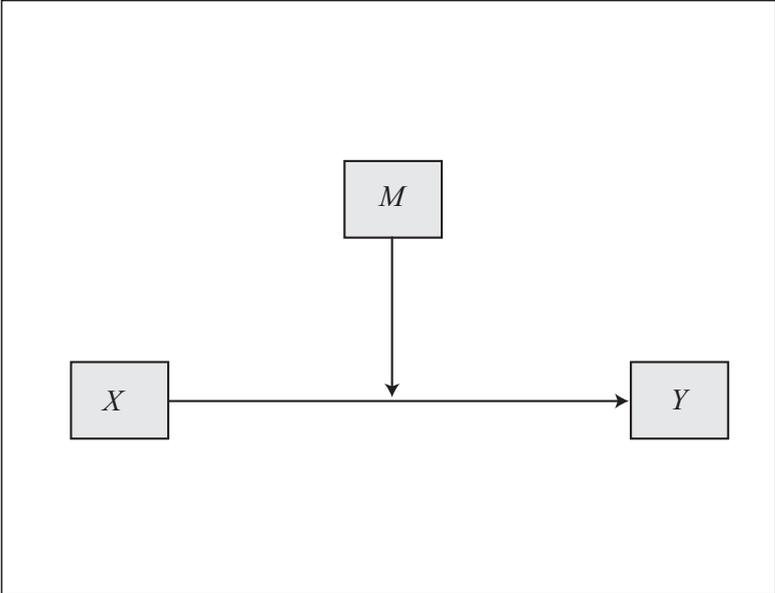
a. Rotation converged in 8 iterations.

Appendix 3 – Templates

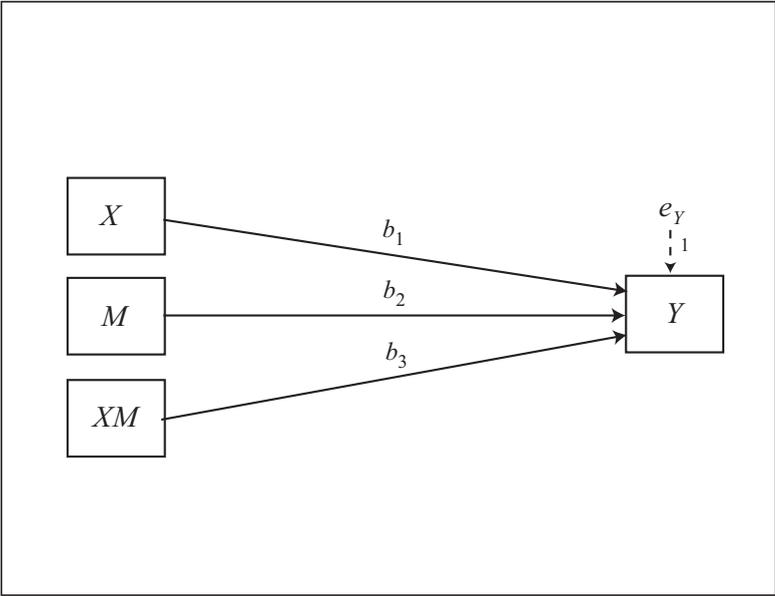
Template 1

Model 1

Conceptual Diagram



Statistical Diagram



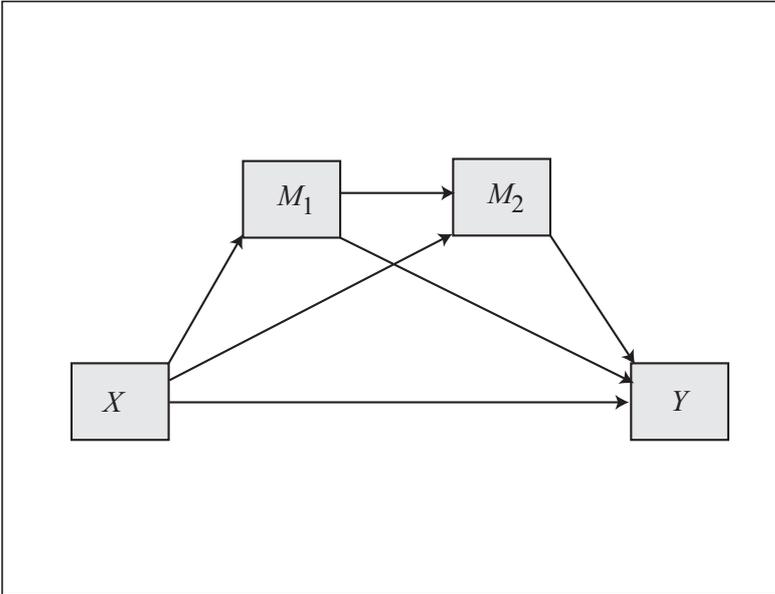
Conditional effect of X on $Y = b_1 + b_3M$

Source: Hayes (2013), p. 442

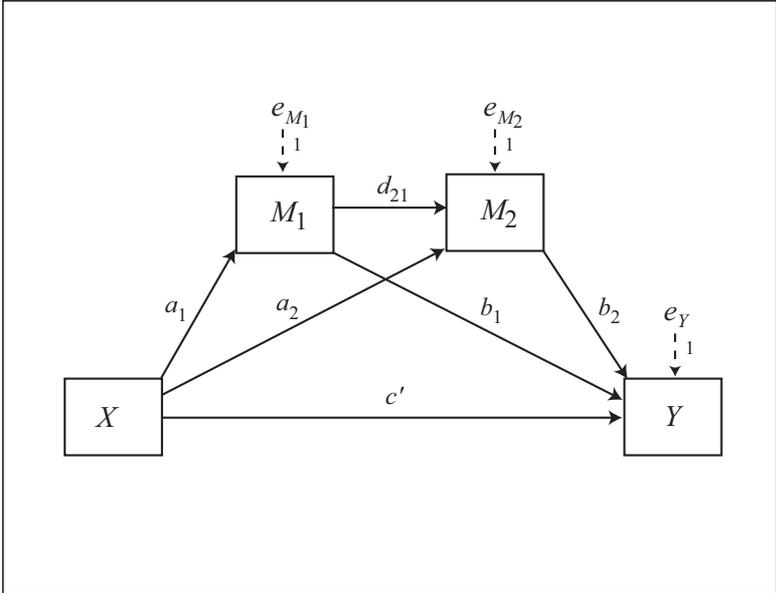
Template 6

Model 6
(2 mediators)

Conceptual Diagram



Statistical Diagram



Indirect effect of X on Y through M_i only = $a_i b_i$
 Indirect effect of X on Y through M_1 and M_2 in serial = $a_1 d_{21} b_2$
 Direct effect of X on Y = c'

Note: Model 6 allows up to 4 mediators operating in serial.

Source: Hayes (2013), p. 446.

Appendix 4 – SPSS macro output

Mindfulness, need fulfillment, intrinsic motivation, job satisfaction

```
*****  
MEDIATION: mindfulness > COMPETENCE > intrinsic motivation > JOB SATISFACTION  
*****
```

```
/* PROCESS for SPSS v2.13.1 */.  
/* Written by Andrew F. Hayes */.  
/* www.afhayes.com */.  
/* Copyright 2014 */.  
/* Documentation available in Appendix A of */.  
/* http://www.guilford.com/p/hayes3 */.  
preserve.  
set printback=off.
```

Matrix

Run MATRIX procedure:

```
***** PROCESS Procedure for SPSS Release 2.13.1 *****
```

```
Written by Andrew F. Hayes, Ph.D. www.afhayes.com  
Documentation available in Hayes (2013). www.guilford.com/p/hayes3
```

```
*****
```

```
Model = 6  
Y = JOBSAT  
X = MINDFUL  
M1 = COMP  
M2 = INTRMOT
```

```
Statistical Controls:  
CONTROL= gender SECTOR tenureL
```

```
Sample size  
360
```

```
*****
```

```
Outcome: COMP
```

```
Model Summary
```

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|---------|--------|----------|-------|
| .3871 | .1498 | .2940 | 15.6417 | 4.0000 | 355.0000 | .0000 |

```
Model
```

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.7359 | .1978 | 13.8342 | .0000 | 2.3470 | 3.1249 |
| MINDFUL | .3167 | .0445 | 7.1157 | .0000 | .2292 | .4042 |
| gender | -.0308 | .0616 | -.5000 | .6174 | -.1518 | .0903 |
| SECTOR | .0541 | .0660 | .8187 | .4135 | -.0758 | .1840 |
| tenureL | .0054 | .0051 | 1.0554 | .2920 | -.0047 | .0154 |

```
*****
```

```
Outcome: INTRMOT
```

```
Model Summary
```

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|--------|--------|----------|-------|
| .3181 | .1012 | .6667 | 7.9695 | 5.0000 | 354.0000 | .0000 |

```
Model
```

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 3.6146 | .3695 | 9.7831 | .0000 | 2.8880 | 4.3412 |
| COMP | .4127 | .0799 | 5.1638 | .0000 | .2555 | .5699 |
| MINDFUL | .1076 | .0716 | 1.5019 | .1340 | -.0333 | .2485 |
| gender | .0316 | .0927 | .3403 | .7338 | -.1508 | .2139 |
| SECTOR | -.0095 | .0996 | -.0958 | .9237 | -.2053 | .1863 |
| tenureL | -.0063 | .0077 | -.8180 | .4139 | -.0214 | .0088 |

```
*****
```

Outcome: JOBSAT

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|---------|--------|----------|-------|
| .5013 | .2513 | .4475 | 19.7453 | 6.0000 | 353.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 1.3962 | .3412 | 4.0921 | .0001 | .7252 | 2.0672 |
| COMP | .1420 | .0679 | 2.0916 | .0372 | .0085 | .2756 |
| INTRMOT | .4087 | .0435 | 9.3850 | .0000 | .3230 | .4943 |
| MINDFUL | -.0642 | .0589 | -1.0901 | .2764 | -.1800 | .0516 |
| gender | -.1258 | .0760 | -1.6556 | .0987 | -.2753 | .0236 |
| SECTOR | -.0154 | .0816 | -.1890 | .8502 | -.1758 | .1450 |
| tenureL | .0067 | .0063 | 1.0552 | .2921 | -.0058 | .0191 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|---------|-------|--------|-------|
| -.0642 | .0589 | -1.0901 | .2764 | -.1800 | .0516 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .1424 | .0399 | .0723 | .2266 |
| Ind1 : | .0450 | .0249 | .0013 | .1004 |
| Ind2 : | .0534 | .0143 | .0298 | .0876 |
| Ind3 : | .0440 | .0271 | -.0066 | .1022 |

