



How followers' neuroticism buffers the role of the leader in their daily mental health via daily positive affect: A multilevel approach

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ABSTRACT

This study expands on the existing research on employees' work-related mental health by analyzing (1) the relationship between within-person fluctuations in perceived leadership effectiveness and positive affect and mental health and (2) between-person variations in neuroticism as a relevant boundary condition of this relationship. Multilevel data was collected from 224 working adults (2240 measurement occasions). The results demonstrated that fluctuations in the perception of the leader's effectiveness were positively related to daily positive affect, and this relationship was moderated by the followers' levels of neuroticism, in such a way that higher levels of neuroticism buffered the positive effect of leadership effectiveness on positive affect. The findings also evidenced a positive relationship between daily positive affect and daily mental health, as well as a significant indirect effect from perceived leadership effectiveness to daily fluctuations in mental health via daily fluctuations in positive affect. An effective leader makes employees feel more positive affect during the day, which is beneficial to their daily mental health; however, this relationship is may be impaired by the employees' levels of neuroticism. Practical implications for theory and practice are discussed.

1. Introduction

Mental health is of tremendous importance to everyone. With the COVID-19 pandemic crisis – a traumatic event (Ettman et al., 2020) - this importance has become even more salient, in part, because mental health – an indicator of non-clinical ill-being or psychological suffering (e.g., depressive symptoms, anxiety, and stress) (Valkenburg et al., 2022) - has become a factor of volatility with consequences for overall health and work-related outcomes (Jones, Atterbury, et al., 2021). With such volatility, scholars and managers have made efforts to understand what could reverse this trend.

Indeed, the identification of mental health protective factors is an important step in understanding what strategies organizations may develop to improve their employees' mental health (Stellman et al., 2008). Among the different protective factors studied, the leader has been identified as one of the most relevant ones (Davidovitz et al., 2007; Jones, Mitra, and Bhuiyan, 2021) due to his/her influence over his or her team members' affective states (Yukl, 2012) and behaviors (Weinberger, 2009). As Yukl (2012) noted, the leaders' behaviors not only contribute to the way that their followers judge them as effective (or not) – i.e., “the

perceived leadership effectiveness” (Sy & van Knippenberg, 2021) - but also influence their emotions (e.g., satisfaction) throughout the working day. “Leadership effectiveness reflects judgments of how well someone performs as a leader” (Sy & Knippenberg, 2021, p. 11). We thereby argue that leaders' effectiveness will contribute to their followers' mental health via their positive affective experiences. However, relying on the cognitive appraisal theory, we argue that the means through which a follower assesses his/her leader's behaviors will be moderated by his/her levels of neuroticism - the tendency to view the world with a black veil (Cattell & Scheier, 1961). Neuroticism will buffer the positive effect of the leader's effectiveness on their followers' positive affect, impairing this beneficial influence on their mental health.

Considering the importance of leaders for their team members' mental health, exploring how and when this occurs deserves more studies. Hence, the aim of this research is to understand the protective factors of employees' mental health by analyzing within-person situational factors (leaders' effectiveness) and affective factors (positive affect) as causal mechanisms. Moreover, because individual differences are crucial when understanding individual judgments, we considered neuroticism as a cross-level boundary condition in these relations.

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2. Theoretical background

2.1. The relationship between leaders' perceived effectiveness and positive affect

Organizations need leaders who work effectively and help their workers to deal with uncertain environments that often require changes. Effective leadership may be defined as “the ability to influence, motivate, and direct others to achieve expected goals” (Noureddine, 2015, p. 65).

Having effective leaders is thereby critical for both workers and organizations. Concerning organizations, effective leaders can increase positive outcomes and objective results (Goleman, 2000), and with regard to employees, leaders not only influence them emotionally to perform better but can also make them feel better at work, by influencing their well-being and affect (Alimo-Metcalfe et al., 2008; Siddiqui et al., 2021).

The association between effective leadership and employee outcomes has been supported. For instance, from a social exchange perspective (Blau, 1964), there may be influence from an effective leader on his/her followers if a social exchange occurs. That is, when there is a reciprocity of behavior exchange (e.g., Baran et al., 2012) – as highlighted by the reciprocity norm. Moreover, the more perceived quality in social exchanges between a leader and his/her followers, the higher the perceived leadership effectiveness, and hence the greater positive influence of the leader over the workers, both affectively and behaviorally.

Several studies have shown that effective leaders tend to positively influence their followers' affective states – the set of experienced emotions throughout the day (Bolger & Schilling, 1991) – and, consequently, their mental health (Puccio et al., 2020). Moreover, Avolio and Bass (1995) suggested that when leaders engage in behaviors directed towards satisfying their followers' needs (e.g., helping them to achieve a goal) or act in a way that best represents their follower's interests (e.g., providing conditions for teleworking), they make them feel more positive emotions – i.e., positive affect (Gable et al., 2000) – and likely influence their well-being (Leroy et al., 2018; Suls et al., 1998).

In addition, Bass (1985) highlighted that the leadership process fluctuates, that is, the same leader might engage in different behaviors at different times in different situations. Indeed, behaviors tend to fluctuate over time – i.e., the leaders' perceived effectiveness (Sy & van Knippenberg, 2021); hence it is likely that it presents within-person fluctuations and influences their follower's emotions throughout the working day. As such, we will test the following hypothesis:

Hypothesis 1. Within-person fluctuations in perceived leadership effectiveness are positively related to within-person fluctuations in positive affect.

