


## Article

# Applying the Affective Events Theory to Explore the Effect of Daily Micro-Interruptions on Mental Health: The Mediating Role of Affect and the Moderating Role of Pets at Work

Ana Junça Silva 

ISCTE-Instituto Universitário de Lisboa (Portugal)

### Abstract

This study relied on the affective events theory and the social exchange theory to develop a framework that explains how situational factors (daily micro-interruptions) enhance affective reactions (negative affect) and, in turn, impair health conditions (mental health) at work. We further delineate theoretical arguments to propose the pet-human's health effect by demonstrating that pets are boundary conditions that attenuate this relation, and as such are protective conditions for employees' mental health. We conducted a 5-day diary study with two groups of participants, one with participants who owned pets ( $N = 82 \times 5 = 410$ ), and the other who did not own pets ( $N = 87 \times 5 = 435$ ). The multilevel results showed an indirect effect of daily micro-interruptions on individuals' mental health through negative affect, with a daily backdrop of poorer mental health for those who did not own a pet (compared to those who owned a pet). These results evidence the benefits of owning a pet for individuals' mental health, even at work, and as such provide recommendations for teleworking practices. Moreover, this study resorts to an innovative and robust data collection method to demonstrate the pet-human' health effect. This study expands knowledge on the role of pets in working daily routines and shows that pets may be a personal resource for individuals while working.

**Keywords:** daily micro-interruptions; mental health; multilevel modeling; negative affect; pet ownership

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With the incremental use of flexible work arrangements, such as telework, since the COVID-19 crisis (Junça-Silva & Silva, 2023), the use of digital technologies to bring people together has also increased. While working, individuals are often interrupted (Sonnentag et al., 2018), either to work with colleagues or to communicate with each other (Richardson & Taylor, 2012). Some studies have shown that in telework, interruptions are more frequent than in face-to-face work (Chong & Siino, 2006). Daily interruptions (e.g., being asked for advice while working) are affective micro-events that involve changes to individuals' time use (Feldman & Greenway, 2021), divert their focus on the tasks at hand, and therefore condition their performance and experienced affect (Puranik et al., 2020). The affective events theory (AET; Weiss & Cropanzano, 1996) explored these kinds of events and argues that affective events (i.e., micro-interruptions) trigger affective reactions that, in turn, influence attitudes, states, and behaviors.

The AET also proposes that certain conditions (e.g., individual differences) might act as moderators of the relationship between affective events and affective reactions. For instance, having pets

may provide emotional support (Kelemen et al., 2020) needed for workers to deal with negative events, such as micro-interruptions (Junça-Silva, 2023a). Thus, relying on the AET, teleworking with pets may be a boundary condition responsible for elevating workers' mental health, even after experiencing a day full of micro-interruptions. Previous research suggests that pets may promote resilience after experiencing adversity or negative events (Wagner & Pina e Cunha, 2021). While pets can provide workers with many advantages, such as increased well-being (e.g., Junça-Silva, 2022a), their role has been disregarded in organizational life (Kelemen et al., 2020).

This study aimed to answer the call for studies of Kelemen et al. (2020) to deepen the understating regarding when pets intersect with organizational life, and thereby explore pets' benefits for workers' daily health. Therefore, based on the AET we argued that daily micro-interruptions will trigger negative affect, which in turn will decrease workers' mental health. Moreover, relying on the social exchange theory, we expected that having a pet would buffer this indirect effect, such that, this effect would be weaker for those who owned a pet (compared to those who did not).

This study has some contributions to both theory and practice. First, it explored: (a) The process linking micro-interruptions to downstream criteria in remote workers and (b) how pet ownership may influence work-related processes in a remote work context, in particular, to demonstrate the pet-human health effect, by showing that pets are conditions that buffer the detrimental effects of negative work-related micro-events on workers' mental health. Second,

Correspondence concerning this article should be addressed to Ana Junça Silva. ISCTE-Instituto Universitário de Lisboa. Unidade de Investigação em Desenvolvimento Empresarial (UNIDE). Avenida das Forças Armadas. 1649-026 Lisboa (Portugal). Email: [analjsilva@gmail.com](mailto:analjsilva@gmail.com)

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demonstrating that micro-interruptions might be an affective event expands the AET into the remote work conditions and adds these kinds of events into the theoretical framework. Third, practically speaking, this study may provide evidence to help managers and superiors make informed decisions regarding telework permission, even in hybrid formats. For instance, telework may be a suitable strategy for those who own pets, or for those who have pets with healthcare needs.

