

How curiosity affects contextual performance: an emotional daily dynamics perspective

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Abstract

Purpose – This research relied on the broaden-and-build (B&B) theory to explore emotional predictors for curiosity-related differences in daily engagement and contextual performance. We tested a moderated mediation model, arguing that daily positive emotions would be related to daily work engagement and contextual performance.

Design/methodology/approach – A total of 586 participants participated in a five-day diary study ($n = 2379$).

Findings – Multi-level modeling showed that, at the person level of analysis, daily positive emotions were significantly and positively related to daily work engagement and, in turn, daily performance. At the daily level of analysis, the mediation model was moderated by curiosity, such that it became stronger for individuals who scored higher on curiosity.

Originality/value – These findings make relevant theoretical contributions to understanding the power of curiosity for daily emotional dynamics in organizations. Compared to traditional between-person variables, these results also expand knowledge on within-person processes that explain daily work engagement and contextual performance. In sum, this study shows that “curiosity does not kill the cat”; instead, it makes it productive.

Keywords Curiosity, Positive emotions, Work engagement, Contextual performance, Diary studies, Multilevel modeling

Paper type Research paper

Introduction

Positive emotions have been a focus of attention from both scholars and practitioners and can be conceptualized as affective states and processes that impact diverse personal and

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Ethical approval and consent to participate: 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 was obtained from all individual participants involved in the study.

Availability of data and materials: Data and materials will be made available upon request from the authors (Ana Junça Silva: ana_luisa_silva@iscte-iul.pt).

Competing interests: The authors declare that they have no conflicts of interest.

Authors' contributions: The author conducted and developed the entire study.



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organizational outcomes (Diener *et al.*, 2020). With the recent COVID-19 crisis, positive emotions have been a key factor in buffering the negative effects felt by employees and employers. For instance, the relevance that they have not only for health but also for performance-related outcomes has been consistently recognized (e.g. Casalo *et al.*, 2021; Donaldson *et al.*, 2022).

The broaden-and-build theory (B&B) (Fredrickson, 1998, 2001) emphasizes the relevance of experiencing positive emotions during the working day as a way to broaden employees' momentary thought-action repertoires and build enduring personal resources. Specifically, positive emotions expand the scope of cognition and attention, allowing for expansive and novel work-related behaviors. Thereby, broadened mindsets have adaptive benefits even in adverse times (Junça-Silva *et al.*, 2022) because broadening builds lasting personal resources (Fredrickson, 2013). These resources can be used during the day at different times to cope with diverse affective states, job demands or work-related daily hassles (Fredrickson and Branigan, 2005). Through the experience of positive emotions, employees feel better from moment to moment, become more engaged with their work and build the resources needed to excel themselves (Dong and Geng, 2023). Thus, we expect that daily positive emotions will enlarge the individuals' daily work engagement, defined as a set of vigor, dedication and absorption (Bakker, 2022), which in turn, will enable their attention to the task at hand, improving their daily contextual performance. Despite the existence of empirical tests of these assumptions, the knowledge about the interactions among these variables is scarce, and we know even less about the interaction between individual characteristics (e.g. curiosity) and daily work engagement.

Diverse studies have shown the effect of curiosity on diverse outcomes, such as well-being (e.g. Kashdan and Steger, 2007); nevertheless, studies exploring its influence on work-related outcomes are scarce (Kashdan *et al.*, 2020). Curiosity is the propensity to seek out novel, complex and challenging interactions with what surrounds us (Kashdan *et al.*, 2018). It influences individuals to actively look for solutions to problems or work-related situations, which might improve performance. In the long run, it allows the individual to expand cognitive, intellectual and creative capacities (von Stumm and Ackerman, 2013), which may benefit job performance. Considering the main tenet of the conservation of resources theory (COR; Hobfoll, 1989), personal resources such as curiosity may not only promote the acquisition and development of other resources but also avoid the loss of needed resources to cope with daily life at work (Hobfoll *et al.*, 2018). Thus, it is likely that curious employees, when engaged with their work, tend to achieve higher levels of contextual performance. As such, we expect that curiosity moderates the path from daily positive emotions to contextual performance via work engagement, making this relationship stronger for those with higher levels of curiosity.

Despite the positive outcomes of curiosity, there are few studies analyzing how it relates to other resources (work engagement) and organizational outcomes (performance). Moreover, most studies focused on curiosity and its impact on personal outcomes, focusing on human curiosity rather than work-related curiosity (Kashdan *et al.*, 2020).

In this study, we rely on the broaden-and-build (B&B) theory and the COR theory to propose a motivational path in which daily positive emotions, conceived as energy repertoires, will increase work engagement, which in turn will improve performance. However, because curiosity enables exploration and openness to what is new, we expect that it will moderate the motivational path. That is, curiosity will likely interact with daily work engagement, strengthening its effect on contextual performance.