Indirect effect key

Ind1 : MINDFUL -> COMP -> JOBSAT
Ind2 : MINDFUL -> COMP -> INTRMOT -> JOBSAT
Ind3 : MINDFUL -> INTRMOT -> JOBSAT

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
71

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

MEDIATION: mindfulness > AUTONOMY > intrinsic motivation > JOB SATISFACTION

```
/* PROCESS for SPSS v2.13.1 */.  
/* Written by Andrew F. Hayes */.  
/* www.afhayes.com */.  
/* Copyright 2014 */.  
/* Documentation available in Appendix A of */.  
/* http://www.guilford.com/p/hayes3 */.  
preserve.  
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
 Y = JOBSAT
 X = MINDFUL
 M1 = AUTON
 M2 = INTRMOT

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 360

 Outcome: AUTON

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|--------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .2692 | .0725 | .3813 | 6.9325 | 4.0000 | 355.0000 | .0000 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 3.1612 | .2252 | 14.0353 | .0000 | 2.7182 | 3.6041 | |
| MINDFUL | .1818 | .0507 | 3.5860 | .0004 | .0821 | .2814 | |
| gender | -.2133 | .0701 | -3.0424 | .0025 | -.3512 | -.0754 | |
| SECTOR | -.0967 | .0752 | -1.2850 | .1996 | -.2446 | .0513 | |
| tenureL | -.0011 | .0058 | -.1959 | .8448 | -.0126 | .0103 | |

 Outcome: INTRMOT

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .4948 | .2449 | .5601 | 22.9588 | 5.0000 | 354.0000 | .0000 |

| Model | | | | | | | |
|----------|--------|-------|--------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.7195 | .3404 | 7.9894 | .0000 | 2.0501 | 3.3889 | |
| AUTON | .6404 | .0643 | 9.9550 | .0000 | .5138 | .7669 | |
| MINDFUL | .1219 | .0625 | 1.9495 | .0520 | -.0011 | .2449 | |
| gender | .1554 | .0861 | 1.8060 | .0718 | -.0138 | .3247 | |
| SECTOR | .0747 | .0914 | .8172 | .4143 | -.1050 | .2544 | |
| tenureL | -.0033 | .0070 | -.4747 | .6353 | -.0172 | .0105 | |

 Outcome: JOBSAT

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .5950 | .3541 | .3861 | 32.2506 | 6.0000 | 353.0000 | .0000 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | .9418 | .3070 | 3.0674 | .0023 | .3380 | 1.5456 | |
| AUTON | .4729 | .0604 | 7.8261 | .0000 | .3540 | .5917 | |
| INTRMOT | .2713 | .0441 | 6.1476 | .0000 | .1845 | .3581 | |
| MINDFUL | -.0724 | .0522 | -1.3874 | .1662 | -.1751 | .0302 | |
| gender | -.0267 | .0718 | -.3724 | .7098 | -.1679 | .1144 | |
| SECTOR | .0397 | .0759 | .5231 | .6012 | -.1096 | .1891 | |
| tenureL | .0074 | .0059 | 1.2656 | .2065 | -.0041 | .0189 | |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | | | | | | |
|-------------------------|-------|---------|-------|--------|-------|--|
| Effect | SE | t | p | LLCI | ULCI | |
| -.0724 | .0522 | -1.3874 | .1662 | -.1751 | .0302 | |

| Indirect effect(s) of X on Y | | | | |
|------------------------------|--------|---------|----------|----------|
| | Effect | Boot SE | BootLLCI | BootULCI |
| Total: | .1506 | .0399 | .0809 | .2394 |
| Ind1 : | .0859 | .0272 | .0394 | .1522 |
| Ind2 : | .0316 | .0129 | .0125 | .0663 |
| Ind3 : | .0331 | .0169 | .0035 | .0691 |

Indirect effect key
 Ind1 : MINDFUL -> AUTON -> JOBSAT
 Ind2 : MINDFUL -> AUTON -> INTRMOT -> JOBSAT
 Ind3 : MINDFUL -> INTRMOT -> JOBSAT

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
71

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

MEDIATION: mindfulness > RELATEDNESS > intrinsic motivation > JOB SATISFACTION

```
/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
Y = JOBSAT
X = MINDFUL
M1 = RELAT
M2 = INTRMOT

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
356

Outcome: RELAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .1535 | .0235 | .3479 | 2.1161 | 4.0000 | 351.0000 | .0784 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.1958 | .2152 | 14.8481 | .0000 | 2.7725 | 3.6191 |
| MINDFUL | .1248 | .0485 | 2.5739 | .0105 | .0294 | .2201 |
| gender | .0918 | .0672 | 1.3658 | .1729 | -.0404 | .2240 |
| SECTOR | .0715 | .0724 | .9864 | .3246 | -.0710 | .2140 |
| tenureL | -.0002 | .0056 | -.0363 | .9711 | -.0111 | .0107 |

Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .3309 | .1095 | .6645 | 8.6058 | 5.0000 | 350.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.4515 | .3796 | 9.0931 | .0000 | 2.7050 | 4.1980 |
| RELAT | .4015 | .0738 | 5.4426 | .0000 | .2564 | .5466 |
| MINDFUL | .1914 | .0676 | 2.8306 | .0049 | .0584 | .3244 |
| gender | -.0149 | .0931 | -1.1596 | .2500 | -.1981 | .1683 |
| SECTOR | -.0256 | .1003 | -.2555 | .7985 | -.2228 | .1716 |
| tenureL | -.0041 | .0077 | -1.5315 | .0694 | -.0192 | .0110 |

Outcome: JOBSAT

| Model Summary | R | R-sq | MSE | F | df1 | df2 | p |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | .5052 | .2552 | .4460 | 19.9323 | 6.0000 | 349.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 1.3881 | .3458 | 4.0148 | .0001 | .7081 | 2.0682 |
| RELAT | .1161 | .0629 | 1.8451 | .0659 | -.0077 | .2399 |
| INTRMOT | .4149 | .0438 | 9.4734 | .0000 | .3287 | .5010 |
| MINDFUL | -.0381 | .0560 | -.6792 | .4974 | -.1483 | .0721 |
| gender | -.1432 | .0763 | -1.8763 | .0614 | -.2933 | .0069 |
| SECTOR | -.0185 | .0822 | -.2247 | .8224 | -.1800 | .1431 |
| tenureL | .0082 | .0063 | 1.2949 | .1962 | -.0042 | .0205 |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | Effect | SE | t | p | LLCI | ULCI |
|-------------------------|--------|-------|--------|-------|--------|-------|
| | -.0381 | .0560 | -.6792 | .4974 | -.1483 | .0721 |

| Indirect effect(s) of X on Y | Effect | Boot SE | BootLLCI | BootULCI |
|------------------------------|--------|---------|----------|----------|
| Total: | .1147 | .0310 | .0570 | .1776 |
| Ind1 : | .0145 | .0091 | .0018 | .0430 |
| Ind2 : | .0208 | .0097 | .0063 | .0474 |
| Ind3 : | .0794 | .0299 | .0257 | .1420 |

Indirect effect key
Ind1 : MINDFUL -> RELAT -> JOBSAT
Ind2 : MINDFUL -> RELAT -> INTRMOT -> JOBSAT
Ind3 : MINDFUL -> INTRMOT -> JOBSAT

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
75

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

Mindfulness, need fulfillment, intrinsic motivation, in-role performance

MEDIATION: mindfulness > COMPETENCE > intrinsic motivation > IN-ROLE PERFORMANCE

```
/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
Y = INPERF
X = MINDFUL
M1 = COMP
M2 = INTRMOT

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
359

Outcome: COMP

| Model Summary | | | | | | | |
|---------------|-------|-------|---------|--------|----------|-------|--|
| R | R-sq | MSE | F | df1 | df2 | p | |
| .3866 | .1494 | .2948 | 15.5500 | 4.0000 | 354.0000 | .0000 | |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.7368 | .1982 | 13.8087 | .0000 | 2.3470 | 3.1266 | |
| MINDFUL | .3164 | .0446 | 7.0912 | .0000 | .2287 | .4042 | |
| gender | -.0305 | .0617 | -.4947 | .6211 | -.1518 | .0908 | |
| SECTOR | .0539 | .0662 | .8152 | .4155 | -.0762 | .1840 | |
| tenureL | .0054 | .0051 | 1.0598 | .2899 | -.0047 | .0155 | |

Outcome: INTRMOT

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|--------|----------|-------|--|
| R | R-sq | MSE | F | df1 | df2 | p | |
| .3184 | .1014 | .6328 | 7.9644 | 5.0000 | 353.0000 | .0000 | |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 3.6715 | .3602 | 10.1934 | .0000 | 2.9631 | 4.3798 | |
| COMP | .4106 | .0779 | 5.2735 | .0000 | .2575 | .5638 | |
| MINDFUL | .0936 | .0699 | 1.3402 | .1811 | -.0438 | .2310 | |
| gender | .0469 | .0904 | .5184 | .6045 | -.1309 | .2247 | |
| SECTOR | -.0179 | .0970 | -.1847 | .8536 | -.2087 | .1729 | |
| tenureL | -.0032 | .0075 | -.4186 | .6758 | -.0180 | .0117 | |

Outcome: INPERF

| Model Summary | | | | | | | |
|---------------|-------|-------|---------|--------|----------|-------|--|
| R | R-sq | MSE | F | df1 | df2 | p | |
| .4803 | .2307 | .1631 | 17.5891 | 6.0000 | 352.0000 | .0000 | |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 1.2654 | .2081 | 6.0815 | .0000 | .8562 | 1.6746 | |
| COMP | .2989 | .0411 | 7.2792 | .0000 | .2182 | .3797 | |
| INTRMOT | -.0175 | .0270 | -.6470 | .5180 | -.0706 | .0357 | |
| MINDFUL | .1330 | .0356 | 3.7398 | .0002 | .0631 | .2030 | |
| gender | .0195 | .0459 | .4239 | .6719 | -.0709 | .1098 | |
| SECTOR | -.1045 | .0493 | -2.1203 | .0347 | -.2013 | -.0076 | |
| tenureL | .0017 | .0038 | .4550 | .6494 | -.0058 | .0093 | |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | | | | | | |
|-------------------------|-------|--------|-------|-------|-------|--|
| Effect | SE | t | p | LLCI | ULCI | |
| .1330 | .0356 | 3.7398 | .0002 | .0631 | .2030 | |

```

Indirect effect(s) of X on Y
      Effect      Boot SE      BootLLCI      BootULCI
Total:      .0907      .0210      .0551      .1360
Ind1 :      .0946      .0215      .0559      .1405
Ind2 :      -.0023      .0051      -.0115      .0089
Ind3 :      -.0016      .0045      -.0146      .0042

```