## Theoretical Framework

### *Daily Micro-Interruptions and Mental Health: An Affective Events Perspective*

The pandemic crisis lived so far has pushed many organizations to implement flexible work arrangements, such as telework, to reduce the COVID-19 virus widespread (Junça-Silva & Silva, 2023). While working from home, individuals have more daily interruptions (Kazekami, 2020) than when working at the office. Indeed, individuals are interrupted more often than ever. Scholars have justified this increment by the increased workload, more working hours, and the constant virtual availability requested by supervisors (Wöhrmann & Ebner, 2021). Moreover, the use of digital technologies inherent to telework, and the collaborative activities that increase the need to communicate with team coworkers and supervisors (Richardson & Taylor, 2012), create conditions for interruptions while individuals are focused on their tasks.

Interruptions have been conceived as affective micro-events that shape workers' daily lives, because turn their attention from the current task at hand and, as such influence their emotional daily life and well-being (Feldman & Greenway, 2021). Micro-interruptions are frequent during a working day and play a significant role in workers' experiences of work (Sonnetag et al., 2018). The affective events theory (AET; Weiss & Cropanzano, 1996) assumes that affective events are relevant for workers and organizations once these occurrences impact behaviors, attitudes, and emotions. Accordingly, the theory proposes that daily micro-events, such as interruptions, trigger affective reactions and consequently influence workers' attitudes, states, and behaviors (Junça-Silva, 2023b; Junça-Silva et al., 2021).

The most frequent micro-interruptions are telephone calls, questions from colleagues, chats, or virtual meetings that interrupt and turn away the focus on the tasks at hand (Feldman & Greenway, 2021; Krediet et al., 1994). Hence, most micro-interruptions are created from interactions with others (Addas & Pinsonneault, 2018). This study is mainly focused on micro-interruptions coming from coworkers' interactions and meetings. Interruptions from work-related meetings were also studied because when the study was conducted, the pandemic crisis that was being experienced, and the inherent changes that occurred at work at the time, meetings were a very frequent strategy to inform and clarify new procedures.

Micro-interruptions interfere with the time of workers (Kim et al., 2019), because create conditions for individuals to delay their work and as such shape their daily emotional lives (Puranik et al., 2019). Most empirical work on micro-interruptions at work has explored the detrimental effects on performance (e.g., Puranik et al., 2019). One consistent finding among these studies is the overwhelmingly negative emotional impact of daily micro-interruptions (Puranik et al., 2019) and its negative effect on employees' mental health - a state of well-being in which employees can cope with the normal stresses of life (such as daily hassles), can work productively and feel most of time positive emotions (World

Health Organization, 2022); for instance, micro-interruptions have been positively linked to frustration (Mark et al., 2008), anxiety (Fletcher & Bedwell, 2016), stress (Fletcher et al., 2018) and annoyance (Gluck et al., 2007), and negatively related to satisfaction (Hunter et al., 2019). Moreover, a day full of micro-interruptions shapes individuals end of the day affect (Sonnetag et al., 2018), and when these occur for much time, in the long run, leads to more lasting feelings of "time famine" (the sensation of having much to do in a short time; Perlow, 1999), workload, fatigue, and emotional exhaustion (Lin et al., 2013).

Despite this evidence, studies exploring the effects of micro-interruptions on affect and mental health are scarce (Puranik et al., 2019). However, it is important to deepen the understanding of the affective impact of micro-interruptions because affective reactions to such micro-events will affect not only individuals' emotional life but also their work-related behaviors (Puranik et al., 2019). We used the AET to justify the process through which daily micro-interruptions affect workers' daily mental health. Hence, we defined the following:

**H<sub>1</sub>.** Daily micro-interruptions will negatively predict mental health, via negative affect, at the daily level.

### *The Buffering Role of Pets*

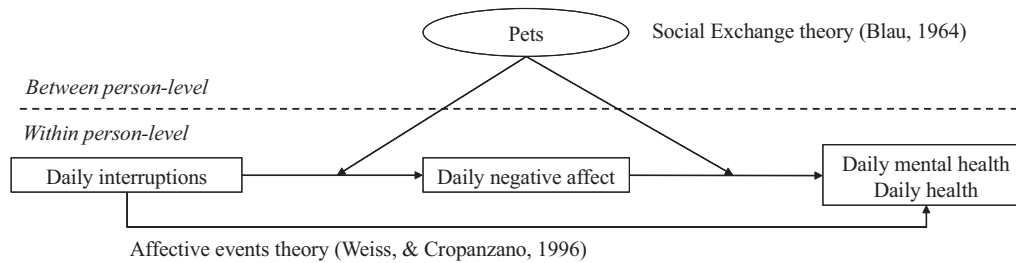
The relationship between humans and their pets is an ancient interspecies relation (Dotson & Hyatt, 2008). More recently, animals are becoming increasingly important for individuals, families, and organizations (e.g., through pet-friendly practices). This may be justified because pets provide "one highly reliable association in a person's life... more consistent and reliable than human-human" relationships do (Brickel, 1986, p. 311). Moreover, pets hold a relationship of mutualism with their humans, giving and retributing love, affection, gratitude, and companionship (Bradshaw, 2017), and thereby are a source of undeniable emotional and physical support for their owners (e.g., McConnell et al., 2011). They are also empathetic, sensitive, and kind, being able to genuinely connect with humans and understating their most hidden emotions and feelings (Nebbe, 2000; Norling & Keeling, 2010).