This study may also contribute to both theory and practice. First, it may expand knowledge regarding the mechanisms underlying the relationship between daily positive emotions and contextual performance. Even though there is evidence that positive emotions influence how employees behave at work (Junça-Silva *et al.*, 2022), so far, scarce studies have explored the interaction between resources (work engagement and curiosity) to predict

contextual performance. Hence, demonstrating that curiosity when interacting with work engagement enhances contextual behaviors at work may open future venues for research on the topic of curiosity at work (Kashdan *et al.*, 2020). Furthermore, it may also contribute to the development of strategies that may support employees' development of curiosity. Lastly, exploring curiosity as a resource that shapes employees' reactions to daily positive emotions may lead to more accurate conclusions about the importance of this trait in work-related daily life. This may, in turn, serve to delineate practical strategies for organizations that want a productive workforce.

Theoretical framework

The broaden-and-build theory of positive emotions

Positive emotions have been recognized as important for individuals and organizations, as they impact positive personal and work-related outcomes, such as performance (Carmona-Halty *et al.*, 2019; Mehmood *et al.*, 2023). Positive emotions have been defined as affective states, processes and functions with value for individuals' behaviors (Diener *et al.*, 2020; Stanley and Schutte, 2023).

The B&B theory (Fredrickson, 1998) is one of the most frequent theoretical bases for understanding positive emotions. This theory argues that positive emotions broaden individuals' thoughts, actions and dispositions by stimulating their cognition, attention and novel behaviors (Fredrickson, 1998, 2001). Thus, by broadening an individual's thoughts and actions, positive emotions build enduring personal resources (e.g. work engagement). Hence, positive emotions appear to be a source of personal resources that are crucial to dealing with daily job demands (Bakker, 2022; Bakker and Demerouti, 2007). Personal resources are individual characteristics that assist employees in dealing with the work context and are related to their resiliency (Bakker *et al.*, 2023a; Mansour, 2023). These resources may include physical (vigor), cognitive (strategic thinking), social (relationship quality) and psychological (engagement) aspects that lead to positive outcomes or buffer against the detrimental effects of negative situations (Diener *et al.*, 2020). Hence, these built resources are a result of positive emotions' cumulative effect over time (Bakker *et al.*, 2023b).

The relationship between positive emotions and performance

Recently, Diener *et al.* (2020) proposed that what the B&B theory suggests is a mediational channel, through which positive emotions influence positive related outcomes, such as work engagement. Accordingly, the authors stated that B&B theory assumes an affect-to-cognition-to-outcome route (Diener *et al.*, 2020). That is, positive emotions expand cognitive repertoires, leading to positive work-related behaviors (contextual performance). For example, Staw and Barsade (1993) showed, in their experiment, that an induction of positive emotions led to more accurate cognitive decisions. Likewise, Kapadia and Melwani (2021), in their multi-study, demonstrated that positive emotions triggered creativity, even in multi-tasking situations. In an experimental study, Mailliez *et al.* (2020) demonstrated that positive emotions positively impacted decision-making performance via feedback processing. Ko *et al.* (2020) conducted a randomized crossover experiment and found that individuals who had a view from a window experienced more positive emotions than those who did not have a window to work, which positively impacted their working memory and concentration. In a similar vein, Kiuru *et al.* (2020) conducted simulations of achievement situations and revealed that positive emotions mediated the relationship between high task value and expectancy of success in task performance. Thus, relying on the B&B, we expect that:

H1a. Daily positive emotions will be positively related to daily performance.

The relationship between positive emotions and work engagement

Schaufeli and Salanova (2007) argued that positive emotions predict work engagement, both at the daily and individual levels. Leiter and Bakker (2010a, b, p. 1) defined work engagement as “a positive, fulfilling, affective-motivational state of work-related well-being,” including three components: (1) *vigor* (high energy and motivation to invest effort at work), (2) *dedication* (high involvement at work and experience of pride and enthusiasm toward work) and (3) *absorption* at work (flow at work) (Schaufeli and Bakker, 2004).

The B&B theory argues that experiencing positive emotions expands cognitive responses and builds personal resources, such as work engagement. This is also acknowledged in the COR theory, which identifies positive emotions as valuable resources for employees (Hobfoll *et al.*, 2018). These resources not only support the acquisition and development of other resources (e.g. work engagement) but also impede the loss of other ones (Hobfoll, 1989). Hence, one might conclude that positive emotions may increase employees’ energy levels, improve their dedication to work and promote a sense of absorption while performing tasks (Junça-Silva *et al.*, 2023).

A great deal of research has demonstrated that positive emotions positively impact work engagement. For example, Ouweneel *et al.* (2012), in their daily diary study, demonstrated that daily positive emotions influenced daily work engagement. Goswami *et al.* (2016) also demonstrated that positive emotions were an antecedent of trait work engagement. Burić and Macuka (2018) used cross-lagged analysis to show the reciprocal link between positive emotions and work engagement. In their study with teachers, they found that those who reported more positive emotions tended to be more engaged with their work. Moreover, those who showed higher levels of work engagement also evidenced higher levels of positive emotions six months later.