```

Indirect effect key
Ind1 :  MINDFUL ->      COMP      ->      INPERF
Ind2 :  MINDFUL ->      COMP      ->      INTRMOT ->      INPERF
Ind3 :  MINDFUL ->      INTRMOT ->      INPERF

```

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
72

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

MEDIATION: mindfulness > AUTONOMY > intrinsic motivation > IN-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

```

Model = 6
Y = INPERF
X = MINDFUL
M1 = AUTON
M2 = INTRMOT

```

```

Statistical Controls:
CONTROL= gender SECTOR tenureL
Sample size
359

```

Outcome: AUTON

```

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .2700      .0729      .3822      6.9576      4.0000      354.0000      .0000

```

```

Model
      coeff      se      t      p      LLCI      ULCI
constant      3.1574      .2257      13.9915      .0000      2.7136      3.6012
MINDFUL      .1828      .0508      3.5984      .0004      .0829      .2828
gender      -.2144      .0702      -3.0527      .0024      -.3525      -.0763
SECTOR      -.0960      .0753      -1.2750      .2031      -.2442      .0521
tenureL      -.0014      .0058      -.2341      .8151      -.0129      .0101

```

Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .5087 | .2588 | .5219 | 24.6539 | 5.0000 | 353.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.7507 | .3286 | 8.3701 | .0000 | 2.1044 | 3.3970 |
| AUTON | .6476 | .0621 | 10.4262 | .0000 | .5254 | .7697 |
| MINDFUL | .1052 | .0604 | 1.7399 | .0828 | -.0137 | .2241 |
| gender | .1732 | .0832 | 2.0828 | .0380 | .0097 | .3367 |
| SECTOR | .0664 | .0882 | .7528 | .4520 | -.1071 | .2399 |
| tenureL | .0000 | .0068 | -.0049 | .9961 | -.0135 | .0134 |

Outcome: INPERF

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .3946 | .1557 | .1791 | 10.8168 | 6.0000 | 352.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 1.5859 | .2107 | 7.5260 | .0000 | 1.1715 | 2.0003 |
| AUTON | .1716 | .0416 | 4.1254 | .0000 | .0898 | .2535 |
| INTRMOT | -.0267 | .0312 | -.8574 | .3918 | -.0880 | .0346 |
| MINDFUL | .1983 | .0356 | 5.5764 | .0000 | .1284 | .2682 |
| gender | .0475 | .0490 | .9686 | .3334 | -.0489 | .1438 |
| SECTOR | -.0718 | .0517 | -1.3885 | .1659 | -.1735 | .0299 |
| tenureL | .0036 | .0040 | .8982 | .3697 | -.0043 | .0115 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|--------|-------|-------|-------|
| .1983 | .0356 | 5.5764 | .0000 | .1284 | .2682 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .0254 | .0132 | .0024 | .0557 |
| Ind1 : | .0314 | .0129 | .0118 | .0638 |
| Ind2 : | -.0032 | .0061 | -.0177 | .0072 |
| Ind3 : | -.0028 | .0058 | -.0188 | .0053 |

Indirect effect key

Ind1 : MINDFUL -> AUTON -> INPERF
 Ind2 : MINDFUL -> AUTON -> INTRMOT -> INPERF
 Ind3 : MINDFUL -> INTRMOT -> INPERF

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
72

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

MEDIATION: mindfulness > RELATEDNESS > intrinsic motivation > IN-ROLE PERFORMANCE

/* PROCESS for SPSS v2.13.1 */.
 /* Written by Andrew F. Hayes */.
 /* www.afhayes.com */.
 /* Copyright 2014 */.

```

/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
Y = INPERF
X = MINDFUL
M1 = RELAT
M2 = INTRMOT

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
355

Outcome: RELAT

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|--------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .1543 | .0238 | .3486 | 2.1342 | 4.0000 | 350.0000 | .0762 |

| Model | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|
| | coeff | se | t | p | LLCI | ULCI |
| constant | 3.1918 | .2156 | 14.8015 | .0000 | 2.7677 | 3.6160 |
| MINDFUL | .1259 | .0486 | 2.5913 | .0100 | .0303 | .2214 |
| gender | .0906 | .0673 | 1.3452 | .1794 | -.0419 | .2230 |
| SECTOR | .0721 | .0725 | .9944 | .3207 | -.0705 | .2148 |
| tenureL | -.0004 | .0056 | -.0797 | .9365 | -.0114 | .0105 |

Outcome: INTRMOT

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|--------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3380 | .1142 | .6273 | 9.0010 | 5.0000 | 349.0000 | .0000 |

| Model | | | | | | |
|----------|--------|-------|--------|-------|--------|--------|
| | coeff | se | t | p | LLCI | ULCI |
| constant | 3.4781 | .3688 | 9.4301 | .0000 | 2.7527 | 4.2035 |
| RELAT | .4099 | .0717 | 5.7168 | .0000 | .2689 | .5509 |
| MINDFUL | .1751 | .0658 | 2.6615 | .0081 | .0457 | .3045 |
| gender | .0006 | .0906 | .0070 | .9944 | -.1775 | .1788 |
| SECTOR | -.0352 | .0974 | -.3613 | .7181 | -.2269 | .1564 |
| tenureL | -.0008 | .0075 | -.1095 | .9129 | -.0156 | .0139 |

Outcome: INPERF

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|--------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3390 | .1149 | .1893 | 7.5326 | 6.0000 | 348.0000 | .0000 |

| Model | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|
| | coeff | se | t | p | LLCI | ULCI |
| constant | 1.8360 | .2270 | 8.0895 | .0000 | 1.3896 | 2.2824 |
| RELAT | -.0045 | .0412 | -.1089 | .9133 | -.0855 | .0765 |
| INTRMOT | .0372 | .0294 | 1.2642 | .2070 | -.0207 | .0950 |
| MINDFUL | .2162 | .0365 | 5.9210 | .0000 | .1444 | .2880 |
| gender | .0078 | .0498 | .1572 | .8752 | -.0900 | .1057 |
| SECTOR | -.0877 | .0535 | -1.6381 | .1023 | -.1930 | .0176 |
| tenureL | .0033 | .0041 | .8050 | .4214 | -.0048 | .0114 |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | Effect | SE | t | p | LLCI | ULCI |
|-------------------------|--------|-------|--------|-------|-------|-------|
| | .2162 | .0365 | 5.9210 | .0000 | .1444 | .2880 |

| Indirect effect(s) of X on Y | Effect | Boot SE | BootLLCI | BootULCI |
|------------------------------|--------|---------|----------|----------|
| Total: | .0079 | .0110 | -.0093 | .0345 |
| Ind1 : | -.0006 | .0058 | -.0131 | .0116 |
| Ind2 : | .0019 | .0026 | -.0018 | .0088 |
| Ind3 : | .0065 | .0093 | -.0069 | .0328 |

Indirect effect key

| | | | | | | |
|--------|---------|----|---------|----|---------|-----------|
| Ind1 : | MINDFUL | -> | RELAT | -> | INPERF | |
| Ind2 : | MINDFUL | -> | RELAT | -> | INTRMOT | -> INPERF |
| Ind3 : | MINDFUL | -> | INTRMOT | -> | INPERF | |

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
76

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

Mindfulness, need fulfillment, intrinsic motivation, extra-role performance

MEDIATION: mindfulness > COMPETENCE > intrinsic motivation > EXTRA-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
  
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

```

Model = 6
  Y = EXPERF
  X = MINDFUL
  M1 = COMP
  M2 = INTRMOT
  
```

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 358

Outcome: COMP

| Model Summary | R | R-sq | MSE | F | df1 | df2 | p |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | .3877 | .1503 | .2955 | 15.6127 | 4.0000 | 353.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.7355 | .1983 | 13.7971 | .0000 | 2.3455 | 3.1254 |
| MINDFUL | .3170 | .0446 | 7.1051 | .0000 | .2293 | .4048 |
| gender | -.0320 | .0618 | -.5184 | .6045 | -.1536 | .0895 |
| SECTOR | .0564 | .0664 | .8490 | .3965 | -.0742 | .1869 |
| tenureL | .0053 | .0051 | 1.0415 | .2984 | -.0047 | .0154 |

Outcome: INTRMOT

| Model Summary | R | R-sq | MSE | F | df1 | df2 | p |
|---------------|-------|-------|-------|--------|--------|----------|-------|
| | .3191 | .1018 | .6639 | 7.9806 | 5.0000 | 352.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 3.6156 | .3687 | 9.8053 | .0000 | 2.8904 | 4.3408 |
| COMP | .4136 | .0798 | 5.1835 | .0000 | .2567 | .5705 |
| MINDFUL | .1068 | .0715 | 1.4928 | .1364 | -.0339 | .2474 |
| gender | .0389 | .0927 | .4194 | .6752 | -.1434 | .2211 |
| SECTOR | -.0159 | .0996 | -.1594 | .8735 | -.2118 | .1801 |
| tenureL | -.0063 | .0077 | -.8220 | .4116 | -.0214 | .0088 |

Outcome: EXPERF

| Model Summary | R | R-sq | MSE | F | df1 | df2 | p |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | .4573 | .2091 | .2170 | 15.4702 | 6.0000 | 351.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | .8987 | .2379 | 3.7778 | .0002 | .4308 | 1.3665 |
| COMP | .3060 | .0473 | 6.4656 | .0000 | .2129 | .3991 |
| INTRMOT | .1430 | .0305 | 4.6931 | .0000 | .0831 | .2030 |
| MINDFUL | -.0435 | .0410 | -1.0613 | .2893 | -.1242 | .0371 |
| gender | -.0091 | .0530 | -.1715 | .8639 | -.1133 | .0952 |
| SECTOR | -.0055 | .0570 | -.0968 | .9230 | -.1175 | .1065 |
| tenureL | .0007 | .0044 | .1544 | .8774 | -.0080 | .0093 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|---------|-------|--------|-------|
| -.0435 | .0410 | -1.0613 | .2893 | -.1242 | .0371 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .1310 | .0251 | .0859 | .1832 |
| Ind1 : | .0970 | .0212 | .0602 | .1446 |
| Ind2 : | .0188 | .0092 | .0056 | .0423 |
| Ind3 : | .0153 | .0120 | -.0001 | .0500 |

Indirect effect key

```

Ind1 : MINDFUL ->      COMP      ->      EXPERF
Ind2 : MINDFUL ->      COMP      ->      INTRMOT ->      EXPERF
Ind3 : MINDFUL ->      INTRMOT ->      EXPERF

```

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000

Level of confidence for all confidence intervals in output: 95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was: 73

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----
restore.