Thus, it is not surprising that pets are beneficial for several personal outcomes, such as mental health. Indeed, some studies have demonstrated that holding a pet, and a close connection to him/her, reduced mental health problems, such as stress, depression and anxiety (e.g., Souter & Miller, 2007), and improved feelings of connection, support, meaning in life (Antonacopoulos & Pychyl, 2008; McConnell et al., 2011) and psychological well-being (Graham et al., 2019).

Despite this, only recently scholars have acknowledged pets' importance for organizational life (e.g., Hall et al., 2017). Indeed, as Kelemen and colleagues (2020) argued, pets intersect organizational daily life in many ways; however, there is much to do, to understand how and when this happens.

With the increase in teleworking, individuals who own pets may benefit from their presence while working (Junça-Silva, 2022b). In a recent study, Junça-Silva (2022c) demonstrated that pet-friendly practices improved organizational identification and led to enhanced psychological and subjective well-being.

The beneficial effects of working near pets may be supported by the literature (e.g., Junça-Silva, 2023b). Recently, some studies have shown that workers who own pets and work from home have increased performance rates (Wagner & Pina e Cunha, 2021), are more engaged with their work (Sousa et al., 2022), and feel happier



**Figure 1.** The Proposed Framework with the Theoretical Perspectives

(Junça-Silva, 2023c). Thus, workers who own pets if they are allowed to work from home, even hybrid, may feel a greater sense of obligation and commitment to their employer, which may be translated into higher well-being, gratitude, and happiness (Junça-Silva et al., 2022). Considering the increased number of individuals with pets, and that these are considered, by many owners as family members (Junça-Silva, 2022c), teleworking may be a well-suited strategy to improve perceived shared values between employee-organization, and feelings of perceived organizational support, which may be translated into higher well-being.

Given the empirical evidence, and based on the social exchange theory, we argue that pets are conditions for human mental health, and therefore we propose the pet-human's health effect. First, attachment theory (Bowlby, 1969) suggests that the closer the emotional attachment bond between pets and humans, the higher the psychological feelings of safety and security. This was empirically demonstrated in this COVID-19 crisis. For instance, Grajfoner et al. (2021) showed that pet owners had higher levels of mental well-being, positive affect, and better-coping strategies during the COVID-19 lockdown.

Second, pets are a source of social support, and thereby are resourceful for individuals. This may also be explained by the conservation of resources theory (Hobfoll, 2001). Accordingly, individuals strive to protect and acquire personal resources (e.g., resilience; Hobfoll et al., 2018). Once pets are a source of emotional support, and companionship and buffer the impact of daily hassles (Wagner & Pina e Cunha, 2021; Junça-Silva, 2022c); thus, pets may be considered a personal resource for individuals, by protecting their other resources and alleviating stressful work-situations, such as daily micro-interruptions are. Therefore, this theory may support the added value of teleworking nearby pets.

Third, research has demonstrated that when interacting with pets, the levels of oxytocin -a neuropeptide responsible for bonding, socialization, happiness, and stress relief (e.g., Miller et al., 2009)-tend to increase, decreasing, therefore, feelings of stress or anxiety (e.g., Powell et al., 2019). Moreover, oxytocin has been shown to positively influence various health-related indicators, such as cardiovascular activity, stress-related parameters (e.g., cortisol, heart rate, and blood pressure), or mental health indicators, such as mood, fear, anxiety, and depression (Beetz et al., 2012). Oxytocin was also conceived as a social disinhibitory once it improves social attention, behavior, and the quality of interpersonal interactions (Miller et al., 2009). Fourth, research has demonstrated that pets, with their nurturing characteristics, create conditions for their humans to feel supported, happier, and with a sense of purpose in their life (Pinha e Cunha et al., 2019; Hall et al., 2017). Thus, based on this we argue that pets can facilitate conditions for workers better manage their daily life, and as such buffer the detrimental

effects of daily micro-interruptions on mental health, via negative affect. As such, we defined the following hypothesis.

**H<sub>2</sub>.** The indirect relationship between daily micro-interruptions and mental health via negative affect will be moderated by pets, such that the indirect effect becomes weaker for workers who owned pets (versus those who did not) (See Figure 1).