Another stream of research also found that the absence of positive emotions predicted disengagement (e.g., Afrahi *et al.*, 2022). Overall, positive emotions appear to predict work engagement, both at within- and between-person levels. Consistent with these studies and with the B&B and COR theories, we propose that:

H1b. Daily positive emotions will be positively related to daily work engagement.

The relationship between work engagement and performance

Performance theories differentiate between task and contextual performance (Motowildo *et al.*, 1997). Task performance is related to the core tasks of the individual in the organization and, therefore, related to the organizational goals (e.g. goal attainment, judgment and decision-making). On the other hand, contextual performance refers to all the activities and behaviors that contribute to the work psychological climate and include, e.g. helping colleagues engage in learning (Motowildo *et al.*, 1997). It is defined as “behaviors that support the organizational, social, and psychological environment in which the technical core must function” (Koopmans *et al.*, 2011, p. 862).

Work engagement is a motivational process that serves to achieve personal- and work-related goals. Moreover, engaged workers tend to be highly motivated to expend energy, even when they are facing hassles in their daily lives at work (e.g. Junça-Silva *et al.*, 2017, 2022). In this sense, it is not surprising that work engagement has been identified as an antecedent of performance (both task and contextual) (e.g. Schaufeli and Taris, 2014). For instance, Bakker and Bal (2010), in a weekly study, demonstrated that work engagement was positively associated with performance. Bizri *et al.* (2021), in a study within the banking field, also showed that work engagement positively predicted job performance. Rofcanin *et al.* (2017), in a financial credit company, used supervisor-subordinate data to demonstrate the positive and significant relationship between work engagement and performance. Likewise, Junça-Silva *et al.* (2017) demonstrated that work engagement improved performance after daily uplifts. Thus, relying on the B&B theory and the COR perspective, we expect that:

H2. Daily work engagement will be positively related to daily performance.

The mediating role of work engagement

As stated before, the B&B theory suggests that positive emotions serve to build personal resources that help workers deal effectively with their daily lives at work (Fredrickson, 2013). This idea of broadening personal resources suggests a mediational pathway that delivers positive outcomes. In other words, positive emotions create conditions for employees to become engaged with their work, which in turn enables positive behaviors and influences job performance.

Empirically, there is evidence for the mediating role of work engagement between emotional experiences and performance. For instance, in a meta-analysis, Kim *et al.* (2018) showed that work engagement was positively associated with performance and that it was a mediator in the link between antecedents (e.g. job and/or personal resources) and outcomes (i.e. performance). Tisu *et al.* (2020) demonstrated that personal characteristics were positively associated with work engagement, which in turn increased performance. Coo and Salanova (2018) conducted a controlled trial intervention on mindfulness and analyzed the relations between happiness, work engagement and performance. Overall, they showed that the intervention increased happiness, which led to higher work engagement and, in turn, job performance. Therefore, we defined the following hypothesis:

- H3. The relationship between daily positive emotions and daily performance will be mediated by daily work engagement.

The moderating role of curiosity

Weick (1993) argued that organizations need curious employees. This need is particularly important if one considers the constant volatility that characterizes the world. In such environments, organizations need to train people to creatively deal with such changes to survive (Junça-Silva and Silva, 2022). In such unpredictable and volatile times, curiosity, as an individual characteristic and a personal resource, may benefit highly engaged workers to focus on their tasks at hand and thus enhance their performance, in positive emotional situations.

Curiosity is the tendency to search for novel, complex and challenging interactions with the environment (Kashdan *et al.*, 2018). Work-related curiosity includes four dimensions (Kashdan *et al.*, 2020): (1) *joyous exploration* (feeling happy when searching for what is new); (2) *deprivation sensitivity* (until problems are solved); (3) *stress tolerance* (reduced anxiety facing the unknown) and (4) *openness to people's ideas* (social curiosity).

There are three reasons why we argue that curiosity is a personal resource that, when combined with engaged employees, will enhance their contextual behaviors. First, curiosity triggers exploration when unexpected problems and events emerge. When this happens, curiosity also minimizes the uncertainty of the unknown and creates a feeling of mastery (Litman, 2008). Concerning this, Mussel (2013) suggested that curiosity allows adaptability to organizational changes and improves openness and flexibility when there is a need to change. Thus, curiosity improves adaptability to unexpected events and enhances social and personal resources that may be beneficial for job performance (Kashdan *et al.*, 2018). Second, openness and stress tolerance to what is new appear to improve satisfaction and work engagement (Kashdan *et al.*, 2020). Stress tolerance allows employees to craft their jobs in more adjusted forms, improving their well-being (Kashdan *et al.*, 2020). Lastly, the joy felt when exploring what is new improves job performance and creativity (Hardy *et al.*, 2017). Likewise, openness to others' ideas enhances satisfaction with interpersonal interactions at work (Kashdan *et al.*, 2018). In sum, this empirical evidence allows us to argue that curiosity enables a set of personal resources that boosts performance at work.