2.2. The moderating role of neuroticism

The influence of the leader on his/her team members' affective states is dependent on how they perceive and judge the leader (Ng et al., 2008). The same behavior from the leader may evoke different evaluations of his/her effectiveness. Plus, these judgments are strongly influenced by the followers' personalities (Serfaty & Sherman, 2013). Indeed, personality traits are relevant due to their role in influencing how individuals act and react to situations and others' behaviors (Jonason et al., 2020; Zajenkowski et al., 2020).

Trait theory (McCrae & Costa, 2008) explains the role of personality traits in the way through which individuals perceive behaviors and situations. Accordingly, personality traits drive individuals to appraise situations in a certain way. In other words, traits are viewed as distal, upstream predictors of downstream outcomes. For reasons outlined below, neuroticism will negatively influence cognitive appraisals of situations, and these will be viewed as more threatening when compared

to others (Jonason & Sherman, 2020).

Neuroticism is a trend to view the world through a black veil (Barlow et al., 2014). It is characterized by ‘black perceptive patterns’ including (1) a tendency to view a “black world” around – i.e., the world as a threatening and dangerous place, accompanied by (2) beliefs of inability to deal with unexpected and challenging events, with (3) an intensification and inflated negative emotionality (Barlow et al., 2014). Hence, neuroticism makes individuals regularly experience negative affect. This negative affect tends to be more intense and is often accompanied by lower levels of self-regulatory resources in response to stressful situations or environments.

Empirically, neuroticism has been analyzed as a moderator of the relationship between several conditions (e.g., events, or other's behaviors) (e.g., Junça-Silva & Silva, 2022). For instance, the affective events theory (Weiss & Cropanzano, 1996) argues that affective events trigger affective reactions that influence attitudes; however, personality traits moderate the way in which individuals affectively react to such events. From this standpoint, neuroticism shapes how individuals react to events or other behaviors (e.g., leader's behaviors). As empirically evidenced, highly neurotic individuals are more easily moody, angry, and frustrated, perceiving negative behaviors more severely (Thompson, 2008). Moreover, neurotic individuals are more volatile to situational and behavioral influence (Goddard et al., 2001), and tend to be more susceptible to mental health problems, so they become emotionally exhausted and burnout more easily (e.g., Lunansky et al., 2020).

Based on that, we hypothesize that team members' neuroticism – as a trait – will influence the relationship between the perception of the leaders' effectiveness on their positive affective reactions:

Hypothesis 2. Neuroticism moderates the within-person relationship between daily fluctuations in perceived leadership effectiveness and daily fluctuations in positive affect such that for those who score low (vs. high) on neuroticism, perceived leadership effectiveness will be more strongly positively related to positive affect.

2.3. The indirect relationship between the leaders' effectiveness and mental health via positive affect

Mental health refers to an individual's general psychological health conditions, such as happiness and vitality (Bai et al., 2020). One factor that may promote workers' mental health is the leader's behavior and effectiveness. Indeed, effective leaders may significantly influence their followers psychologically, in part because they emotionally contaminate and inspire them through positive affect (Goleman et al., 2002). Positive affect is the set of daily experienced emotions (e.g., enthusiasm or contentment) regarded as valuable in the work context that is able to drive the motivation and develop the resources (e.g., energy) needed to achieve higher performance (Diener et al., 2020). Positive affect is thereby a valuable resource that broadens and builds the workers' cognitive and behavioral repertoire (Fredrickson, 2001) and influences their mental health. For instance, if one is having a good day because the leader behaved in a fair and supportive manner, making him/her experience positive affect (Norman et al., 2010), it is likely that s/he feels happier and mentally healthier at the end-of-the-day. Hence, positive affect positively influences mental health and may indeed be a mechanism through which perceived leadership effectiveness influences mental health.

Just like behaviors, positive affect also presents within-person fluctuations that are influenced by situational factors, such as daily micro-events (Junça Silva et al., 2022; Junça-Silva et al., 2023). Building on the empirical and theoretical evidence described, we expect that within-person fluctuations in positive affect not only lead to higher levels of mental health but also mediate the relationship between perceived leadership effectiveness and mental health (see Fig. 1).

Hypothesis 3. Within-person fluctuations in positive affect are positively related to within-person fluctuations in mental health.

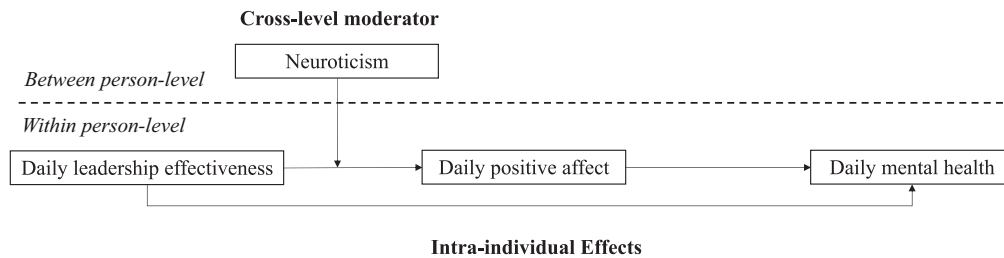


Fig. 1. The hypothesized multilevel moderated mediation model.

Hypothesis 4. Within-person fluctuations in perceived leadership effectiveness are positively related to daily fluctuations in mental health through within-person fluctuations in positive affect.

3. Method

3.1. Participants and procedure

This study is based on multilevel research that included one general and diary survey answered for 10 workdays (from Monday to Friday for two weeks). All the scales were prepared in Portuguese through a process of translation and back-translation. All the surveys (general and daily) were answered online as a way to check the date on which respondents answered them.