## Method

### Procedure and Participants

A 5-day diary study was conducted between January and March of 2022. Prior to the development of the study, the researchers' university committee for scientific research approved its conduction. Being teleworking at the time was the inclusion criteria to participate in the study. Participants were recruited from the researcher's personal networks. They were contacted by email and explained the main aims of the study, the data collection procedure, and the confidential and anonymous nature of the data. Those who agreed with the participation received another email with the informed consent and containing the hyperlink for the general survey; this included measures of socio-characterization, trait affectivity, and whether they had any pets. One week later, daily reminders with the daily hyperlinks were sent (from Monday to Friday). From the 200 emails sent, we obtained 169 valid responses (response rate = 84.5%).

Overall, participated in this study 169 participants ( $N = 169 \times 5 = 845$  daily observations). This sample size was considered 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 (i.e., having pets) must exceed, at least, 30 respondents in a multilevel framework (diary nested in persons) to result in an accurate estimation of standard errors. Thus, the sample of 169 participants had adequate power and accuracy, as it far exceeded the minimum sample requirements (Maas & Hox, 2005).

The sample was then divided into two groups (participants with pets ( $N = 82$ ; 49%) versus participants without pets:  $N = 87$ ; 51%) depending on the answer to the question "Do you have pets?" Most participants were female (61%), the mean age was 32.13 years ( $SD = 12$ ), and the mean tenure was 9.77 years ( $SD = 11$ ). Participants reported working, on average, 33.79 hours per week ( $SD = 15.36$ ). Most participants held high school graduation (65.2%) and the remaining 34.8% held a bachelor's degree. About 49% held a pet, and the mean number of pets was 2.1 ( $SD = 0.34$ ). Moreover, the

pets identified were dogs (74%), cats (48%), and fish (2%). All participants were teleworking during the period of data collection.

### Measures

**General survey.** A general survey was used to collect socio-demographic data (i.e., sex, age, tenure, educational level), trait affectivity, and the between-person variable – having pets. This survey was collected once. To measure if participants had pets, participants were if they had a pet or not. Responses were dichotomic (1-*no*, 2-*yes*). Positive and negative affectivity were measured with the Multi-Affect Indicator (Warr et al., 2014). Participants were asked to rate the items (e.g., enthusiasm or sad) on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*) ( $\alpha = .88$ ;  $\omega = .90$ ).

**Daily survey.** We followed the recommended procedure for daily diary methods (e.g., Ohly et al., 2010): To reinforce the daily nature of the survey, all items included the word “today” and used the past tense in each item. To improve reliability and lower the participants’ dropout rate, we used short scales. Finally, we also tested the level-specific composite reliability (i.e., within-person  $\omega$ ) as suggested by Geldhof and colleagues (2014). Daily surveys included daily measures of micro-interruptions, negative affect, and mental health.

**Daily micro-interruptions.** We used four items from the interruptions measure (Fonner & Rolloff, 2010; e.g., “Today, to what extent were you interrupted by work colleagues who talked with you while working?”). The items were answered on a 5-point Likert scale (1-*not at all*; 5-*a great deal*). Multilevel indices were good ( $\alpha_{\text{between}} = .78$ ,  $\omega_{\text{between}} = .79$ ;  $\alpha_{\text{within}} = .77$ ,  $\omega_{\text{within}} = .78$ ).

**Daily negative affect.** We used the 8-item Multi-Affect Indicator (Warr et al., 2014), to assess the frequency of daily negative emotions (e.g., “sad”). Participants answered on a 5-point scale (1-*never*; 5-*always*). Multilevel reliability tests estimated through the Alpha and the Omega index showed acceptable reliability ( $\alpha_{\text{between}} = .90$ ,  $\omega_{\text{between}} = .90$ ;  $\alpha_{\text{within}} = .86$ ,  $\omega_{\text{within}} = .86$ ).

**Daily mental health.** We used three items to assess it (Ware et al., 2007; e.g., “Today, how much of the time did you feel calm and peaceful?”). Items were answered on a 5-point Likert scale (1-*none of the time*, 5-*all of the time*). Multilevel indices were good ( $\alpha_{\text{between}} = .70$ ,  $\omega_{\text{between}} = .72$ ;  $\alpha_{\text{within}} = .54$ ,  $\omega_{\text{within}} = .64$ ).

**Control variables.** At the between-person level, we controlled for gender, age and trait positive and negative affectivity. We controlled for trait affectivity because some studies have demonstrated that it influences the relation between predictors and criterion affective variables, such as state affect (Podsakoff et al., 2003).

### Data Analyses

We used multi-level analysis with nested data to test the model. First, the ICC results demonstrated a significant variation both at within and between-person levels in daily micro-interruptions (ICC = .46), daily negative affect (ICC = .60), and daily mental health (ICC = .54). Therefore, we proceeded with the multilevel analysis.