Thus, we expect that curiosity will moderate the indirect effect of positive emotions in the contextual performance via work engagement. Based on the theoretical basis described, we hypothesized that:

H4. Curiosity will moderate the indirect effect of daily work engagement in the relationship between daily positive emotions and daily performance, and such that it will be stronger for higher levels of curiosity (Figure 1).

Method

Participants and procedure

In total, 586 Portuguese participants from diverse professional sectors and organizations took part in the study. Overall, 55% of the participants were female. The mean age was 37.27 years old (*SD* = 12.35), and the mean organizational tenure was 16.39 years (*SD* = 12.59). Participants worked on average about 38.14 h per week (*SD* = 10.93). Sample professional sectors included accountants (55%), banks (20.6%) and front-office employees (24.4%).

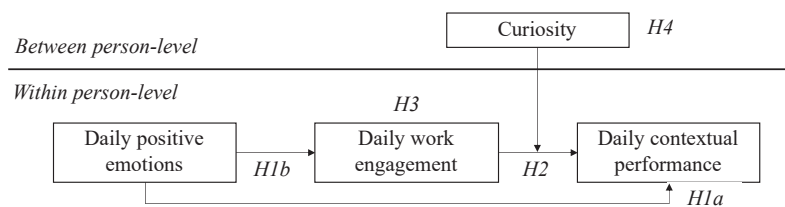
We emailed managers from different organizations in Portugal. Then, they sent an internal email to their workers. The participants who agreed to participate signed an informed consent form and received an email that clarified the daily data collection procedure and the voluntary and anonymous nature of the data. From the 650 emails sent, we obtained 586 valid responses (response rate: 90%).

We collected data through a general and five-daily questionnaire. The general survey was administered one week before the daily data collection (the following week). This aimed to assess demographic characteristics and curiosity. Then, in the following week, participants answered a daily survey at the end of each working day over five consecutive days. This included measures of daily positive emotions, daily work engagement and daily performance. Daily emails to remind the participants were sent at the end of the day (6 p.m.). Participants had to answer until 10 p.m. The overall number of observations was 2379 (an average of 4.05 observations per person). Data were collected between March 2022 and October 2022.

Measures

Daily positive emotions. We used the eight-item multi-affect indicator (Warr *et al.*, 2014) to assess the frequency of daily positive emotions (e.g. “enthusiastic”). Participants answered on a five-point scale (1 – *never*; 5 – *always*). Multi-level reliability tests estimated through the alpha and the omega index showed acceptable reliability ($\alpha_{\text{between}} = 0.85$, $\omega_{\text{between}} = 0.85$; $\alpha_{\text{within}} = 0.80$, $\omega_{\text{within}} = 0.78$).

Daily work engagement. We used the three items from the ultra-short measure for work engagement (Schaufeli *et al.*, 2017) (e.g. “Today, at my work I felt bursting with energy”). All items were answered on a five-point scale (1 = *never*, 5 = *always*). Multi-level reliability was good ($\alpha_{\text{between}} = 0.80$, $\omega_{\text{between}} = 0.82$; $\alpha_{\text{within}} = 0.85$, $\omega_{\text{within}} = 0.86$).



Source(s): Authors’ own creation

Figure 1.
The hypothesized moderated mediation model

Daily performance. We used four items from Griffin *et al.* (2007) (e.g. “Today, I adapted myself to changing technology”). Items were rated on a five-point scale ranging from 1 (*very little*) to 5 (*a great deal*). Multi-level reliability indices were good ($\alpha_{\text{between}} = 0.80$, $\omega_{\text{between}} = 0.79$; $\alpha_{\text{within}} = 0.85$, $\omega_{\text{within}} = 0.84$).

Curiosity. We used the 12-item multi-dimensional workplace curiosity scale (Kashdan *et al.*, 2020). It measured the four dimensions: joyous exploration (e.g. “I get excited thinking about experimenting with different ideas”), deprivation sensitivity (e.g. “I work relentlessly to find answers to complicated questions at work”), stress tolerance (e.g. “I do not shy away from the unknown or unfamiliar even if it seems scary”) and openness to people’s ideas (e.g. “I like to hear ideas from colleagues even if they are different from my current line of thinking”). Participants answered on a five-point scale (1 = *never*; 5 = *daily*) ($\alpha = 0.88$, $\omega = 0.87$).

Control variables. We used sex and the day of data collection because both variables may account for differences in daily emotions (Dello-Russo *et al.*, 2021) and work-related behaviors (Fisher, 2003).

Data analysis

We used multi-level analysis with nested data to test the model. First, the Intraclass correlation coefficient (ICC) results demonstrated a significant variation both at within- and between-person levels in daily positive emotions (ICC = 0.80), daily work engagement (ICC = 0.85) and daily performance (ICC = 0.85). Therefore, we proceeded with the multi-level analysis.