MEDIATION: mindfulness > AUTONOMY > intrinsic motivation > EXTRA-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

```

Model = 6
Y = EXPERF
X = MINDFUL
M1 = AUTON
M2 = INTRMOT

```

```

Statistical Controls:
CONTROL= gender SECTOR tenureL

```

```

Sample size
358

```

Outcome: AUTON

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2690 | .0724 | .3830 | 6.8838 | 4.0000 | 353.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.1614 | .2257 | 14.0052 | .0000 | 2.7175 | 3.6054 |
| MINDFUL | .1820 | .0508 | 3.5830 | .0004 | .0821 | .2819 |
| gender | -.2130 | .0704 | -3.0268 | .0027 | -.3514 | -.0746 |
| SECTOR | -.0956 | .0756 | -1.2645 | .2069 | -.2443 | .0531 |
| tenureL | -.0012 | .0058 | -.2068 | .8363 | -.0127 | .0103 |

Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .4945 | .2446 | .5584 | 22.7905 | 5.0000 | 352.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 2.7308 | .3400 | 8.0326 | .0000 | 2.0622 | 3.3995 |
| AUTON | .6377 | .0643 | 9.9225 | .0000 | .5113 | .7641 |
| MINDFUL | .1218 | .0625 | 1.9502 | .0519 | -.0010 | .2446 |
| gender | .1614 | .0861 | 1.8759 | .0615 | -.0078 | .3307 |
| SECTOR | .0684 | .0915 | .7476 | .4552 | -.1115 | .2483 |
| tenureL | -.0033 | .0070 | -.4752 | .6350 | -.0172 | .0105 |

Outcome: EXPERF

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .3870 | .1497 | .2333 | 10.3020 | 6.0000 | 351.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 1.2134 | .2391 | 5.0756 | .0000 | .7432 | 1.6836 |
| AUTON | .1781 | .0470 | 3.7893 | .0002 | .0857 | .2705 |
| INTRMOT | .1345 | .0345 | 3.9024 | .0001 | .0667 | .2022 |
| MINDFUL | .0231 | .0406 | .5693 | .5695 | -.0567 | .1029 |
| gender | .0193 | .0559 | .3444 | .7308 | -.0907 | .1292 |
| SECTOR | .0288 | .0592 | .4870 | .6266 | -.0876 | .1452 |
| tenureL | .0025 | .0045 | .5471 | .5846 | -.0065 | .0114 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|-------|-------|--------|-------|
| .0231 | .0406 | .5693 | .5695 | -.0567 | .1029 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .0644 | .0229 | .0291 | .1219 |
| Ind1 : | .0324 | .0135 | .0119 | .0669 |
| Ind2 : | .0156 | .0084 | .0036 | .0388 |
| Ind3 : | .0164 | .0125 | .0005 | .0502 |

Indirect effect key

```

Ind1 : MINDFUL -> AUTON -> EXPERF
Ind2 : MINDFUL -> AUTON -> INTRMOT -> EXPERF
Ind3 : MINDFUL -> INTRMOT -> EXPERF

```

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
73

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

MEDIATION: mindfulness > RELATEDNESS >intrinsic motivation > EXTRA-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2013). www.guilford.com/p/hayes3

```

Model = 6
Y = EXPERF
X = MINDFUL
M1 = RELAT
M2 = INTRMOT

```

Statistical Controls:

CONTROL= gender SECTOR tenureL

Sample size
354

Outcome: RELAT

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|--------|--------|----------|-------|
| .1527 | .0233 | .3490 | 2.0836 | 4.0000 | 349.0000 | .0825 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.1973 | .2156 | 14.8311 | .0000 | 2.7733 | 3.6213 |
| MINDFUL | .1242 | .0486 | 2.5591 | .0109 | .0288 | .2197 |
| gender | .0952 | .0674 | 1.4118 | .1589 | -.0374 | .2278 |
| SECTOR | .0674 | .0728 | .9260 | .3551 | -.0757 | .2105 |
| tenureL | -.0002 | .0056 | -.0274 | .9782 | -.0111 | .0108 |

Outcome: INTRMOT

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|--------|--------|----------|-------|
| .3286 | .1080 | .6634 | 8.4229 | 5.0000 | 348.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 3.4700 | .3795 | 9.1434 | .0000 | 2.7236 | 4.2164 |
| RELAT | .3965 | .0738 | 5.3728 | .0000 | .2514 | .5417 |
| MINDFUL | .1918 | .0676 | 2.8386 | .0048 | .0589 | .3247 |
| gender | -.0088 | .0932 | -.0947 | .9246 | -.1922 | .1745 |
| SECTOR | -.0291 | .1004 | -.2896 | .7723 | -.2266 | .1685 |
| tenureL | -.0041 | .0077 | -.5396 | .5898 | -.0192 | .0110 |

Outcome: EXPERF

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|--------|--------|----------|-------|
| .3613 | .1305 | .2389 | 8.6827 | 6.0000 | 347.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 1.2181 | .2536 | 4.8025 | .0000 | .7192 | 1.7169 |
| RELAT | .1182 | .0461 | 2.5647 | .0107 | .0276 | .2089 |
| INTRMOT | .1706 | .0322 | 5.3035 | .0000 | .1073 | .2339 |
| MINDFUL | .0348 | .0410 | .8487 | .3966 | -.0459 | .1155 |
| gender | -.0335 | .0559 | -.5987 | .5497 | -.1435 | .0765 |
| SECTOR | -.0103 | .0603 | -.1711 | .8642 | -.1289 | .1083 |
| tenureL | .0027 | .0046 | .5823 | .5607 | -.0064 | .0118 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|-------|-------|--------|-------|
| .0348 | .0410 | .8487 | .3966 | -.0459 | .1155 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .0558 | .0226 | .0207 | .1131 |
| Ind1 : | .0147 | .0091 | .0025 | .0410 |
| Ind2 : | .0084 | .0045 | .0023 | .0217 |
| Ind3 : | .0327 | .0183 | .0075 | .0809 |

Indirect effect key

| | | | | | |
|--------|---------|----|---------|----|-------------------|
| Ind1 : | MINDFUL | -> | RELAT | -> | EXPERF |
| Ind2 : | MINDFUL | -> | RELAT | -> | INTRMOT -> EXPERF |
| Ind3 : | MINDFUL | -> | INTRMOT | -> | EXPERF |

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
77

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

----- END MATRIX -----

restore.

Ethical leadership, need fulfillment, intrinsic motivation, job satisfaction

MEDIATION: ELW > COMPETENCE > intrinsic motivation > JOB SATISFACTION

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
Y = JOBSAT
X = ELW
M1 = COMP
M2 = INTRMOT

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
358

Outcome: COMP

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|--------|--------|----------|-------|
| .2203 | .0485 | .3286 | 4.5003 | 4.0000 | 353.0000 | .0015 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.6118 | .1797 | 20.1032 | .0000 | 3.2584 | 3.9651 |
| ELW | .1279 | .0466 | 2.7431 | .0064 | .0362 | .2197 |
| gender | -.1107 | .0641 | -1.7274 | .0850 | -.2367 | .0153 |
| SECTOR | .1047 | .0699 | 1.4973 | .1352 | -.0328 | .2422 |
| tenureL | .0091 | .0054 | 1.6940 | .0912 | -.0015 | .0197 |

Outcome: INTRMOT

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|---------|--------|----------|-------|
| .3751 | .1407 | .6369 | 11.5268 | 5.0000 | 352.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 3.0594 | .3663 | 8.3513 | .0000 | 2.3389 | 3.7799 |
| COMP | .4011 | .0741 | 5.4121 | .0000 | .2553 | .5468 |
| ELW | .2908 | .0656 | 4.4317 | .0000 | .1618 | .4199 |
| gender | .0047 | .0896 | .0529 | .9579 | -.1714 | .1809 |
| SECTOR | .0266 | .0977 | .2726 | .7853 | -.1655 | .2187 |
| tenureL | -.0050 | .0075 | -.6653 | .5063 | -.0198 | .0098 |

Outcome: JOBSAT

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|---------|--------|----------|-------|
| .5229 | .2735 | .4347 | 22.0199 | 6.0000 | 351.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | .7928 | .3313 | 2.3934 | .0172 | .1413 | 1.4444 |
| COMP | .1002 | .0637 | 1.5731 | .1166 | -.0251 | .2255 |
| INTRMOT | .3667 | .0440 | 8.3284 | .0000 | .2801 | .4533 |
| ELW | .2045 | .0557 | 3.6706 | .0003 | .0949 | .3140 |
| gender | -.1151 | .0740 | -1.5556 | .1207 | -.2607 | .0304 |
| SECTOR | -.0042 | .0807 | -.0524 | .9583 | -.1629 | .1545 |
| tenureL | .0062 | .0062 | .9952 | .3203 | -.0060 | .0184 |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | | | | | |
|-------------------------|-------|--------|-------|-------|-------|
| Effect | SE | t | p | LLCI | ULCI |
| .2045 | .0557 | 3.6706 | .0003 | .0949 | .3140 |

| Indirect effect(s) of X on Y | | | | |
|------------------------------|--------|---------|----------|----------|
| | Effect | Boot SE | BootLLCI | BootULCI |
| Total: | .1383 | .0382 | .0756 | .2264 |
| Ind1 : | .0128 | .0115 | -.0013 | .0492 |
| Ind2 : | .0188 | .0098 | .0035 | .0425 |
| Ind3 : | .1066 | .0331 | .0526 | .1880 |

Indirect effect key
 Ind1 : ELW -> COMP -> JOBSAT
 Ind2 : ELW -> COMP -> INTRMOT -> JOBSAT
 Ind3 : ELW -> INTRMOT -> JOBSAT

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
 1000

Level of confidence for all confidence intervals in output:
 95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
 73

----- END MATRIX -----

restore.