The hypotheses were examined with the macro-macro-multilevel mediation (Mlmed) in SPSS (Rockwood & Hayes, 2017) that allows testing moderated mediation models. Mlmed person-mean centers variables by subtracting the participants’ overall mean from their mean reported for each day to estimate within-person effects. Plus, Mlmed calculates between-person effects in order to identify the extent to which an individual mean

across the five days deviates from the grand mean (i.e., mean across all participants in the study). This macro evidence similar results, in the estimation of model parameters, to what other software alternatives do (e.g., *Mplus*). The model fit was determined by analyzing the reduction in model deviance from data ( $-2LL$ ) at each step, from model to model (Snijder & Bosker, 1999).

## Results

### Multilevel Confirmatory Factor Analysis

To test for common method bias, we performed multilevel confirmatory factor analyses in R. The model fit for each of these CFAs was thereby assessed by considering the root mean square error of approximation (RMSEA < .08), the comparative fit index (CFI > .90), the Tucker–Lewis index (TLI > .90), and the standardized root mean square residual (SRMR < .08) (Schreiber et al., 2006). The results showed that the three-factor model (daily micro-interruptions, daily negative affect, and daily mental health) fitted the data well (at both within-and-between-person levels: RMSEA = .07, CFI = .90 TLI = .89, SRMR<sub>within</sub> = .05, SRMR<sub>between</sub> = .06). On the other hand, the single factor-model showed an unacceptable fit to the data (RMSEA = .13, CFI = .53 TLI = .54, SRMR<sub>within</sub> = .10, SRMR<sub>between</sub> = .12). So, based on Schreiber et al. (2006), the hypothesized model had an acceptable fit.

### Descriptive Statistics and Correlations

Table 1 shows the descriptive statistics and correlations.

### Means Comparison between Groups

Before testing our hypotheses, we analyzed whether there were differences among the variables under study between the two groups of participants (pet-owners and non-pet owners). Results showed statistically significant differences for daily negative affect,  $F_{(81)} = 10.041$ ,  $p < .01$ , and for daily mental health,  $F_{(81)} = 24.778$ ,  $p < .001$ , suggesting that pet-owners had better mental health ( $M = 3.55$ ,  $SD = .99$ ) and experienced less negative daily affect ( $M = 2.29$ ,  $SD = .91$ ) than non-pet owners ( $M = 3.21$ ,  $SD = .83$ ;  $M = 2.33$ ,  $SD = 1.01$ ), respectively. Moreover, results also evidenced statistically significant differences for daily micro-interruptions,  $F_{(81)} = 5.674$ ,  $p < .05$ , showing that pet owners reported fewer micro-interruptions ( $M = 2.44$ ,  $SD = .97$ ) than non-pet owners ( $M = 2.90$ ,  $SD = .93$ ) (see Table 2).

### Hypotheses Testing

Hypothesis 1 suggested a mediation effect at the within-person level wherein daily micro-interruptions would be indirectly associated

**Table 1.** Descriptive Statistics and Correlations

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1. Micro-interruptions	2.76	.94	–	.45**	–.31**	–.23**
2. Negative affect	2.38	.94	–.25**	–	–.36**	–.02
3. Mental health	3.34	.86	–.50**	–.26**	–	.18**
4. Pets	1.50	.50	.06	–.10*	.19**	–

Note. Correlations below the diagonal are between-person level. Correlations above the diagonal are within-person level.  $N_{(\text{observations})} = 845$ ;  $N_{(\text{participants})} = 169$ .

\*\*  $p < .01$ . \*  $p < .05$ .

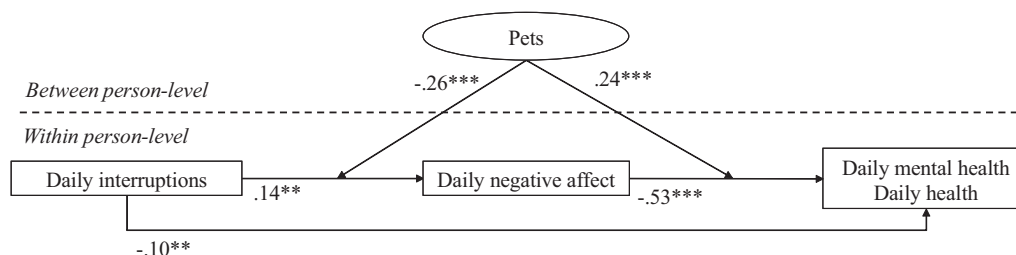
**Table 2.** Means comparisons Between the Two Groups of Participants

Variables	Pet-owners	Non-pet owners	F	95% CI of the difference	
	M (SD)	M (SD)		LL	UL
Daily micro-interruptions	2.44 (.97)	2.90 (.93)	5.674*	-.58	-.32
Daily negative affect	2.29 (.91)	2.33 (1.01)	10.041**	-.09	.16
Daily mental health	3.55 (.99)	3.21 (.83)	24.778**	.21	.46