We asked 300 Portuguese working adults, from the researcher's professional networks, to take part in this study, of which 251 completed the general survey (response rate: 83.6 %), 233 completed at least one diary survey (response rate: 77.6 %), and 224 completed all 10 daily online surveys (response rate: 74.6 %, measurement occasions = 2240). This sample size is considered more than adequate because, as suggested by Maas and Hox (2005), when the aim is to perform cross-level interactions (i.e., between-person moderators on a within-person relationship), level 2 variables (neuroticism at the between-person level) must exceed 30 respondents in a multilevel framework (days nested within persons) resulted in an accurate estimation of standard errors. Thus, our sample of 224 participants had satisfactory power and accuracy, as it far exceeds the minimum sample requirements (Maas & Hox, 2005).

Overall, 60.6 % were female, 43.8 % have a university degree, and 40.4 % a high school diploma. The mean age was 37.27 years old ($SD = 12.35$), and the mean organizational tenure was 16.39 years ($SD = 12.60$). They reported working 38.14 h per week ($SD = 10.93$) on average. They worked in diverse occupational sectors, including education (49 %), management (33 %), and logistics (18 %).

3.2. Measures

3.2.1. Cross-sectional survey

A cross-sectional survey was used to gather sociodemographic information (i.e., sex, age, tenure, and educational level) and the between-person variable – neuroticism. This was measured through four items from the Mini-IPIP Scales (Donnellan et al., 2006). Participants were asked to rate the items on a 5-point Likert-type scale ranging from 1 (very inaccurate) to 5 (very accurate) (e.g., “I have frequent mood swings”) ($\omega = 0.78$).

3.2.2. Daily survey

We followed the recommended procedure for daily diary methods (e.g., Ohly et al., 2010). As such, to highlight the daily nature of the questions, all items were re-worded to the past tense and included “today” at the beginning of the item. Moreover, to improve reliability and encourage the participants' completion of the survey we used short scales. Finally, as suggested by Geldhof et al. (2014) we tested the level-specific composite reliability (i.e., within-person ω).

3.2.3. Perceived leadership effectiveness

Participants rated the leader's effectiveness using four items developed by Giessner and van Knippenberg (2008). An example item was “Today, I liked to work together with my leader.” Individuals rated these items using a 5-point scale ranging from 1 (totally disagree) to 5 (totally agree). The within-person omega reliability coefficient was $\omega = 0.85$.

3.2.4. Positive affect

We used eight items from the Multi-Affect Indicator (Warr et al., 2014), to assess the experienced daily positive affect (e.g., “enthusiasm”). Participants answered on a 5-point scale (1–never; 5–always) ($\omega = 0.78$).

3.2.5. Mental health

We measured mental health through three items of the SF-36v2 Health Survey of Ware et al. (2007). Respondents rated the items on a 5-point Likert scale ranging from 1 (none of the time) to 5 (all of the time). An example item is: “Today, how much of the time have you felt calm and peaceful?” ($\omega = 0.74$).

3.2.6. Control variables

We only used the time of data collection (from Monday to Friday – a within-person variable) as it could influence the criterion variables (e.g., Hox & Boeijs, 2005).

3.3. Data analysis

First, we used JASP to perform confirmatory factor analyses. Table 1 presents the fit statistics. The first measurement model (M1) was the hypothesized model, including the following four latent factors: perceived leadership effectiveness, positive affect, mental health, and neuroticism. Four alternative CFA models were tested: (1) one alternative model comprised the same four latent factors and a common method factor (M1*); another alternative model comprised the two latent factors in which leadership effectiveness and positive affect were loaded onto one factor (M2), and (2) the other one in which leadership effectiveness, positive affect, and mental health were loaded on one factor (M3). Finally, we tested a CFA with only one latent variable (M4) – that is, all the variables were loaded onto one factor. Therefore, we assessed the model fit for each of these CFAs. We considered the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker–Lewis index (TLI), and the standardized root mean square residual (SRMR) to achieve that. As Schreiber et al. (2006) described, a model presents a good fit when: (1) the CFI and TLI values are higher than 0.90 and; (2) the values of RMSEA and SRMR are below 0.08. Following these criteria, the hypothesized measurement model (M1) had an acceptable fit. Moreover, we compared all the models to the first one (M1) through a χ^2 -difference test. This showed that the hypothesized model had the best fit (Fig. 1). We accepted these results as evidence that the variables are distinct constructs at the within-person daily level.

We used SPSS with the macro-Multilevel mediation (MLMed) to assess the hypothesized moderated mediation model (Rockwood, 2020). We used this macro because (1) other studies have reported reliable

Table 1

Means, standard deviations, and zero-order and person-centered correlations.

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. PLE	3.44	0.91	–	0.38***	0.29***	–	–0.01
2. PA	3.53	0.83	0.33**	–	0.61***	–	0.01
3. Mental health	3.67	0.97	0.12*	0.36**	–	–	0.02
4. Neuroticism	2.73	0.98	–0.20**	–0.44**	–0.23**	–	–
5. Time	–	–	–0.04	0.06	0.02	–0.03	–

Note. Zero-order correlations are presented below the diagonal ($N = 224$). Person-centered correlations are presented above the diagonal ($N = 2240$). Means and standard deviations are presented at the between-person level. We did not estimate person-centered correlations for the between-person variable perceived uncertainty. PLE: perceived leader's effectiveness. PA: positive affect.