The hypotheses were examined with macro-multi-level mediation (MLMed) in Statistical Package for the Social Sciences (SPSS) (Rockwood, 2017). This macro shows similar results in the estimation of model parameters to what other software alternatives do (e.g. *Mplus*) and is useful for models that include Level-2 moderators (Rockwood, 2017). The model fit was determined by analyzing the reduction in model deviance from data (-2LL) at each step from model to model (Snijders and Bosker, 1999).

Results

Multi-level confirmatory factor analysis

First, as Kock suggested (2015), we also performed a full collinearity evaluation test to check for potential common method bias. The results demonstrated that all the variance inflation factor values ranged from 1.17 to 2.02; because the values were less than the cut-off point of 3.33, multi-collinearity concern was not a severe issue in this study (Kock and Lynn, 2012).

Second, to test for common method bias, we performed multi-level confirmatory factor analyses (Podsakoff *et al.*, 2024). These were evaluated based on 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). As Schreiber *et al.* (2006) argued, a model presents a good fit when the values of both CFI and TLI are higher than 0.85 and when the values of both RMSEA and SRMR are below 0.08. Following these criteria, the hypothesized measurement model (had an acceptable fit with the data) (at both within- and between-person levels: RMSEA = 0.08, CFI = 0.85, TLI = 0.82, SRMR_{within} = 0.06 and SRMR_{between} = 0.07). On the other hand, the single factor-model showed an unacceptable fit to the data (RMSEA = 0.11, CFI = 0.61, TLI = 0.58, SRMR_{within} = 0.09 and SRMR_{between} = 0.10).

These analyses demonstrated further support for the validity of our measurement constructs. In conclusion, these findings provide robust evidence for the reliability and validity of our measurement model, bolstering the foundation of our subsequent analyses, including the investigation of the moderated mediation model.

Descriptive statistics and correlations

Table 1 shows the descriptive statistics and correlations.

Hypotheses testing

As we mentioned before, to test our hypotheses, we considered the hierarchical structure of the data, in which daily data were nested within individuals. We centered our variables because, as suggested by [Bliese et al. \(2018\)](#), centering variables is essential to test cross-level interactions.

First, we tested Model 1 by entering time and sex (entered as a dummy variable) as correlates of daily positive emotions. Then, we ran Model 2, both with and without the covariates of daily positive emotions, and we found similar results. Thus, we excluded it from the following analysis. Then we tested the mediation model (Model 3) and then the moderated mediation model (Model 4).

The results showed that the time of data collection was only significantly related to daily performance (Estimate = -0.02 , $p < 0.05$), which means that daily performance tended to decrease at the end of the week. The time of data collection was not significantly related to daily work engagement (Estimate = 0.00 , $p > 0.05$).

Regarding the first hypothesis ([H1a](#)), the results showed that daily positive emotions were positively related to daily contextual performance (Estimate = 0.17 , $p < 0.01$), lending support to [H1a](#).

[Hypothesis 1b](#) expected daily positive emotions would be related to daily work engagement. The results showed that daily positive emotions were positively and significantly related to daily work engagement (Estimate = 0.54 , $p < 0.01$), lending support to [H1b](#).

[Hypothesis 2](#) stated that daily work engagement would be positively related to daily contextual performance. Thus, the hypothesis was also supported, as we found a positive association between daily work engagement and daily performance (Estimate = 0.26 , $p < 0.01$).

[Hypothesis 3](#) expected that daily positive emotions would positively influence daily contextual performance through daily work engagement. The results evidenced a significant indirect effect of daily work engagement, both at between- and within-person levels (Estimate_{between} = 0.36 , 95% confidence interval (CI) [0.28 , 0.43]; Estimate_{within} = 0.14 , 95% CI [0.11 , 0.17]). Thus, [Hypothesis 3](#) received support ([Table 2](#)).

At last, [Hypothesis 4](#) predicted that curiosity would moderate the indirect effect of daily positive emotions on daily performance through daily work engagement. The index of moderated mediation was 0.06 , with 95% CI (0.03 , 0.10) ([Table 3](#)). As we can see in [Figure 2](#), when daily work engagement increases, daily contextual performance is significantly higher for those who scored higher on curiosity. Besides, for those low on curiosity, even when daily work engagement increases, daily contextual performance does not appear to significantly increase.

A closer look at the simple slopes ([Dawson and Richter, 2006](#)) showed that the indirect effect was stronger at higher levels of the moderator (+1 SD; $B = 0.16$; $p < 0.05$) and became weaker, although significant, at lower levels of the moderator (-1 SD; $B = 0.12$, $p < 0.05$). Thus, [Hypothesis 4](#) received support.