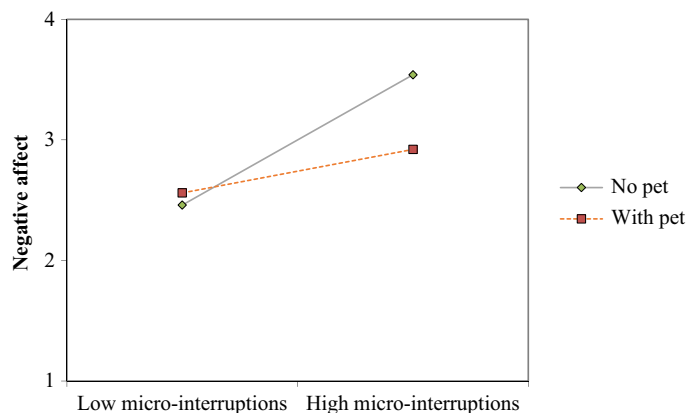
Note. Groups: Pet-owners (N = 82); non-pet owners (N = 87).  
\* p < .05. \*\* p < .01, \*\*\* p < .001.

with daily mental health via daily negative affect. The fit of the model was:  $-22LL = 3,202.12$ ,  $AIC = 3,210.12$ ;  $BIC = 3,231.74$ . The direct effect of daily micro-interruptions on daily mental health was significant at the within-person level,  $\beta = -.11$ ,  $p < .01$ , 95% CI  $[-.17, -.04]$ , and at the between-person level,  $\beta = -.34$ ,  $p < .001$ , 95% CI  $[-.47, -.21]$ . Daily micro-interruptions also evidenced a direct effect on negative affect, both at the within,  $\beta = .14$ ,  $p < .001$ , 95% CI  $[.07, .21]$ , and at the between-person level,  $\beta = .30$ ,  $p < .001$ , 95% CI  $[.21, .39]$ . Moreover, the indirect effect of daily negative affect was significant at both within,  $\beta = -.03$ ,  $p < .01$ , 95%CI  $[-.04, -.01]$ , and between-person levels,  $\beta = -.07$ ,  $p < .05$ , 95% CI  $[-.14, -.01]$ , lending support for the first hypothesis. Thus, daily micro-interruptions had a negative indirect effect on daily mental health, through daily negative affect.

Hypothesis 2 proposed a full moderated mediation model at the within-person level. Having a pet would moderate the indirect effect of daily micro-interruptions on daily mental health via daily negative affect. First, we analyzed the first stage of the moderation effect, that is the moderation of having a pet on the first stage of the mediating path (micro-interruptions-negative affect). The fit of the model was:  $-22LL = 3,198.98$ ,  $AIC = 3,206.98$ ;  $BIC = 3,228.659$ , suggesting an increment compared to the previous model. Moreover, this hypothesis was also supported once the index of the moderated mediation was significant at the within-person level,  $p = .05$ , 95% CI  $[.01, .09]$ . See Figure 2 for the full model results. Moreover, the interaction effect explained significant variance in the path between daily micro-interruptions and daily negative affect at the within,  $\beta = -.26$ ,  $p < .001$ , 95%CI  $[-.41, -.10]$ , but not at the between-person level,  $\beta = .07$ ,  $p = .42$ , 95%CI  $[-.10, .24]$  (see Figure 3 for the interaction pattern). Thus, having a pet buffered the positive relationship between daily micro-interruptions and daily negative affect.

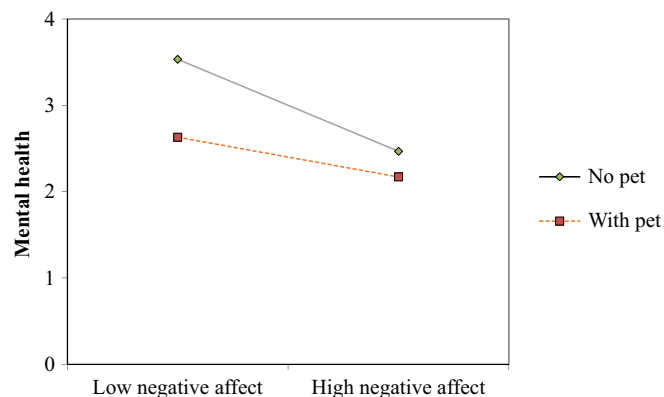


**Figure 2.** Random Slopes Model with within-person Level Effects for Daily Negative Affect mediating the Indirect Effect of Daily Micro-Interruptions on Daily Mental Health as a Function of Having (or Not) Pets.  
Note. \*\* p < .01. \*\*\* p < .001.