* $p < 0.05$.** $p < 0.01$.*** $p < 0.001$.

findings through the use of it (e.g., Rockwood, 2020), (2) it appears to deliver similar results to other statistical software (e.g., Mplus), and (3) because it is particularly relevant when testing a cross-level interaction (Rockwood, 2020). Further, Mlmed tests all indirect effects with Monte Carlo simulations generating 95 % CI using 10,000 resamples, which is useful to reduce the bias in multilevel mediation estimates (Rockwood & Hayes, 2017).

In a 1-1-1-multilevel model, the within-person effects provide evidence of the extent to which daily variables are related to each other. To estimate within-person effects, Mlmed person-mean centers variables by subtracting the participants' general mean from their mean reported for each day. Hence, the within-person effects specify the extent to which participants' person-centered score of an independent variable (e.g., daily perceived leadership effectiveness minus the overall mean for perceived leadership effectiveness across days) is related to their person-centered score of another variable (e.g., daily positive affect minus the overall mean for positive affect across days). On the other hand, between-person effects provide evidence of Level 2 relationships (i.e., the extent to which persistent differences across variables between participants are related to outcomes). To estimate between-person effects, Mlmed enters person-means at Level 2 (e.g., the mean of positive affect across the 10 days). Hence, the between-person effects specify the extent to which an individual mean across the 10 days deviates from the grand mean (i.e., mean across all participants in the study).

As we had a multilevel data structure, that is, days nested within persons, we analyzed the intra-class correlation coefficient (ICC) for perceived leadership effectiveness, positive affect, and mental health (Hox, 2010). The results showed that a significant proportion of the variance (ICC values were 0.53, 0.48, and 0.27, respectively) was attributable to within-person fluctuations. Moreover, because all the ICCs were higher than 0.05 (Dyer et al., 2005), we can assume that the data had indeed a multilevel structure (days nested within persons). As such, following a multilevel modeling approach appears to be a valid strategy (Marcoulides & Schumacker, 2013).

Table 2Fit statistics for the models based on confirmatory factor analyses accounting for a nested data structure ($N_{\text{individuals}} = 224$; $N_{\text{observations}} = 2240$).

Model		χ^2 (df)	RMSEA	CFI	TLI	SRMR	Comparison	$\Delta\chi^2$	Δdf	p
M1	4 latent factors	1113.39 (62)	0.09	0.99	0.99	0.06				
M1*	4 latent factors with CMF	1270.25 (64)	0.11	0.98	0.98	0.07	M1*-M1	156.86	2	<0.001
M2	3 latent factors	4167.66 (64)	0.19	0.96	0.95	0.13	M2-M1	3054.27	2	<0.001
M3	2 latent factors	2931.61 (34)	0.22	0.94	0.92	0.15	M3-M1	1818.22	28	<0.001
M4	1 latent factor	7002.59 (65)	0.24	0.93	0.92	0.17	M4-M1	5888.80	3	<0.001

Note. RMSEA: root mean square error of approximation; CFI: comparative fit index; TLI: Tucker–Lewis' index; SRMR: standardized root mean square residual; CMF: common method factor; PLE: perceived leadership effectiveness; PA: positive affect.

Best-fitting model in italics.

M1: PLE, PA, mental health, and neuroticism fit load onto four separate latent factors.

M1*: PLE, PA, mental health, and neuroticism fit load onto four separate latent factors + one higher-order common method factor.

M2: PA and performance were loaded onto one latent factor plus PLE and neuroticism were loaded onto two separate latent factors.

M3: PLE, PA, and mental health were loaded onto one latent factor, plus neuroticism was loaded onto one latent factor.

M4: all the variables (PLE, PA, mental health, and neuroticism) were loaded onto one single factor.

4. Results

4.1. Descriptive results

Table 2 presents the descriptive statistics and zero-order and person-centered correlations of the variables to be tested.

4.2. Hypotheses testing

We used restricted maximum likelihood (REML) estimation to calculate the model parameters. As suggested by Griep et al. (2022), we analyzed which model best fits the data, through the Bayesian information criterion (BIC) – that is the balance between the number of parameters (i.e., model complexity) and the fit of the model to the data. We compared the BIC and the sample size-adjusted BIC values between the multilevel 1-1-1 mediating model with the multilevel moderated mediation model. The results showed that the multilevel moderated mediation model was the one with the lowest BIC value, hence it was the one that presented the best fit to the data (BIC = 6966.95; sample size-adjusted BIC = 6970.95) when compared to the multilevel mediating model (BIC = 7368.24; sample size-adjusted BIC = 7372.24). Fig. 2 presents the estimated paths of the model.

As hypothesized, daily fluctuations in leadership effectiveness (Estimate = 0.58, 95 % CI = [0.37, 0.78]) related positively to daily fluctuations in positive affect at the within-person level, lending support to Hypothesis 1.

Next, the results support Hypothesis 2 as we found a positive cross-level relationship between neuroticism and daily fluctuations in leadership effectiveness in relation to daily fluctuations in positive affect (Estimate = –0.10, 95 % CI = [–0.17, –0.03]).