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1. Positive emotions	3.53	0.83	–	0.68***	0.54***	0.33***
2. Work engagement	3.83	0.88	0.52***	–	0.62***	0.37***
3. Performance	3.94	0.71	0.39***	0.59***	–	0.40***
4. Curiosity	4.05	0.61	0.39***	0.55***	0.69***	–

Note(s): Correlations below the diagonal are between-person level. Correlations above the diagonal are within-person level. $N_{(\text{observations})} = 2379$; $n_{(\text{participants})} = 586$. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Source(s): Authors' own creation

Table 1.
Descriptive statistics

	Model 1 mediator (daily work engagement)	Model 1 dependent (daily performance)	Model 2 mediator (daily work engagement)	Model 2 Ddependent (daily performance)
<i>Within-level (L1) effects</i>				
Mean Intercept	1.03***	1.59***	1.07***	1.62***
Daily positive emotions	0.51***	0.17***	0.54***	0.17***
Daily work engagement Time		0.26***	0.00	0.26*** -0.02*
<i>Between person effects</i>				
Daily positive emotions	0.17***	0.17***	0.81***	0.19***
Daily work engagement Time Sex		0.46***		0.44*** -0.04 0.04
<i>Variance of random components</i>				
Random intercept	0.13***	0.13***	0.12***	0.13***
Residual variance	0.28***	0.17***	0.26***	0.16***
Direct effect, between-level	0.17***		0.19***	
Direct effect, within-level	0.17***		0.17***	
Indirect effect, between-level	0.36***		0.36***	
Indirect effect, within-level	0.14***		0.14***	
AIC	5766.69		5030.20	
BIC	5791.33		5054.38	
-2LL	5758.69		5022.20	
Sample size		L1 = 2379; L2 = 586		
Note(s): Maximum likelihood estimation with robust standard errors (MLR) was used in estimation. L1 = level 1, L2 = Level 2 analysis. Model 1 without covariates and Model 2 with covariates. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Sex: 1 – male; 2 – female				
Source(s): Authors' own creation				

Table 2.
Parameter estimates
for 1-1-1 multilevel
mediation model

Discussion

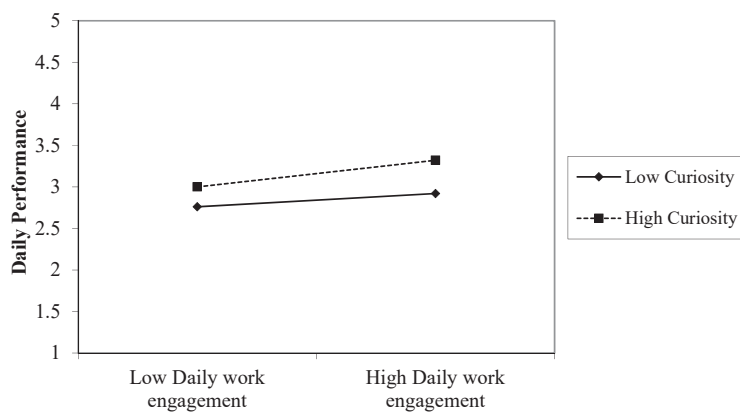
This diary study aimed to analyze whether an individual characteristic – curiosity – would interact with a personal resource – daily work engagement – to predict daily contextual performance. Based on the B&B theory and its recent refinement (Diener *et al.*, 2020), we expected that daily positive emotions would increase daily contextual performance via daily work engagement. We also predicted that curiosity would moderate the mediating path, such that it would maximize the positive indirect effect of daily positive emotions on daily contextual performance via daily work engagement.

First, the results reveal that the daily variables – daily positive emotions, daily work engagement and daily contextual performance – present within- and between-person variabilities. In addition, the results demonstrate that daily positive emotions are a positive predictor of daily performance. Thus, the experience of positive emotions at work might benefit not only the individual but also the organization once he or she performs better. This result is not surprising, as there are a number of studies demonstrating the positive path

	Model 3 Mediator (daily work engagement)	Model 3 Dependent (daily performance)	Model 4 Mediator (daily work engagement)	Model 4 Dependent (daily performance)
<i>Within-level (L1) Effects</i>				
Mean Intercept	1.03***	2.03***	1.07***	1.62***
Daily positive emotions	0.51***	0.17***	0.54***	0.17***
Daily work engagement		0.26***		0.26***
Curiosity* Daily work engagement		0.12***		0.12***
Time			0.00	-0.02*
<i>Between person Effects</i>				
Daily positive emotions	0.79***	0.17**	0.81***	0.19**
Daily work engagement		0.14		0.11
Curiosity		-0.04		-0.07
Curiosity* Daily work engagement		0.07		0.07
Time			-0.05	-0.03
Sex			0.04	0.03
<i>Variance of random components</i>				
Random intercept	0.13***	0.12***	0.12***	0.12***
Residual variance	0.28***	0.16***	0.26***	0.16***
Direct effect, between-level	0.17**		0.19***	
Direct effect, within-level	0.17***		0.17***	
Index of moderated mediation, between-level	0.05		0.06*	
Index of moderated mediation, within-level	0.06***		0.07***	
AIC	5423.36		4993.70	
BIC	5447.78		5017.88	
-2LL	5415.36		4985.70	
Sample size		L1 = 2379; L2 = 586		
Note(s): Maximum likelihood estimation with robust standard errors (MLR) was used in estimation. L1 = level 1, L2 = Level 2 analysis. Model 3 without covariates and Model 4 with covariates. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ Sex: 1 – male; 2 – female Source(s): Authors' own creation				