MEDIATION: ELW > AUTONOMY > intrinsic motivation > JOB SATISFACTION

```
/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
 Y = JOBSAT
 X = ELW
 M1 = AUTON
 M2 = INTRMOT

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 358

Outcome: AUTON

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .4321 | .1867 | .3319 | 20.2636 | 4.0000 | 353.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.5513 | .1806 | 14.1286 | .0000 | 2.1962 | 2.9065 |
| ELW | .3793 | .0469 | 8.0924 | .0000 | .2872 | .4715 |
| gender | -.2557 | .0644 | -3.9708 | .0001 | -.3824 | -.1291 |
| SECTOR | -.0530 | .0703 | -.7537 | .4516 | -.1912 | .0853 |
| tenureL | .0007 | .0054 | .1208 | .9039 | -.0100 | .0113 |

Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .4901 | .2402 | .5632 | 22.2510 | 5.0000 | 352.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 2.9338 | .2943 | 9.9686 | .0000 | 2.3550 | 3.5126 |
| AUTON | .6170 | .0693 | 8.8995 | .0000 | .4807 | .7534 |
| ELW | .1081 | .0665 | 1.6255 | .1049 | -.0227 | .2388 |
| gender | .1181 | .0857 | 1.3778 | .1691 | -.0505 | .2867 |
| SECTOR | .1013 | .0916 | 1.1056 | .2697 | -.0789 | .2815 |
| tenureL | -.0017 | .0070 | -.2487 | .8038 | -.0156 | .0121 |

Outcome: JOBSAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .5940 | .3529 | .3872 | 31.8965 | 6.0000 | 351.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | .5474 | .2763 | 1.9811 | .0484 | .0040 | 1.0909 |
| AUTON | .4307 | .0636 | 6.7699 | .0000 | .3056 | .5558 |
| INTRMOT | .2577 | .0442 | 5.8310 | .0000 | .1708 | .3446 |
| ELW | .0912 | .0553 | 1.6482 | .1002 | -.0176 | .2000 |
| gender | -.0204 | .0713 | -.2861 | .7750 | -.1606 | .1198 |
| SECTOR | .0366 | .0761 | .4805 | .6312 | -.1131 | .1862 |
| tenureL | .0067 | .0058 | 1.1423 | .2541 | -.0048 | .0181 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI | |
|--------|-------|-------|--------|-------|--------|-------|
| | .0912 | .0553 | 1.6482 | .1002 | -.0176 | .2000 |

Indirect effect(s) of X on Y

| Effect | Boot SE | BootLLCI | BootULCI | |
|--------|---------|----------|----------|-------|
| Total: | .2516 | .0495 | .1692 | .3603 |
| Ind1 : | .1634 | .0378 | .1008 | .2551 |
| Ind2 : | .0603 | .0197 | .0306 | .1090 |
| Ind3 : | .0278 | .0203 | -.0071 | .0727 |

Indirect effect key

```

Ind1 :  ELW  ->    AUTON  ->    JOBSAT
Ind2 :  ELW  ->    AUTON  ->  INTRMOT  ->    JOBSAT
Ind3 :  ELW  ->    INTRMOT ->    JOBSAT

```

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
73

----- END MATRIX -----
restore.

MEDIATION: ELW > RELATEDNESS > intrinsic motivation > JOB SATISFACTION

```
/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
 Y = JOBSAT
 X = ELW
 M1 = RELAT
 M2 = INTRMOT

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 354

Outcome: RELAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2298 | .0528 | .3380 | 4.8647 | 4.0000 | 349.0000 | .0008 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.0044 | .1827 | 16.4402 | .0000 | 2.6450 | 3.3639 |
| ELW | .1977 | .0475 | 4.1623 | .0000 | .1043 | .2911 |
| gender | .0619 | .0653 | .9486 | .3435 | -.0665 | .1903 |
| SECTOR | .0995 | .0715 | 1.3913 | .1650 | -.0411 | .2401 |
| tenureL | .0012 | .0055 | .2125 | .8318 | -.0096 | .0119 |

Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .3582 | .1283 | .6500 | 10.2455 | 5.0000 | 348.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.4245 | .3376 | 10.1436 | .0000 | 2.7605 | 4.0885 |
| RELAT | .3586 | .0742 | 4.8305 | .0000 | .2126 | .5046 |
| ELW | .2743 | .0675 | 4.0647 | .0001 | .1416 | .4070 |
| gender | -.0604 | .0906 | -.6666 | .5055 | -.2387 | .1179 |
| SECTOR | .0212 | .0994 | .2129 | .8316 | -.1744 | .2167 |
| tenureL | -.0018 | .0076 | -.2345 | .8147 | -.0167 | .0131 |

Outcome: JOBSAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .5259 | .2766 | .4336 | 22.1118 | 6.0000 | 347.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | .8733 | .3139 | 2.7825 | .0057 | .2560 | 1.4906 |
| RELAT | .0777 | .0626 | 1.2401 | .2158 | -.0455 | .2008 |
| INTRMOT | .3766 | .0438 | 8.6021 | .0000 | .2905 | .4627 |
| ELW | .1974 | .0564 | 3.5005 | .0005 | .0865 | .3084 |
| gender | -.1331 | .0741 | -1.7969 | .0732 | -.2788 | .0126 |
| SECTOR | -.0077 | .0812 | -.0945 | .9248 | -.1674 | .1520 |
| tenureL | .0077 | .0062 | 1.2429 | .2147 | -.0045 | .0198 |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | | | | | |
|-------------------------|-------|--------|-------|-------|-------|
| Effect | SE | t | p | LLCI | ULCI |
| .1974 | .0564 | 3.5005 | .0005 | .0865 | .3084 |

| Indirect effect(s) of X on Y | | | | |
|------------------------------|--------|---------|----------|----------|
| | Effect | Boot SE | BootLLCI | BootULCI |
| Total: | .1453 | .0382 | .0798 | .2369 |
| Ind1 : | .0154 | .0136 | -.0073 | .0448 |
| Ind2 : | .0267 | .0103 | .0119 | .0557 |
| Ind3 : | .1033 | .0352 | .0423 | .1898 |

Indirect effect key
 Ind1 : ELW -> RELAT -> JOBSAT
 Ind2 : ELW -> RELAT -> INTRMOT -> JOBSAT
 Ind3 : ELW -> INTRMOT -> JOBSAT

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
 1000

Level of confidence for all confidence intervals in output:
 95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
 77

----- END MATRIX -----

restore.

Ethical leadership, need fulfillment, intrinsic motivation, in-role performance

MEDIATION: ELW > COMPETENCE > intrinsic motivation > IN-ROLE PERFORMANCE

```
/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

```
Model = 6
Y = INPERF
X = ELW
M1 = COMP
M2 = INTRMOT
```

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 357

 Outcome: COMP

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2201 | .0484 | .3294 | 4.4798 | 4.0000 | 352.0000 | .0015 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.6126 | .1799 | 20.0818 | .0000 | 3.2588 | 3.9664 |
| ELW | .1275 | .0467 | 2.7306 | .0066 | .0357 | .2194 |
| gender | -.1095 | .0642 | -1.7051 | .0891 | -.2358 | .0168 |
| SECTOR | .1041 | .0700 | 1.4859 | .1382 | -.0337 | .2418 |
| tenureL | .0093 | .0054 | 1.7186 | .0866 | -.0013 | .0199 |

 Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .3778 | .1427 | .6031 | 11.6850 | 5.0000 | 351.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 3.0960 | .3566 | 8.6827 | .0000 | 2.3947 | 3.7973 |
| COMP | .3945 | .0721 | 5.4691 | .0000 | .2526 | .5363 |
| ELW | .2852 | .0639 | 4.4649 | .0000 | .1596 | .4108 |
| gender | .0231 | .0873 | .2646 | .7915 | -.1485 | .1947 |
| SECTOR | .0169 | .0951 | .1773 | .8594 | -.1701 | .2038 |
| tenureL | -.0020 | .0073 | -.2714 | .7862 | -.0164 | .0124 |

 Outcome: INPERF

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .4457 | .1986 | .1691 | 14.4587 | 6.0000 | 350.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 1.5181 | .2081 | 7.2945 | .0000 | 1.1088 | 1.9275 |
| COMP | .3418 | .0398 | 8.5902 | .0000 | .2635 | .4200 |
| INTRMOT | -.0201 | .0283 | -.7103 | .4780 | -.0757 | .0355 |
| ELW | .0409 | .0348 | 1.1752 | .2407 | -.0275 | .1092 |
| gender | -.0072 | .0462 | -.1550 | .8769 | -.0981 | .0837 |
| SECTOR | -.0871 | .0503 | -1.7301 | .0845 | -.1861 | .0119 |
| tenureL | .0029 | .0039 | .7434 | .4577 | -.0048 | .0105 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|--------|-------|--------|-------|
| .0409 | .0348 | 1.1752 | .2407 | -.0275 | .1092 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .0369 | .0234 | -.0105 | .0841 |
| Ind1 : | .0436 | .0201 | .0074 | .0862 |
| Ind2 : | -.0010 | .0022 | -.0061 | .0026 |
| Ind3 : | -.0057 | .0117 | -.0320 | .0150 |

Indirect effect key

| | | | | | |
|--------|-----|----|---------|----|-------------------|
| Ind1 : | ELW | -> | COMP | -> | INPERF |
| Ind2 : | ELW | -> | COMP | -> | INTRMOT -> INPERF |
| Ind3 : | ELW | -> | INTRMOT | -> | INPERF |

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
 1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
74

----- END MATRIX -----

restore.

MEDIATION: ELW > AUTONOMY > intrinsic motivation > IN-ROLE PERFORMANCE

```
/* PROCESS for SPSS v2.13.1 */.  
/* Written by Andrew F. Hayes */.  
/* www.afhayes.com */.  
/* Copyright 2014 */.  
/* Documentation available in Appendix A of */.  
/* http://www.guilford.com/p/hayes3 */.  
preserve.  
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
Y = INPERF
X = ELW
M1 = AUTON
M2 = INTRMOT

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
357

Outcome: AUTON

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .4326 | .1872 | .3327 | 20.2641 | 4.0000 | 352.0000 | .0000 |

| Model | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|
| | coeff | se | t | p | LLCI | ULCI |
| constant | 2.5504 | .1808 | 14.1066 | .0000 | 2.1948 | 2.9060 |
| ELW | .3798 | .0469 | 8.0914 | .0000 | .2875 | .4721 |
| gender | -.2571 | .0645 | -3.9834 | .0001 | -.3840 | -.1302 |
| SECTOR | -.0522 | .0704 | -.7417 | .4588 | -.1906 | .0862 |
| tenureL | .0004 | .0054 | .0805 | .9359 | -.0102 | .0111 |

Outcome: INTRMOT

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .5051 | .2551 | .5240 | 24.0430 | 5.0000 | 351.0000 | .0000 |

| Model | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|
| | coeff | se | t | p | LLCI | ULCI |
| constant | 2.9261 | .2839 | 10.3071 | .0000 | 2.3677 | 3.4844 |
| AUTON | .6254 | .0669 | 9.3487 | .0000 | .4938 | .7569 |
| ELW | .0979 | .0642 | 1.5266 | .1278 | -.0282 | .2241 |
| gender | .1407 | .0828 | 1.6988 | .0902 | -.0222 | .3036 |
| SECTOR | .0905 | .0884 | 1.0242 | .3064 | -.0833 | .2644 |
| tenureL | .0014 | .0068 | .2049 | .8377 | -.0120 | .0148 |

Outcome: INPERF

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2782 | .0774 | .1947 | 4.8928 | 6.0000 | 350.0000 | .0001 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.2302 | .1975 | 11.2914 | .0000 | 1.8418 | 2.6187 |
| AUTON | .1939 | .0456 | 4.2543 | .0000 | .1042 | .2835 |
| INTRMOT | -.0138 | .0325 | -.4254 | .6708 | -.0778 | .0502 |
| ELW | .0087 | .0392 | .2223 | .8242 | -.0685 | .0859 |
| gender | .0054 | .0507 | .1061 | .9155 | -.0943 | .1051 |
| SECTOR | -.0418 | .0540 | -.7740 | .4394 | -.1479 | .0644 |
| tenureL | .0060 | .0042 | 1.4368 | .1517 | -.0022 | .0141 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|-------|-------|--------|-------|
| .0087 | .0392 | .2223 | .8242 | -.0685 | .0859 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .0690 | .0205 | .0335 | .1117 |
| Ind1 : | .0736 | .0205 | .0380 | .1221 |
| Ind2 : | -.0033 | .0119 | -.0295 | .0184 |
| Ind3 : | -.0014 | .0062 | -.0227 | .0070 |

Indirect effect key

```

Ind1 :  ELW    ->    AUTON  ->    INPERF
Ind2 :  ELW    ->    AUTON  ->    INTRMOT  ->    INPERF
Ind3 :  ELW    ->    INTRMOT ->    INPERF

```

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000

Level of confidence for all confidence intervals in output: 95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was: 74

----- END MATRIX -----

restore.