Moreover, neuroticism buffered the positive relationship between leadership effectiveness and daily positive affect. As Fig. 3 shows, the strength of the relationship between daily fluctuations in leadership effectiveness and daily fluctuations in positive affective experiences was

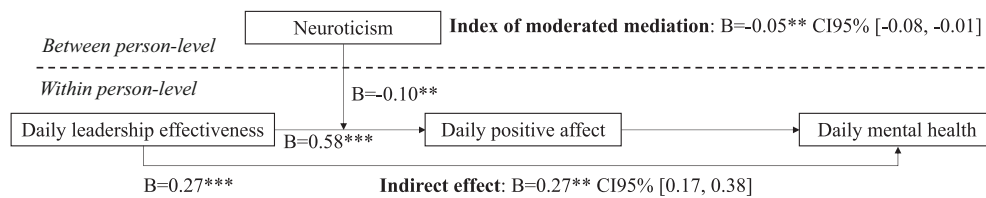


Fig. 2. Estimated paths in the full multilevel moderated mediation model.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

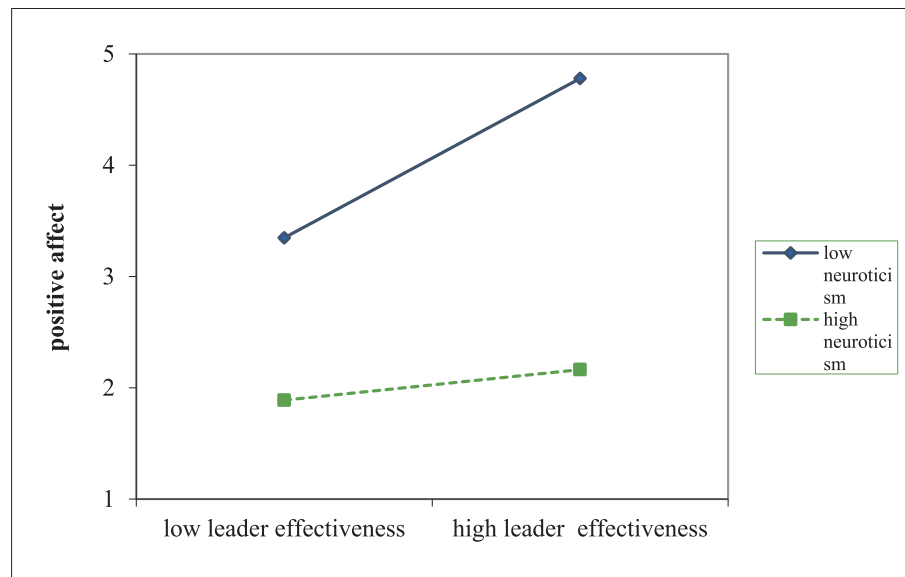


Fig. 3. Cross-level interaction of neuroticism and leadership effectiveness in relation to daily positive affect.

smaller for those scoring high on neuroticism in comparison to individuals scoring low on neuroticism. That is, daily positive affect was less dependent on daily fluctuations in leadership effectiveness when employees showed high neuroticism. Hypothesis 2 was thus supported.

In addition, the results showed that daily fluctuations in positive affect related positively to daily fluctuations in mental health (Estimate = 0.47, 95 % CI = [0.41, 0.53]), thereby providing support for Hypothesis 3.

The results showed a partial but significant indirect effect from daily fluctuations in leadership effectiveness to daily fluctuations in mental health (Estimate = 0.27, 95 % CI = [0.17, 0.38]) via daily fluctuations in positive affect. Hypothesis 4 was thereby supported.

Furthermore, the results evidenced that the indirect effect was conditional on the values of the moderator (i.e. neuroticism) (index of moderated mediation: $B = -0.05^{**}$ CI 95 % [-0.08, -0.01]), in such a way that it was stronger for those who scored lower on neuroticism ($B = 0.47$, $p < 0.01$) and non-significant for those who scored higher on neuroticism ($B = 0.09$, $p > 0.05$) (Dawson & Richter, 2006).

5. Discussion

This study reveals a process through which the effectiveness of a leader impacts the followers' affect and mental health. It also provides evidence of the subjectivity inherent to this relation, as it appears to be conditional on the levels of the followers' neuroticism.

The study reveals that the perceived leadership effectiveness fluctuates over time, that is, individuals do not perceive their leaders as effective every day. There may be certain situations or behaviors that shape how one sees and perceives a leader. These fluctuations will shape the followers' affective reactions. This study gives support to the positive relationship between leaders' effectiveness and their followers'

positive affect. Hence, the more positive the leader is perceived, the more frequently positive affect is experienced by their followers. This means that a leader who is perceived as effective tends to influence the work climate positively and emotionally affect the others around (Weinberger, 2009). Indeed, followers perceive and judge their leader's effectiveness by evaluating his/her behaviors (van Knippenberg, 2011). Hence, when leaders engage in behaviors that satisfy their followers' needs (e.g., giving recognition) and motivations (e.g., promoting teleworking), it is likely that their positive affect increases (Dabke, 2016).

Moreover, positive affect is positively related to mental health and hence justifies how leaders' effectiveness influences the followers' mental health; this means that when leaders are perceived as effective, their followers tend to feel positive affect more frequently, and the more positive affective experiences, the higher the individuals' mental health. In other words, on days that individuals perceive the leaders as effective, they experience more positive affect, and tend to feel mentally healthy. This is in line with recent studies that evidence the positive influence of both the leader and the positive affect on mental health outcomes (e.g., Brown & Fredrickson, 2021).

As hypothesized, neuroticism moderates the relationship between leaders' effectiveness on positive affect. That is, the positive association between a leader's effectiveness and positive affect is buffered when individuals score high on their trait neuroticism. Trait theory can explain this as it argues that underlying personality traits, such as neuroticism, influence how individuals perceive and judge others' behaviors (Costa & McRae, 1999). Accordingly, neuroticism – the black perceptive bias – will likely cause individuals to perceive the leader's behaviors as more negative/threatening than others. For instance, Junça-Silva and Silva (2022) have showed that highly neurotic individuals experienced more negative affect under uncertain working contexts (when compared to lower scores of neuroticism). Similarly,

Aschwanden et al. (2021) showed that neurotic employees had more concerns during the COVID-19 crisis about finances, and relationships, and scored lower on happiness and well-being. Modersitzki et al. (2021) also showed that neurotic individuals perceived work measures and political restrictions as more limiting than individuals with lower levels of neuroticism. Hence, neuroticism negatively shapes how individuals perceive and react to their leaders' effectiveness.