Table 3. Parameter estimates for the multilevel moderated mediation model

between positive emotions and diverse forms of performance (e.g. [Junça-Silva et al., 2017, 2022](#)). In a meta-analysis of the relationship between positive emotions and performance, [Kaplan and Kaplan \(2009\)](#) demonstrated significant effect sizes. This is also in line with the B&B theory, which posits that positive emotions broaden the worker's thoughts and actions and thus enhance the quantity and quality of performance ([Diener et al., 2020](#)). Likewise, daily positive emotions are a predictor of daily work engagement, and this influences daily performance. Thus, daily positive emotions not only increase performance but also enhance daily work engagement. This means that when workers experience positive emotions, such



Source(s): Authors' own creation

Figure 2.
Cross-level interaction
between curiosity and
daily work
engagement

as happiness, they experience an expansion of patterns of thoughts and behaviors that are responsible for the development of relevant resources, such as work engagement (Fredrickson, 2013). Hence, by experiencing positive emotions, employees may feel more vigorous in performing their tasks, becoming more dedicated and fully absorbed in their work. This reduces nonwork distractions (Junça-Silva *et al.*, 2023) and enhances performance levels (Junça-Silva *et al.*, 2024a, b). This has also been empirically supported. For instance, Junça-Silva *et al.* (2017) showed that daily uplifts, by triggering positive emotions, increased work engagement and performance. Similarly, Carmona-Halty *et al.* (2019) found that positive emotions increased academic performance via academic engagement. Oriol-Granado *et al.* (2017) evidenced a similar pattern of results. Thus, positive emotions promote the development of work engagement, which in turn leads to higher contextual performance levels.

Theoretical implications

A major theoretical contribution is the test of the relationship between daily positive emotions and daily performance via daily work engagement. Despite the existing cross-sectional studies demonstrating this mediating path, daily studies have been scarce (Bakker, 2022). Our results show that work engagement mediates the link between positive emotions and performance on a daily basis. The B&B theory supports this finding, by proposing that positive emotions broaden the scope of action, which allows them to build personal resources (work engagement). This mediational channel was also proposed by Diener *et al.* (2020) in their review of the B&B. Accordingly, the authors suggested an affect-to-cognition-to-outcome route. That is, positive emotions expand cognitive repertoires, leading to positive work-related behaviors. Our findings are consistent by demonstrating that, by experiencing positive emotions, individuals tend to have more energy to accomplish their tasks, feel more involved in their goals and, as a result, focus more on their work, increasing their performance. Thus, positive emotions have affective and behavioral effects on employees.

A second theoretical contribution was testing the cross-level moderation of curiosity. We argued that the positive mediational channel (Diener *et al.*, 2020) would be dependent on individuals' curiosity. This illustrates that the indirect effect of positive emotions on performance via work engagement would depend on the levels of curiosity in such a way that the indirect effect would become stronger for workers with higher levels of curiosity. The results support this expectation and are in line with the behavioral congruence model

(Côte and Moskowitz, 1998). This model posits that individuals' reactions to emotional experiences are congruent with their behavioral tendencies, suggesting that positive emotions should enhance behaviors that are aligned with an individual's inherent traits, such as curiosity. Hence, individuals feel satisfied when performing activities consistent with their behavioral tendencies (curiosity) (Côte and Moskowitz, 1998). Accordingly, positive emotions will enhance work engagement and contextual performance; yet people high in curiosity will maximize this positive link; as by being allowed to explore at work (congruence between behavior and personality), they will become more engaged, resulting in better performances. Curiosity, characterized by a desire to explore and acquire new knowledge, could amplify the effect of positive emotions on work engagement because these emotions provide the energy and motivation necessary to pursue novel and challenging tasks (Kashdan *et al.*, 2020). Therefore, for individuals with higher levels of curiosity, positive emotions are not just a source of immediate pleasure or satisfaction (Junça-Silva and Rueff, 2024); they are also a catalyst for deeper engagement in work through the exploration of new ideas, learning opportunities and innovative solutions to problems.

The interactionist perspective posits that stable patterns of behavior, such as being curious, depend on certain conditions (Mussel *et al.*, 2011). Some authors have claimed that some individual characteristics (e.g. curiosity) must be analyzed within their context (Mussel *et al.*, 2011). This is also acknowledged as the frame-of-reference effect (Heggstad and Gordon, 2008). Thus, our result deepens knowledge by showing that curiosity interacts with daily work engagement, impacting performance. As a result, more curious individuals appear to benefit from the positive mediational path between positive emotions, work engagement and performance.