MEDIATION: ELW > RELATEDNESS > intrinsic motivation > IN-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
 Y = INPERF
 X = ELW
 M1 = RELAT
 M2 = INTRMOT

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 353

 Outcome: RELAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2302 | .0530 | .3388 | 4.8689 | 4.0000 | 348.0000 | .0008 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.0035 | .1830 | 16.4150 | .0000 | 2.6436 | 3.3634 |
| ELW | .1981 | .0476 | 4.1665 | .0000 | .1046 | .2917 |
| gender | .0605 | .0654 | .9249 | .3557 | -.0682 | .1892 |
| SECTOR | .1002 | .0716 | 1.4001 | .1624 | -.0406 | .2410 |
| tenureL | .0009 | .0055 | .1723 | .8633 | -.0098 | .0117 |

 Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .3674 | .1350 | .6120 | 10.8324 | 5.0000 | 347.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.4136 | .3276 | 10.4206 | .0000 | 2.7693 | 4.0579 |
| RELAT | .3667 | .0720 | 5.0898 | .0000 | .2250 | .5084 |
| ELW | .2658 | .0655 | 4.0578 | .0001 | .1369 | .3946 |
| gender | -.0406 | .0881 | -.4608 | .6452 | -.2138 | .1326 |
| SECTOR | .0092 | .0965 | .0952 | .9242 | -.1806 | .1990 |
| tenureL | .0013 | .0074 | .1786 | .8583 | -.0132 | .0158 |

 Outcome: INPERF

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .1736 | .0301 | .2065 | 1.7913 | 6.0000 | 346.0000 | .1000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.4280 | .2180 | 11.1367 | .0000 | 1.9992 | 2.8568 |
| RELAT | .0035 | .0434 | .0815 | .9351 | -.0818 | .0889 |
| INTRMOT | .0479 | .0312 | 1.5356 | .1255 | -.0134 | .1092 |
| ELW | .0631 | .0389 | 1.6198 | .1062 | -.0135 | .1396 |
| gender | -.0441 | .0512 | -.8615 | .3896 | -.1447 | .0565 |
| SECTOR | -.0546 | .0560 | -.9748 | .3304 | -.1649 | .0556 |
| tenureL | .0059 | .0043 | 1.3669 | .1726 | -.0026 | .0143 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| | Effect | SE | t | p | LLCI | ULCI |
|--|--------|-------|--------|-------|--------|-------|
| | .0631 | .0389 | 1.6198 | .1062 | -.0135 | .1396 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .0169 | .0184 | -.0121 | .0639 |
| Ind1 : | .0007 | .0106 | -.0189 | .0240 |
| Ind2 : | .0035 | .0037 | -.0025 | .0127 |
| Ind3 : | .0127 | .0144 | -.0097 | .0458 |

Indirect effect key

| | | | | | | |
|--------|-----|----|---------|----|---------|-----------|
| Ind1 : | ELW | -> | RELAT | -> | INPERF | |
| Ind2 : | ELW | -> | RELAT | -> | INTRMOT | -> INPERF |
| Ind3 : | ELW | -> | INTRMOT | -> | INPERF | |

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
78

----- END MATRIX -----

restore.

Ethical leadership, need fulfillment, intrinsic motivation, extra-role performance

MEDIATION: ELW > COMPETENCE > intrinsic motivation > EXTRA-ROLE PERFORMANCE

```
/* PROCESS for SPSS v2.13.1 */.  
/* Written by Andrew F. Hayes */.  
/* www.afhayes.com */.  
/* Copyright 2014 */.  
/* Documentation available in Appendix A of */.  
/* http://www.guilford.com/p/hayes3 */.  
preserve.  
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
Y = EXPERF
X = ELW
M1 = COMP
M2 = INTRMOT

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
356

Outcome: COMP

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|--------|--------|----------|-------|
| .2205 | .0486 | .3304 | 4.4858 | 4.0000 | 351.0000 | .0015 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.6137 | .1803 | 20.0441 | .0000 | 3.2591 | 3.9683 |
| ELW | .1276 | .0468 | 2.7272 | .0067 | .0356 | .2196 |
| gender | -.1115 | .0644 | -1.7324 | .0841 | -.2380 | .0151 |
| SECTOR | .1061 | .0703 | 1.5089 | .1322 | -.0322 | .2444 |
| tenureL | .0091 | .0054 | 1.6833 | .0932 | -.0015 | .0197 |

Outcome: INTRMOT

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|---------|--------|----------|-------|
| .3770 | .1421 | .6338 | 11.5939 | 5.0000 | 350.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 3.0541 | .3657 | 8.3519 | .0000 | 2.3349 | 3.7733 |
| COMP | .4017 | .0739 | 5.4332 | .0000 | .2563 | .5471 |
| ELW | .2918 | .0655 | 4.4558 | .0000 | .1630 | .4205 |
| gender | .0128 | .0895 | .1435 | .8859 | -.1632 | .1889 |
| SECTOR | .0192 | .0977 | .1962 | .8446 | -.1730 | .2113 |
| tenureL | -.0050 | .0075 | -.6678 | .5047 | -.0197 | .0097 |

Outcome: EXPERF

| Model Summary | | | | | | |
|---------------|-------|-------|---------|--------|----------|-------|
| R | R-sq | MSE | F | df1 | df2 | p |
| .4532 | .2054 | .2167 | 15.0337 | 6.0000 | 349.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | .7127 | .2342 | 3.0435 | .0025 | .2521 | 1.1732 |
| COMP | .2848 | .0450 | 6.3275 | .0000 | .1963 | .3733 |
| INTRMOT | .1312 | .0313 | 4.1974 | .0000 | .0697 | .1927 |
| ELW | .0417 | .0394 | 1.0586 | .2905 | -.0357 | .1191 |
| gender | .0055 | .0523 | .1042 | .9171 | -.0975 | .1084 |
| SECTOR | -.0072 | .0571 | -.1260 | .8998 | -.1196 | .1052 |
| tenureL | .0000 | .0044 | -.0035 | .9972 | -.0086 | .0086 |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | | | | | |
|-------------------------|-------|--------|-------|--------|-------|
| Effect | SE | t | p | LLCI | ULCI |
| .0417 | .0394 | 1.0586 | .2905 | -.0357 | .1191 |

| Indirect effect(s) of X on Y | | | | |
|------------------------------|--------|---------|----------|----------|
| | Effect | Boot SE | BootLLCI | BootULCI |
| Total: | .0813 | .0270 | .0268 | .1345 |
| Ind1 : | .0363 | .0168 | .0065 | .0746 |
| Ind2 : | .0067 | .0049 | .0006 | .0205 |
| Ind3 : | .0383 | .0194 | .0097 | .0871 |

Indirect effect key
Ind1 : ELW -> COMP -> EXPERF
Ind2 : ELW -> COMP -> INTRMOT -> EXPERF
Ind3 : ELW -> INTRMOT -> EXPERF

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
75

----- END MATRIX -----

restore.

MEDIATION: ELW > COMPETENCE > intrinsic motivation > EXTRA-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

 Model = 6
 Y = EXPERF
 X = ELW
 M1 = AUTON
 M2 = INTRMOT

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
 356

 Outcome: AUTON

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .4319 | .1865 | .3335 | 20.1209 | 4.0000 | 351.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.5524 | .1811 | 14.0916 | .0000 | 2.1962 | 2.9086 |
| ELW | .3792 | .0470 | 8.0688 | .0000 | .2868 | .4717 |
| gender | -.2546 | .0647 | -3.9378 | .0001 | -.3817 | -.1274 |
| SECTOR | -.0534 | .0706 | -.7557 | .4503 | -.1923 | .0855 |
| tenureL | .0006 | .0054 | .1150 | .9085 | -.0100 | .0113 |

 Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .4900 | .2401 | .5614 | 22.1128 | 5.0000 | 350.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 2.9399 | .2941 | 9.9975 | .0000 | 2.3616 | 3.5183 |
| AUTON | .6134 | .0693 | 8.8570 | .0000 | .4772 | .7496 |
| ELW | .1104 | .0664 | 1.6624 | .0973 | -.0202 | .2410 |
| gender | .1242 | .0857 | 1.4493 | .1482 | -.0444 | .2928 |
| SECTOR | .0945 | .0917 | 1.0305 | .3035 | -.0859 | .2749 |
| tenureL | -.0017 | .0070 | -.2481 | .8042 | -.0156 | .0121 |

 Outcome: EXPERF

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .3792 | .1438 | .2335 | 9.7696 | 6.0000 | 349.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 1.2862 | .2150 | 5.9817 | .0000 | .8633 | 1.7091 |
| AUTON | .1716 | .0494 | 3.4728 | .0006 | .0744 | .2688 |
| INTRMOT | .1351 | .0345 | 3.9199 | .0001 | .0673 | .2029 |
| ELW | .0116 | .0430 | .2692 | .7879 | -.0730 | .0961 |
| gender | .0175 | .0554 | .3159 | .7523 | -.0915 | .1266 |
| SECTOR | .0319 | .0592 | .5390 | .5902 | -.0846 | .1485 |
| tenureL | .0025 | .0045 | .5445 | .5865 | -.0064 | .0114 |

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

| Effect | SE | t | p | LLCI | ULCI |
|--------|-------|-------|-------|--------|-------|
| .0116 | .0430 | .2692 | .7879 | -.0730 | .0961 |

Indirect effect(s) of X on Y

| | Effect | Boot SE | BootLLCI | BootULCI |
|--------|--------|---------|----------|----------|
| Total: | .1114 | .0283 | .0620 | .1739 |
| Ind1 : | .0651 | .0216 | .0318 | .1215 |
| Ind2 : | .0314 | .0135 | .0060 | .0594 |
| Ind3 : | .0149 | .0142 | -.0042 | .0541 |