Overall, this study evidences the positive path between a leader's effectiveness on their followers' mental health via positive affect, and that neuroticism buffers that effect.

5.1. Limitations and future directions

Despite the positive aspects of this study, there are also limitations to consider. First, we used self-reported measures which could result in common method bias (Podsakoff et al., 2012). Furthermore, we used a non-probabilistic convenience sample that may create some bias in the findings. Future studies should rely on probabilistic samples to avoid this kind of bias.

Second, despite the daily diary study, we only collected data once per day. Therefore, we cannot infer causality between the variables. As such, future studies should consider testing the model with a daily diary design but resorting to a data collection made at multiple times per day. Doing so, will not only extend knowledge of these relationships but also provide additional robustness to the findings.

Third, although our sample is statistically sufficient, it is desirable to have a larger sample that allows testing the model and generalizing the results with greater confidence.

Fourth, we resorted to the followers' perception of their leadership's effectiveness. These perceptions are subjective in nature, as they may depend on who perceives them (the follower) and the time of their perceptions, as the perception may change from day to day, and from moment to moment (Weiss & Cropanzano, 1996). As such, the same leader's behavior may be evaluated positively on one day, but on another be appraised as negative. Thus, future studies should rely on multiple data sources, for instance, collecting data from followers and the leader him/herself.

5.2. Practical implications

Given the results of the study, there are some implications that managers should consider. First, it is relevant to emphasize the importance that leaders have in their followers' work-related routines. From a practical standpoint, managers should consider useful strategies to internally reinforce the role of the leaders regarding their team. For instance, organizations should consider training or workshop sessions with leaders to ameliorate and consolidate their roles on a daily basis. That is, leaders should focus not only on the technical aspects of their work but also on the human side of the leader's daily in-role performance. Hence, if leaders could decrease their workload, they could dedicate more time to understand how specific contextual features of the work setting interacts with personality, and to give more attention and support to their followers, namely listening to them and providing resources, as, for instance, flexible work arrangements, which can contribute to improve their well-being and performance. Furthermore, training leaders to create a positive work environment with good relationships with their followers will likely improve their perception of the leader which in turn will enhance their positive affect and promote mental health. Moreover, it should be important to give psychological counseling or coaching to leaders whenever appropriate, namely regarding their social interactions with their workers to promote a positive working climate.

Managers may also consider specific initiatives for employees' better deal with "black days" (Junça-Silva & Vilela, 2023). For instance, providing training opportunities, as mindfulness and emotional intelligence, to help them develop self-awareness and coping skills that could

enable them in reducing the negative bias that underlies days in which individuals might have more "blackness" in their thoughts and appraisals.

6. Conclusions

This study shows the potential beneficial effects of the daily perceived leader's effectiveness on their followers' daily positive affect and daily mental health. This relationship, however, depends upon their followers' levels of neuroticism, in a way that levels of neuroticism buffer any beneficial effect.

Compliance of ethical standard statement

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants involved in the study.

CRediT authorship contribution statement

Ana Junça-Silva was responsible for the conceptualization, methodology, data collection, and writing the manuscript.

António Caetano was responsible for resources, conceptualization, validation, and visualization.

Conflict of interest

The authors declare that they have no conflicts of interest.

Data availability

The data is available only upon reasonable request to the authors.

References

- Alimo-Metcalfe, B., Alban-Metcalfe, J., Bradley, M., Mariathasan, J., & Samele, C. (2008). The impact of engaging leadership on performance, attitudes to work and wellbeing at work: A longitudinal study. *Journal of Health Organization and Management*.
- Aschwanden, D., Strickhouser, J. E., Sesker, A. A., Lee, J. H., Luchetti, M., Stephan, Y., ... Terracciano, A. (2021). Psychological and behavioural responses to coronavirus disease 2019: The role of personality. *European Journal of Personality*, 35(1), 51–66.
- Avolio, B. J., & Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: A multi-level framework for examining the diffusion of transformational leadership. *The Leadership Quarterly*, 6(2), 199–218.
- Bai, Q., Bai, S., Dan, Q., Lei, L., & Wang, P. (2020). Mother phubbing and adolescent academic burnout: The mediating role of mental health and the moderating role of agreeableness and neuroticism. *Personality and Individual Differences*, 155, Article 109622. <https://doi.org/10.1016/j.paid.2019.109622>
- Baran, B. E., Shanock, L. R., Rogelberg, S. G., & Scott, C. W. (2012). Leading group meetings: Supervisors' actions, employee behaviors, and upward perceptions. *Small Group Research*, 43(3), 330–355.
- Barlow, D. H., Ellard, K. K., Sauer-Zavala, S., Bullis, J. R., & Carl, J. R. (2014). The origins of neuroticism. *Perspectives on Psychological Science*, 9(5), 481–496.
- Bass, B. M. (1985). Leadership: Good, better, best. *Organizational Dynamics*, 13(3), 26–40.
- Blau, P. (1964). *Exchange and power in social life*. New York, NY, USA: Wiley.
- Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, 59(3), 355–386.
- Brown, C. L., & Fredrickson, B. L. (2021). Characteristics and consequences of co-experienced positive affect: Understanding the origins of social skills, social bonds, and caring, healthy communities. *Current Opinion in Behavioral Sciences*, 39, 58–63.
- Cattell, R. B., & Scheier, I. H. (1961). *The meaning and measurement of neuroticism and anxiety*. Ronald.
- Costa, R. R., & McCrae, P. T. (1999). A five factor theory of personality: Theory and research. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), 2008. *Handbook of personality: Theory and research* (pp. 159–181). New York, NY: Guilford.