**Figure 3.** Pets as Moderators of the Relationship between Daily Micro-Interruptions and Daily Negative Affect

Second, we analyzed the second part of the moderation effect, which is the moderation of having a pet on the second stage of the mediating path (negative affect-mental health). The fit of the model was:  $-22LL = 3,192.89$ ,  $AIC = 3,200.89$ ;  $BIC = 3,222.50$ . The index of the moderated mediation was significant at the within-person level,  $p = .03$ , 95% CI  $[.01, .06]$ . Moreover, the interaction effect explained significant variance in the path between daily micro-interruptions and daily negative affect at the within,  $\beta = .24$ ,  $p < .001$ , 95% CI  $[.11, .40]$ , but not at the between-person level,  $\beta = .20$ ,  $p = .10$ , 95% CI  $[-.04, .43]$  (Figure 4 shows the interaction pattern). Thus, having a pet attenuated the negative relationship between daily negative affect and daily mental health, lending support to Hypothesis 2.



**Figure 4.** Pets as Moderators of the Relationship between Daily Negative Affect and Daily Mental Health

## Discussion

This study is based on the AET with a social exchange perspective and develops a framework proposing situational conditions as factors that impact affective and health indicators. We also delineate theoretical arguments to test whether holding a pet is a boundary condition that attenuates the mediated relationship. As such, this study demonstrates how situational predictors (daily micro-interruptions) impair mental health (via experiences of negative affect) and how this impairment can be attenuated (by having a pet).

Our findings evidence that having a pet has significant differences regarding daily life at work, specifically, on the levels of negative affect and mental health and also on the frequency of daily micro-interruptions. The results are in line with other studies (e.g., Grajfoner et al., 2021) that showed that individuals who own pets tend to be happier and healthier than individuals without pets (Beetz et al., 2012; Junça-Silva, 2022b). This might be explained by the increased number of families with pets, and by the increased value attributed to them (Wagner & Pina e Cunha, 2021). Indeed, research has demonstrated that pets are a source of emotional support (Powell et al., 2019), can attenuate their owners' stress, anxiety, and depression even for cancer survivors (Trigg, 2021), and as such contribute to their physical and mental health (Grajfoner et al., 2021).

### Theoretical Contributions

First, based on the AET we delineate an argument to explain how daily micro-interruptions trigger negative affect, which contribute to impairing employees' mental health, at the daily level. Our results support the hypothesis and are in line with the AET; as such, we can conclude that daily micro-interruptions (a) are affective events because such occurrences predict negative affect, both at the within and between-person level and (b) by triggering negative affect, those daily micro-events impair mental health. These results are in line with the recent study developed by Feldman and Greenway (2021), who demonstrated that micro-interruptions –being interrupted while working– were affective events because such occurrences were linked to perceptions of time use and management, and therefore led the individual to experience negative affect. Moreover, micro-interruptions were also found to be associated with negative emotions such as frustration, anxiety, stress, and annoyance (Puranik et al., 2019). In addition, some studies showed that the frequency of daily micro-interruptions was related, in the long run, to more enduring states of “time famine” –the sense of having too much to do in little time– (Perlow, 1999), work overload (Kirmeyer, 1988) and emotional exhaustion (Lin et al., 2013).

Another stream of research has demonstrated that micro-interruptions were also linked to positive emotions (e.g., Sonnentag et al., 2018), however, those studies were focused on family-related micro-interruptions, and as such are different from work-related ones, because family-related micro-interruptions facilitate family-goals but, on the opposite work-related micro-interruptions may delay the attainment of work-goals.

The cognitive appraisal theory (Lazarus, 1999) can be a potential explanation for these contradictory findings about the relationship between micro-interruptions and mental health. The theory argues that it is individuals' interpretations of micro-interruptions that shape their attitudes and behaviors (more than the interruption per se; Fletcher et al., 2018). Thus, from this standpoint, depending on

the source of the micro-interruption (e.g., family members or coworkers), different appraisals can be made for the interruption. Maybe micro-interruptions from family (e.g., children asking for help on their homework) or pets (e.g., barking to go outside) are perceived differently than interruptions from coworkers (e.g., asking for pieces of advice) that can be appraised as more time-consuming or time famine (Galluch et al., 2015).

Diverse studies on micro-interruptions at work showed that these events were negatively linked to performance (Puranik et al., 2019), team and job satisfaction (Tse & Dasborough, 2008), and collaborative behaviors (Miner et al., 2005). What these studies have in common is that they demonstrate the relations between micro-interruptions and diverse outcomes, but they do not explain how. Only Galluch et al. (2015) showed that micro-interruptions were positively linked to turnover intentions via negative affective experiences. As such, this study goes further by demonstrating how micro-interruptions may impair mental health (via the frequent experience of negative affect). Hence, micro-interruptions are a frequent affective event that may create a dark shadow on affect and mental health.