```

Indirect effect key
Ind1 : ELW -> AUTON -> EXPERF
Ind2 : ELW -> AUTON -> INTRMOT -> EXPERF
Ind3 : ELW -> INTRMOT -> EXPERF

```

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
75

----- END MATRIX -----

restore.

MEDIATION: ELW > RELATEDNESS > intrinsic motivation > EXTRA-ROLE PERFORMANCE

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

```

Model = 6
Y = EXPERF
X = ELW
M1 = RELAT
M2 = INTRMOT

```

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
352

Outcome: RELAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2308 | .0533 | .3388 | 4.8820 | 4.0000 | 347.0000 | .0008 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 2.9997 | .1831 | 16.3815 | .0000 | 2.6395 | 3.3598 |
| ELW | .1987 | .0476 | 4.1768 | .0000 | .1051 | .2922 |
| gender | .0659 | .0655 | 1.0072 | .3145 | -.0628 | .1947 |
| SECTOR | .0945 | .0718 | 1.3159 | .1891 | -.0467 | .2356 |
| tenureL | .0012 | .0055 | .2232 | .8235 | -.0095 | .0120 |

Outcome: INTRMOT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|---------|--------|----------|-------|
| | .3569 | .1274 | .6485 | 10.1009 | 5.0000 | 346.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.4412 | .3374 | 10.2002 | .0000 | 2.7777 | 4.1048 |
| RELAT | .3527 | .0743 | 4.7492 | .0000 | .2066 | .4988 |
| ELW | .2760 | .0674 | 4.0920 | .0001 | .1433 | .4086 |
| gender | -.0536 | .0907 | -5.907 | .5551 | -.2320 | .1248 |
| SECTOR | .0165 | .0996 | .1657 | .8685 | -.1793 | .2123 |
| tenureL | -.0018 | .0076 | -.2383 | .8118 | -.0167 | .0131 |

Outcome: EXPERF

| Model Summary | | | | | | |
|---------------|-------|-------|--------|--------|----------|-------|
| R | R-sq | MSE | F | df1 | df2 | p |
| .3581 | .1282 | .2380 | 8.4572 | 6.0000 | 345.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|--------|-------|--------|--------|
| constant | 1.2451 | .2331 | 5.3421 | .0000 | .7867 | 1.7035 |
| RELAT | .1099 | .0464 | 2.3659 | .0185 | .0185 | .2012 |
| INTRMOT | .1644 | .0326 | 5.0471 | .0000 | .1003 | .2284 |
| ELW | .0503 | .0418 | 1.2034 | .2296 | -.0319 | .1326 |
| gender | -.0360 | .0550 | -.6544 | .5133 | -.1441 | .0721 |
| SECTOR | -.0035 | .0603 | -.0579 | .9539 | -.1221 | .1151 |
| tenureL | .0028 | .0046 | .6033 | .5467 | -.0062 | .0118 |

***** DIRECT AND INDIRECT EFFECTS *****

| Direct effect of X on Y | | | | | |
|-------------------------|-------|--------|-------|--------|-------|
| Effect | SE | t | p | LLCI | ULCI |
| .0503 | .0418 | 1.2034 | .2296 | -.0319 | .1326 |

| Indirect effect(s) of X on Y | | | | |
|------------------------------|--------|---------|----------|----------|
| | Effect | Boot SE | BootLLCI | BootULCI |
| Total: | .0787 | .0284 | .0325 | .1435 |
| Ind1 : | .0218 | .0121 | .0035 | .0536 |
| Ind2 : | .0115 | .0049 | .0045 | .0260 |
| Ind3 : | .0454 | .0224 | .0132 | .0998 |

| Indirect effect key | | | | | |
|---------------------|-----|----|---------|----|-------------------|
| Ind1 : | ELW | -> | RELAT | -> | EXPERF |
| Ind2 : | ELW | -> | RELAT | -> | INTRMOT -> EXPERF |
| Ind3 : | ELW | -> | INTRMOT | -> | EXPERF |

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
79

----- END MATRIX -----

restore.

Mindfulness and need fulfillment, moderated by ethical leadership

MODERATION: mindfulness > COMPETENCE, moderated by ethical leadership

```

/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.

```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 1
Y = COMP
X = MINDFUL
M = ELW

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
371

Outcome: COMP

| Model Summary | R | R-sq | MSE | F | df1 | df2 | p |
|---------------|-------|-------|-------|---------|--------|----------|-------|
| | .4112 | .1691 | .2880 | 12.3476 | 6.0000 | 364.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|--------|---------|-------|---------|--------|
| constant | .7173 | 1.1409 | .6287 | .5299 | -1.5262 | 2.9609 |
| ELW | .5504 | .3057 | 1.8006 | .0726 | -.0507 | 1.1516 |
| MINDFUL | .6783 | .2629 | 2.5801 | .0103 | .1613 | 1.1953 |
| int_1 | -.0987 | .0704 | -1.4026 | .1616 | -.2370 | .0397 |
| gender | -.0122 | .0603 | -.2022 | .8399 | -.1308 | .1064 |
| SECTOR | .0725 | .0651 | 1.1147 | .2657 | -.0554 | .2005 |
| tenureL | .0051 | .0050 | 1.0075 | .3144 | -.0048 | .0149 |

Interactions:

int_1 MINDFUL X ELW

R-square increase due to interaction(s):

| | R2-chng | F | df1 | df2 | p |
|-------|---------|--------|--------|----------|-------|
| int_1 | .0045 | 1.9672 | 1.0000 | 364.0000 | .1616 |

Conditional effect of X on Y at values of the moderator(s):

| ELW | Effect | se | t | p | LLCI | ULCI |
|--------|--------|-------|--------|-------|-------|-------|
| 2.9728 | .3850 | .0665 | 5.7852 | .0000 | .2541 | .5158 |
| 3.6189 | .3212 | .0441 | 7.2871 | .0000 | .2345 | .4079 |
| 4.2650 | .2574 | .0599 | 4.2959 | .0000 | .1396 | .3753 |

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.

***** JOHNSON-NEYMAN TECHNIQUE *****

Moderator value(s) defining Johnson-Neyman significance region(s):

| Value | % below | % above |
|--------|---------|---------|
| 4.9260 | 99.4609 | .5391 |

Conditional effect of X on Y at values of the moderator (M)

| ELW | Effect | se | t | p | LLCI | ULCI |
|--------|--------|-------|--------|-------|-------|-------|
| 1.1765 | .5622 | .1818 | 3.0924 | .0021 | .2047 | .9198 |
| 1.3676 | .5434 | .1688 | 3.2192 | .0014 | .2114 | .8753 |
| 1.5588 | .5245 | .1558 | 3.3656 | .0008 | .2180 | .8310 |
| 1.7500 | .5056 | .1430 | 3.5363 | .0005 | .2245 | .7868 |
| 1.9412 | .4868 | .1302 | 3.7373 | .0002 | .2306 | .7429 |
| 2.1324 | .4679 | .1177 | 3.9765 | .0001 | .2365 | .6993 |
| 2.3235 | .4490 | .1053 | 4.2643 | .0000 | .2420 | .6561 |
| 2.5147 | .4302 | .0932 | 4.6136 | .0000 | .2468 | .6135 |
| 2.7059 | .4113 | .0816 | 5.0396 | .0000 | .2508 | .5718 |
| 2.8971 | .3924 | .0706 | 5.5556 | .0000 | .2535 | .5314 |
| 3.0882 | .3736 | .0607 | 6.1577 | .0000 | .2543 | .4929 |
| 3.2794 | .3547 | .0523 | 6.7846 | .0000 | .2519 | .4575 |
| 3.4706 | .3358 | .0463 | 7.2466 | .0000 | .2447 | .4270 |
| 3.6618 | .3170 | .0439 | 7.2260 | .0000 | .2307 | .4032 |

| | | | | | | |
|--------|-------|-------|--------|-------|--------|-------|
| 3.8529 | .2981 | .0454 | 6.5641 | .0000 | .2088 | .3874 |
| 4.0441 | .2792 | .0506 | 5.5162 | .0000 | .1797 | .3788 |
| 4.2353 | .2604 | .0585 | 4.4493 | .0000 | .1453 | .3755 |
| 4.4265 | .2415 | .0682 | 3.5423 | .0004 | .1074 | .3756 |
| 4.6176 | .2226 | .0790 | 2.8198 | .0051 | .0674 | .3779 |
| 4.8088 | .2038 | .0905 | 2.2529 | .0249 | .0259 | .3817 |
| 4.9260 | .1922 | .0977 | 1.9665 | .0500 | .0000 | .3844 |
| 5.0000 | .1849 | .1024 | 1.8053 | .0719 | -.0165 | .3863 |

Data for visualizing conditional effect of X on Y
 Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/MINDFUL ELW COMP.
 BEGIN DATA.

| | | |
|--------|--------|--------|
| 3.5120 | 2.9728 | 3.7395 |
| 4.1723 | 2.9728 | 3.9937 |
| 4.8326 | 2.9728 | 4.2479 |
| 3.5120 | 3.6189 | 3.8712 |
| 4.1723 | 3.6189 | 4.0833 |
| 4.8326 | 3.6189 | 4.2954 |
| 3.5120 | 4.2650 | 4.0029 |
| 4.1723 | 4.2650 | 4.1729 |
| 4.8326 | 4.2650 | 4.3429 |

END DATA.
 GRAPH/SCATTERPLOT=MINDFUL WITH COMP BY ELW.

* Estimates are based on setting covariates to their sample means.

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:
 95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
 60

----- END MATRIX -----

restore.

MODERATION: mindfulness > AUTONOMY, moderated by ethical leadership

/* PROCESS for SPSS v2.13.1 */.
 /* Written by Andrew F. Hayes */.
 /* www.afhayes.com */.
 /* Copyright 2014 */.
 /* Documentation available in Appendix A of */.
 /* <http://www.guilford.com/p/hayes3> */.
 preserve.
 set printback=off.

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 1
 Y = AUTON
 X = MINDFUL
 M = ELW

Statistical Controls:
 CONTROL= gender SECTOR tenureL

Sample size
371

Outcome: AUTON

Model Summary

| R | R-sq | MSE | F | df1 | df2 | p |
|-------|-------|-------|---------|--------|----------|-------|
| .4558 | .2078 | .3350 | 15.9085 | 6.0000 | 364.0000 | .0000 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|--------|---------|-------|--------|--------|
| constant | 3.0023 | 1.2305 | 2.4399 | .0152 | .5825 | 5.4221 |
| ELW | .0466 | .3297 | .1413 | .8877 | -.6018 | .6950 |
| MINDFUL | -.1072 | .2836 | -.3780 | .7057 | -.6648 | .4504 |
| int_1 | .0770 | .0759 | 1.0142 | .3112 | -.0723 | .2262 |
| gender | -.1821 | .0650 | -2.8008 | .0054 | -.3100 | -.0543 |
| SECTOR | -.0514 | .0702 | -.7331 | .4640 | -.1894 | .0865 |
| tenureL | -.0013 | .0054 | -.2435 | .8077 | -.0120 | .0093 |

Interactions:

int_1 MINDFUL X ELW

R-square increase due to interaction(s):

| | R2-chng | F | df1 | df2 | p |
|-------|---------|--------|--------|----------|-------|
| int_1 | .0022 | 1.0286 | 1.0000 | 364.0000 | .3112 |

Conditional effect of X on Y at values of the moderator(s):

| ELW | Effect | se | t | p | LLCI | ULCI |
|--------|--------|-------|--------|-------|--------|-------|
| 2.9728 | .1216 | .0718 | 1.6946 | .0910 | -.0195 | .2628 |
| 3.6189 | .1713 | .0475 | 3.6042 | .0004 | .0779 | .2648 |
| 4.2650 | .2211 | .0646 | 3.4204 | .0007 | .0940 | .3482 |

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.

***** JOHNSON-NEYMAN TECHNIQUE *****

Moderator value(s) defining Johnson-Neyman significance region(s):

| Value | % below | % above |
|--------|---------|---------|
| 3.0781 | 18.5984 | 81.4016 |

Conditional effect of X on Y at values of the moderator (M)

| ELW | Effect | se | t | p | LLCI | ULCI |
|--------|--------|-------|--------|-------|--------|-------|
| 1.1765 | -.0166 | .1961 | -.0848 | .9325 | -.4023 | .3690 |
| 1.3676 | -.0019 | .1821 | -.0105 | .9916 | -.3599 | .3561 |
| 1.5588 | .0128 | .1681 | .0761 | .9394 | -.3177 | .3433 |
| 1.7500 | .0275 | .1542 | .1784 | .8585 | -.2758 | .3308 |
| 1.9412 | .0422 | .1405 | .3006 | .7639 | -.2340 | .3185 |
| 2.1324 | .0569 | .1269 | .4486 | .6540 | -.1926 | .3065 |
| 2.3235 | .0717 | .1136 | .6309 | .5285 | -.1517 | .2950 |
| 2.5147 | .0864 | .1006 | .8588 | .3910 | -.1114 | .2841 |
| 2.7059 | .1011 | .0880 | 1.1483 | .2516 | -.0720 | .2742 |
| 2.8971 | .1158 | .0762 | 1.5198 | .1294 | -.0340 | .2656 |
| 3.0781 | .1297 | .0660 | 1.9665 | .0500 | .0000 | .2595 |
| 3.0882 | .1305 | .0654 | 1.9945 | .0468 | .0018 | .2592 |
| 3.2794 | .1452 | .0564 | 2.5754 | .0104 | .0343 | .2561 |
| 3.4706 | .1599 | .0500 | 3.1996 | .0015 | .0616 | .2582 |
| 3.6618 | .1746 | .0473 | 3.6914 | .0003 | .0816 | .2677 |
| 3.8529 | .1894 | .0490 | 3.8659 | .0001 | .0930 | .2857 |
| 4.0441 | .2041 | .0546 | 3.7377 | .0002 | .0967 | .3114 |
| 4.2353 | .2188 | .0631 | 3.4664 | .0006 | .0947 | .3429 |
| 4.4265 | .2335 | .0735 | 3.1753 | .0016 | .0889 | .3781 |
| 4.6176 | .2482 | .0852 | 2.9147 | .0038 | .0807 | .4157 |
| 4.8088 | .2629 | .0976 | 2.6951 | .0074 | .0711 | .4548 |
| 5.0000 | .2776 | .1105 | 2.5132 | .0124 | .0604 | .4949 |

Data for visualizing conditional effect of X on Y
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/MINDFUL ELW AUTON.
BEGIN DATA.

| | | |
|--------|--------|--------|
| 3.5120 | 2.9728 | 3.4404 |
| 4.1723 | 2.9728 | 3.5207 |
| 4.8326 | 2.9728 | 3.6010 |
| 3.5120 | 3.6189 | 3.6451 |
| 4.1723 | 3.6189 | 3.7582 |
| 4.8326 | 3.6189 | 3.8714 |
| 3.5120 | 4.2650 | 3.8498 |
| 4.1723 | 4.2650 | 3.9958 |
| 4.8326 | 4.2650 | 4.1418 |

END DATA.

GRAPH/SCATTERPLOT=MINDFUL WITH AUTON BY ELW.

* Estimates are based on setting covariates to their sample means.

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:
95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
60

----- END MATRIX -----

restore.

MODERATION: mindfulness > RELATEDNESS, moderated by ethical leadership