Empirical support for this finding has been evidenced in studies showing that curiosity enhances the motivation to seek out and engage in new experiences, turning the work environment into a platform for learning and growth (Lievens *et al.*, 2022). When individuals with high levels of curiosity experience positive emotions, they are more likely to channel these emotions into a constructive exploration of their tasks (Saeed-AlShamsi *et al.*, 2023), thereby experiencing higher levels of work engagement (Ghosh, 2023). This engaged state is not merely about being busy; it is characterized by vigor, dedication and absorption in work, which are qualities that are directly linked to higher performance levels (Bakker *et al.*, 2023). Therefore, the differential impact of curiosity highlights an important nuance in the relationship between daily positive emotions and daily performance through daily work engagement. It suggests that the beneficial effects of positive emotions on work outcomes are not uniform across all individuals. Instead, these effects are significantly enhanced in those with high curiosity, underscoring the importance of personal traits in determining how emotional experiences are translated into performance.

Overall, we demonstrate that positive emotions, increase work engagement, which, in turn, enhances daily performance. Moreover, curiosity, the tendency to explore and search for novelty, when interacting with work engagement, improves performance. Thus, "curiosity does not kill the cat"; instead, it makes it productive.

Practical contributions

This research allows us to conclude that daily positive emotions and daily work engagement are important variables for the prediction of daily performance. This study also emphasizes that this mediated relationship is stronger when curiosity is high. Thus, the relevance of curiosity has crucial implications for applied purposes, such as personnel selection. For instance, human resource managers may consider it useful to include in their selection processes measures of curiosity to diagnose the likelihood of higher performances and engagement levels, particularly for highly skilled applicants.

Furthermore, the findings reveal that when individuals score low on their curiosity, even with higher levels of work engagement, their performance tends to be stable. Thus, when there are positive emotional experiences, work engagement increases, which in turn enhances performance, in particular, for curious individuals. Hence, organizations also benefit from this symbiosis and have an increased probability of achieving higher productivity (e.g. [Luthans, 2002](#)). Therefore, it would be beneficial to offer training programs aimed at enhancing work engagement and curiosity, such as seminars focused on fostering curiosity and team-building practices. Stimulating engagement and curiosity may enhance adaptive behaviors to changing work situations, which, in turn, improves performance. It would also be relevant to create “curiosity days” in which individuals would be allowed to expand their limits and creativity by being free to explore and create solutions for simulation or real problems.

Lastly, employees themselves also benefit from being stimulated at work to be curious. For instance, managers could foster an environment that cultivates positive emotions and curiosity, recognizing that such an environment is likely to promote higher levels of engagement and performance. This could involve creating opportunities for employees to explore their interests, encouraging risk-taking in a supportive atmosphere and acknowledging the value of novel ideas and solutions. Additionally, understanding the role of curiosity in modulating the effects of positive emotions on engagement could inform tailored interventions aimed at enhancing employee satisfaction and productivity, such as personalized training programs or career development plans that align with individual traits and interests. When curiosity is high, they not only become happier while exploring solutions or alternative responses to problems ([Kashdan et al., 2020](#)) but also react less stressfully when uncertainty is higher or when demands arise ([Junça-Silva and Silva, 2022](#)). Thus, organizations and employees may have benefits when there are organizational policies that support being curious at work.

Limitations and future research

The first limitation is related to the use of self-reported measures, which might account for common method variance ([Podsakoff et al., 2024](#)). Some measures were taken [e.g. confirmatory factor analysis (CFA)] and show that common method variance is not a severe issue in this study. Notwithstanding, future studies could use other sources of information (e.g. colleagues and supervisors) regarding the criterion variable (daily performance). Second, we only measured trait-based curiosity; however, daily curiosity would also be relevant for future studies ([Kaplan, 2019](#)). Moreover, multi-source performance measures should be studied within the model (e.g. from supervisors and customers). Third, it would be useful to explore the contextual conditions by which daily positive emotions influence daily work engagement and daily performance, for instance, through daily uplifts. Lastly, future studies should investigate this model with different types of participants, such as those with fewer qualifications or lower-skilled staff. Furthermore, because the findings may not be fully generalizable to other occupations, future research should examine whether curiosity provides benefits in contexts involving standardized work procedures and routine jobs.

Conclusion

Overall, this study evidences the positive mediational path between positive emotions, work engagement and performance, both at the daily and individual levels. In addition, it sheds light on the power that curiosity plays on this path. In particular, this daily study evidences the cross-level interaction between curiosity and daily work engagement in the mediating path, in which individuals who experience more positive emotions become more engaged with their work, thus leading to better performance. Plus, this is even more enhanced for those

who are more curious. In conclusion, the indirect effect of positive emotions on performance through work engagement and their modulation by levels of curiosity offer a nuanced view of how emotional experiences at work can lead to superior performance outcomes. It underscores the significance of individual differences in shaping workplace dynamics and highlights the potential for leveraging these differences to foster more engaging and productive work environments.

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