Second, the findings show that the indirect effect of daily micro-interruptions on mental health via negative affect is attenuated by pets. In other words, employees who have pets are not so vulnerable to the negative effects of daily micro-interruptions on affect and mental health. On the other hand, those who do not have pets, when experiencing micro-interruptions during their working day, experience more negative affect, which in turn impairs their mental health. Hence, pets may be a protective condition for their owner's mental health during a working day and as such, sustains our proposed pet-human health effect.

The attachment theory (Bowlby, 1969) may sustain the findings; the human-animal interaction is based on mutualism (what does not happen in human-human interactions, because pets give without waiting for something in return), thus when individuals are emotionally connected to their pets, they tend to feel psychologically safer and securer. This was emphasized in studies conducted during uncertain and turbulent periods, such as the COVID-19 crisis; for instance, Grajfoner and colleagues (2021) showed that pet owners had higher levels of mental well-being and positive affect and better coping strategies during the COVID-19 lockdown. Moreover, other studies showed that interactions with pets increased the levels of oxytocin – a neuropeptide responsible for bonding and happiness (e.g., Miller et al., 2009) – relieving stress (e.g., Powell et al., 2019) and protecting other mental health indicators, such as mood, fear, anxiety, and depression (Beetz et al., 2012). Another stream of research has demonstrated that pets, with their nurturing characteristics, create conditions for their humans to feel supported, happier, and with a sense of purpose in their life (Pinha e Cunha et al., 2019; Hall et al., 2017).

Hence, pets are a source of emotional support for their owners. The Conservation of Resources Theory (COR; Hobfoll, 2001) emphasizes the importance of personal resources for diverse organizational (e.g., performance) and personal outcomes (e.g., well-being; Hobfoll, et al., 2018); thus, pets may be considered a personal resource for individuals, by protecting their resources and alleviating stress triggered by work-situations, such as daily micro-interruptions are. As such, we may conclude that pets are personal resources that may act as a mental health protective condition which may be named *the pet-human health effect*.

In sum, daily micro-interruptions create an affective shadow, by triggering negative affect and impairing mental health. However, this relation may be attenuated for individuals who own pets, and thereby pets may be the rainbow that fades the affective shadow away, protecting their owners' mental health.

These pandemic times improved the number of individuals teleworking, some of these for the first time. Our results demonstrate that employees who own pets may face an easier challenge, as pets may act as a resource that buffers the detrimental effects of daily micro-events on negative affect and mental health. Hence, managers may consider telework as a strategy to motivate, involve, and engage some employees, in particular, those who own pets; for these, telework may be a protective condition regarding the impact of negative or unexpected events on employees' affective experiences and mental health. Moreover, the COR theory may support the added value of teleworking nearby pets, as these may be viewed as a personal resource helping their owners to better cope with negative situations on their (tele) working day. Additionally, from a social exchange perspective, by feeling valued by their organization, employees who can work from home near their pets, may feel more identified with their organization which may result in better performance and well-being (Junça-Silva, 2022c).

Micro-interruptions are a constant in daily life, in particular considering the increase in collaborative activities, and the need for teamwork. As micro-interruptions appear to trigger negative affect that in turn influence daily mental health, managers may consider it useful to identify certain micro-interruptions that may be eliminated, for instance, some meetings that are excessive and useless. Another strategy should pass to identify the best period to schedule the meeting (in the morning, to avoid disturbing the work) and its length (as short as possible).

These results may also be relevant for training purposes. Training employees to better deal with micro-interruptions may be worthwhile, for instance through mindfulness practices or emotional regulation strategies (Pirson et al., 2018).

Despite the strengths of this study (having two groups of participants in a 5-day diary study), there are some shortcomings to consider. First, the self-reported nature of the data may lead to common method bias (Podsakoff et al., 2023). To avoid this, the multilevel confirmatory factor analysis shows the construct validity. Moreover, self-reported measures are the best method to measure internal events, such as micro-daily interruptions, and affective experiences, such as negative affect and mental health (Conway & Lance, 2010). Second, we conducted this study with teleworkers, which might have influenced the results. Therefore, future studies would test the model with employees in face-to-face work.

Future studies would consider testing the model with other kinds of daily micro-events and see whether the results are sustained. In addition, it would be useful to consider the type of pet and the level of emotional attachment as moderators within the AET framework. At last, because this study only considers pet ownership, and there is evidence of the beneficial effects of human-animal interactions for a wide range of work and personal outcomes (see Junça-Silva, 2023c), future studies should consider testing the model with human-animal interactions as a moderator.

This study develops a framework to explain how daily micro-interruptions enhance negative affect that, in turn, impair mental health. Indeed, micro-interruptions create an affective shadow that threatens employees' mental health, however, pets may fade away the shadow. Thus, we empirically demonstrate the pet-human' health

effect, by showing that pets are protective conditions for employees' mental health.

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