```
/* PROCESS for SPSS v2.13.1 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2014 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.13.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 1
Y = RELAT
X = MINDFUL
M = ELW

Statistical Controls:
CONTROL= gender SECTOR tenureL

Sample size
367

Outcome: RELAT

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|-------|--------|--------|----------|-------|
| | .2750 | .0756 | .3299 | 4.9072 | 6.0000 | 360.0000 | .0001 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|--------|--------|-------|--------|--------|
| constant | 1.7879 | 1.2275 | 1.4566 | .1461 | -.6260 | 4.2019 |
| ELW | .3872 | .3288 | 1.1775 | .2398 | -.2595 | 1.0338 |
| MINDFUL | .2785 | .2827 | .9854 | .3251 | -.2774 | .8344 |
| int_1 | -.0424 | .0756 | -.5603 | .5756 | -.1911 | .1063 |
| gender | .0873 | .0648 | 1.3481 | .1785 | -.0401 | .2147 |
| SECTOR | .0869 | .0702 | 1.2382 | .2165 | -.0511 | .2250 |
| tenureL | .0002 | .0054 | .0389 | .9690 | -.0104 | .0108 |

Interactions:

int_1 MINDFUL X ELW

R-square increase due to interaction(s):

| int_1 | R2-chng | F | df1 | df2 | p |
|-------|---------|-------|--------|----------|-------|
| int_1 | .0008 | .3139 | 1.0000 | 360.0000 | .5756 |

Conditional effect of X on Y at values of the moderator(s):

| ELW | Effect | se | t | p | LLCI | ULCI |
|--------|--------|-------|--------|-------|--------|-------|
| 2.9743 | .1525 | .0715 | 2.1345 | .0335 | .0120 | .2931 |
| 3.6213 | .1251 | .0472 | 2.6492 | .0084 | .0322 | .2180 |
| 4.2683 | .0977 | .0644 | 1.5185 | .1298 | -.0288 | .2243 |

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.

***** JOHNSON-NEYMAN TECHNIQUE *****

Moderator value(s) defining Johnson-Neyman significance region(s):

| Value | % below | % above |
|--------|---------|---------|
| 4.0496 | 74.3869 | 25.6131 |
| 2.8133 | 10.8992 | 89.1008 |

Conditional effect of X on Y at values of the moderator (M)

| ELW | Effect | se | t | p | LLCI | ULCI |
|--------|--------|-------|--------|-------|--------|-------|
| 1.1765 | .2287 | .1955 | 1.1697 | .2429 | -.1558 | .6132 |
| 1.3676 | .2206 | .1815 | 1.2153 | .2250 | -.1364 | .5776 |
| 1.5588 | .2125 | .1676 | 1.2679 | .2056 | -.1171 | .5421 |
| 1.7500 | .2044 | .1538 | 1.3292 | .1846 | -.0980 | .5068 |
| 1.9412 | .1963 | .1401 | 1.4014 | .1620 | -.0792 | .4718 |
| 2.1324 | .1882 | .1266 | 1.4871 | .1379 | -.0607 | .4371 |
| 2.3235 | .1801 | .1133 | 1.5902 | .1127 | -.0426 | .4028 |
| 2.5147 | .1720 | .1003 | 1.7151 | .0872 | -.0252 | .3692 |
| 2.7059 | .1639 | .0878 | 1.8673 | .0627 | -.0087 | .3365 |
| 2.8133 | .1594 | .0810 | 1.9666 | .0500 | .0000 | .3187 |
| 2.8971 | .1558 | .0760 | 2.0511 | .0410 | .0064 | .3052 |
| 3.0882 | .1477 | .0652 | 2.2649 | .0241 | .0195 | .2760 |
| 3.2794 | .1396 | .0562 | 2.4858 | .0134 | .0292 | .2501 |
| 3.4706 | .1315 | .0497 | 2.6444 | .0085 | .0337 | .2293 |
| 3.6618 | .1234 | .0470 | 2.6252 | .0090 | .0310 | .2159 |
| 3.8529 | .1153 | .0486 | 2.3714 | .0182 | .0197 | .2109 |
| 4.0441 | .1072 | .0542 | 1.9783 | .0487 | .0006 | .2138 |
| 4.0496 | .1070 | .0544 | 1.9666 | .0500 | .0000 | .2140 |
| 4.2353 | .0991 | .0627 | 1.5815 | .1146 | -.0241 | .2224 |
| 4.4265 | .0910 | .0730 | 1.2460 | .2136 | -.0526 | .2347 |
| 4.6176 | .0829 | .0846 | .9798 | .3278 | -.0835 | .2493 |
| 4.8088 | .0748 | .0970 | .7715 | .4409 | -.1159 | .2656 |
| 5.0000 | .0667 | .1099 | .6073 | .5440 | -.1493 | .2828 |

Data for visualizing conditional effect of X on Y

Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/MINDFUL ELW RELAT.
BEGIN DATA.

| | | |
|--------|--------|--------|
| 3.5101 | 2.9743 | 3.5509 |
| 4.1729 | 2.9743 | 3.6520 |
| 4.8358 | 2.9743 | 3.7532 |
| 3.5101 | 3.6213 | 3.7052 |
| 4.1729 | 3.6213 | 3.7882 |
| 4.8358 | 3.6213 | 3.8711 |
| 3.5101 | 4.2683 | 3.8595 |
| 4.1729 | 4.2683 | 3.9243 |
| 4.8358 | 4.2683 | 3.9891 |

END DATA.

GRAPH/SCATTERPLOT=MINDFUL WITH RELAT BY ELW.

* Estimates are based on setting covariates to their sample means.

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:

95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:

64

----- END MATRIX -----

restore.