- Dabke, D. (2016). Impact of leader's emotional intelligence and transformational behavior on perceived leadership effectiveness: A multiple source view. *Business Perspectives and Research*, 4(1), 27–40.
- Davidovitz, R., Mikulincer, M., Shaver, P. R., Izsak, R., & Popper, M. (2007). Leaders as attachment figures: Leaders' attachment orientations predict leadership-related mental representations and followers' performance and mental health. *Journal of Personality and Social Psychology*, 93(4), 632–650. <https://doi.org/10.1037/0022-3514.93.4.632>
- Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: Development and application of a slope difference test. *Journal of Applied Psychology*, 91(4), 917.
- Diener, E., Thapa, S., & Tay, L. (2020). Positive emotions at work. *Annual Review of Organizational Psychology and Organizational Behavior*, 7, 451–477.
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, 18(2), 192.
- Dyer, N. G., Hanges, P. J., & Hall, R. J. (2005). Applying multilevel confirmatory factor analysis techniques to the study of leadership. *The Leadership Quarterly*, 16(1), 149–167.
- Ettman, C. K., Abdalla, S. M., Cohen, G. H., Sampson, L., Vivier, P. M., & Galea, S. (2020). Prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. *JAMA Network Open*, 3(9), Article e2019686. <https://doi.org/10.1001/jamanetworkopen.2020.19686>
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218.
- Gable, S. L., Reis, H. T., & Elliot, A. J. (2000). Behavioral activation and inhibition in everyday life. *Journal of Personality and Social Psychology*, 78(6), 1135.
- Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods*, 19(1), 72.
- Giessner, S. R., & van Knippenberg, D. (2008). "License to fail": Goal definition, leader group prototypicality, and perceptions of leadership effectiveness after leader failure. *Organizational Behavior and Human Decision Processes*, 105(1), 14–35.
- Goddard, R., Patton, W., & Creed, P. (2001). Psychological distress in Australian case managers working with the unemployed. *Journal of Employment Counseling*, 38(2), 50–61. <https://doi.org/10.1002/j.2161-1920.2001.tb00832.x>
- Goleman, D. (2000). Leadership that gets results. *Harvard Business Review*, 78–90.
- Griep, Y., Vanbelle, E., Van den Broeck, A., & De Witte, H. (2022). Active emotions and personal growth initiative fuel employees' daily job crafting: A multilevel study. *BRQ Business Research Quarterly*, 25(1), 62–81.
- Hox, J. J. (2010). Multilevel analysis. In (2. ed.) *Quantitative methodology series Techniques and applications*. New York, NY: Routledge.
- Hox, J. J., & Boeije, H. R. (2005). Data collection, primary vs. secondary. In K. Kempf-Leonard (Ed.), *Encyclopedia of Social Measurement* (pp. 593–599). Atlanta, GA: Elsevier Science.
- Jonason, P. K., & Sherman, R. A. (2020). Personality and the perception of situations: The Big Five and Dark Triad traits. *Personality and Individual Differences*, 163, Article 110081.
- Jonason, P. K., Lowder, A. H., & Zeigler-Hill, V. (2020). The mania and ludus love styles are central to pathological personality traits. *Personality and Individual Differences*, 165, Article 110159. <https://doi.org/10.1016/j.paid.2020.110159>
- Jones, E. A., Mitra, A. K., & Bhuiyan, A. R. (2021). Impact of COVID-19 on mental health in adolescents: A systematic review. *International Journal of Environmental Research and Public Health*, 18(5), 2470. <https://doi.org/10.3390/ijerph18052470>
- Jones, N., Atterbury, K., Byrne, L., Carras, M., Brown, M., & Phalen, P. (2021). Lived experience, research leadership, and the transformation of mental health services: Building a researcher pipeline. *Psychiatric Services*, 72(5), 591–593. <https://doi.org/10.1176/appi.ps.202000468>
- Junça-Silva, A., & Silva, D. (2022). How is the life without unicorns? A within-individual study on the relationship between uncertainty and mental health indicators: The moderating role of neuroticism. *Personality and Individual Differences*, 188, Article 111462. <https://doi.org/10.1016/j.paid.2021.111462>
- Junça-Silva, A., & Vilela, C. (2023). The black unicorn effect: Micro-daily events and satisfaction decrease the COVID-19 xenophobia, but only for those with low levels of neuroticism. *Psychological Reports*, 00332941231161278.
- Junça-Silva, A., Mosteo, L., & Lopes, R. R. (2023). The role of mindfulness on the relationship between daily micro-events and daily gratitude: A within-person analysis. *Personality and Individual Differences*, 200, Article 111891.
- Junça-Silva, A., Neves, P., & Caetano, A. (2022). Procrastination is not only a "thief of time", but also a thief of happiness: It buffers the beneficial effects of telework on well-being via daily micro-events of IT workers. *International Journal of Manpower*.
- Leroy, H., Segers, J., Van Dierendonck, D., & Den Hartog, D. (2018). Managing people in organizations: Integrating the study of HRM and leadership. *Human Resource Management Review*, 28(3), 249–257.
- Lunansky, G., van Borkulo, C., & Borsboom, D. (2020). Personality, resilience, and psychopathology: A model for the interaction between slow and fast network processes in the context of mental health. *European Journal of Personality*, 34(6), 969–987.
- Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, 1(3), 86–92.
- Marcoulides, G. A., & Schumacker, R. E. (2013). *Advanced structural equation modeling: Issues and techniques*. Psychology Press.
- McCrae, R. R., & Costa, P. T., Jr. (2008). The five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *2008. Handbook of personality: Theory and research* (pp. 159–181). New York, NY: Guilford. Serfass & Sherman, 2013.
- Modersitzki, N., Phan, L. V., Kuper, N., & Rauthmann, J. F. (2021). Who is impacted? Personality predicts individual differences in psychological consequences of the COVID-19 pandemic in Germany. *Social Psychological and Personality Science*, 12(6), 1110–1130.
- Ng, K. Y., Ang, S., & Chan, K. Y. (2008). Personality and leader effectiveness: A moderated mediation model of leadership self-efficacy, job demands, and job autonomy. *Journal of Applied Psychology*, 93(4), 733.
- Norman, S. M., Avolio, B. J., & Luthans, F. (2010). The impact of positivity and transparency on trust in leaders and their perceived effectiveness. *The Leadership Quarterly*, 21(3), 350–364.
- Noureddine, D. (2015). The problem of effective leadership from the perspective of corporate management development. *Procedia - Social and Behavioral Sciences*, 181, 62–71. <https://doi.org/10.1016/j.sbspro.2015.04.866>
- Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology*.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569.
- Puccio, G. J., Burnett, C., Acar, S., Yudes, J. A., Holinger, M., & Cabra, J. F. (2020). Creative problem solving in small groups: The effects of creativity training on idea generation, solution creativity, and leadership effectiveness. *The Journal of Creative Behavior*, 54(2), 453–471.
- Rockwood, N. J. (2020). Maximum likelihood estimation of multilevel structural equation models with random slopes for latent covariates. *Psychometrika*, 85, 275–300.
- Rockwood, N. J., & Hayes, A. F. (2017, May). MLmed: An SPSS macro for multilevel mediation and conditional process analysis. In *Poster presented at the annual meeting of the Association of Psychological Science (APS)*, Boston, MA.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323–338.
- Serfass, D. G., & Sherman, R. A. (2013). Personality and perceptions of situations from the Thematic Apperception Test. *Journal of Research in Personality*, 47(6), 708–718.
- Siddiqui, I., Aurelio, M., Gupta, A., Blythe, J., & Khanji, M. Y. (2021). COVID-19: Causes of anxiety and wellbeing support needs of healthcare professionals in the UK: A cross-sectional survey. *Clinical Medicine*, 21(1), 66.
- Stellman, J. M., Smith, R. P., Katz, C. L., Sharma, V., Charney, D. S., Herbert, R., ... Southwick, S. (2008). Enduring mental health morbidity and social function impairment in world trade center rescue, recovery, and cleanup workers: The psychological dimension of an environmental health disaster. *Environmental Health Perspectives*, 116(9), 1248–1253.
- Suls, J., Martin, R., & David, J. P. (1998). Person-environment fit and its limits: Agreeableness, neuroticism, and emotional reactivity to interpersonal conflict. *Personality and Social Psychology Bulletin*, 24, 88–98.
- Sy, T., & van Knippenberg, D. (2021). The emotional leader: Implicit theories of leadership emotions and leadership perceptions. *Journal of Organizational Behavior*, 42(7), 885–912.
- Thompson, E. R. (2008). Development and validation of an international English big-five mini-markers. *Personality and Individual Differences*, 45(6), 542–548. <https://doi.org/10.1016/j.paid.2008.06.013>
- Valkenburg, P. M., Meier, A., & Beyens, I. (2022). Social media use and its impact on adolescent mental health: An umbrella review of the evidence. *Current Opinion in Psychology*, 44, 58–68. <https://doi.org/10.1016/j.copsyc.2021.08.017>
- Van Knippenberg, D. (2011). Embodiment who we are: Leader group prototypicality and leadership effectiveness. *The Leadership Quarterly*, 22(6), 1078–1091. <https://doi.org/10.1016/j.leaqua.2011.09.004>
- Ware, K. M. J. E., Jr., Bjorner, J. B., Turner-Bowker, D. M., Gandek, B., & Maruish, M. E. (2007). *User's manual for the SF-36v2TM Health Survey* (2nd ed.). Lincoln, RI: Quality Metric Incorporated.
- Warr, P., Bindl, U. K., Parker, S. K., & Inceoglu, I. (2014). Four-quadrant investigation of job-related affects and behaviours. *European Journal of Work and Organizational Psychology*, 23(3), 342–363.
- Weinberger, L. A. (2009). Emotional intelligence, leadership style, and perceived leadership effectiveness. *Advances in Developing Human Resources*, 11(6), 747–772. <https://doi.org/10.1177/1523422309360811>
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory. *Research in Organizational Behavior*, 18(1), 1–74.
- Yukl, G. (2012). Effective leadership behavior: What we know and what questions need more attention. *Academy of Management Perspectives*, 26(4), 66–85. <https://doi.org/10.5465/amp.2012.0088>
- Zajenkowski, M., Jonason, P. K., Leniarska, M., & Kozakiewicz, Z. (2020). Who complies with the restrictions to reduce the spread of COVID-19? Personality and perceptions of the COVID-19 situation. *Personality and Individual Differences*, 166, Article 110199. <https://doi.org/10.1016/j.paid.2020.110199>