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Research Article

The Paw-Sitive Side of Telework: How Human–Animal Interactions Enhance Work Engagement and Performance

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Recently identified as a pet-friendly practice, teleworking allows people to perform their work while being near their pets. This study relied on the social exchange theory to develop a conceptual framework hypothesizing that work breaks including human–animal interactions would mediate the relationship between the work modality (onsite or telework) and affective (work engagement) and behavioral (performance) outcomes. Also, based on social exchange theory, this study tested the moderating role of attitudes toward teleworking in the previous indirect relationship. To test the model, 200 gig workers agreed to participate in this two-wave study. The results supported the hypotheses, revealing that work modality influenced both (a) work engagement and (b) performance through work breaks. The results also showed that this indirect relationship was moderated by the worker's attitude toward teleworking, becoming stronger for those with more favorable attitudes compared to those with less favorable attitudes. Based on the results, strategies for adopting pet-friendly practices or work environments, including hybrid work models, are discussed.

Keywords: human–animal interactions; performance; pet-friendly practices; telework; work engagement

1. Introduction

In recent years, there has been a growing interest among organizations in adopting new approaches to promote talent attraction and retention, enhance employer branding, and improve the performance and work engagement of their employees (e.g., [1–3]). Consequently, the concept of pet-friendly workplaces has gained considerable attention, driven both by the strong bond between individuals and their pets and the positive influence of pets on individuals' lives [4, 5].

The recent COVID-19 pandemic has led to an increase in the prevalence of teleworking—a flexible work modality where individuals can work from home—or the current hybrid model (a combination of onsite and teleworking) [6]. As a result, pet owners have been able to enjoy the companionship of their pets while working [7]. Teleworking has been identified as one of the most common pet-friendly practices [2], with pet owners showing a strong preference for this work modality [8, 9].

One reason for this preference is the opportunity that teleworking provides for interactions with their pets [10]. Recent studies have highlighted that human–animal interactions (HAI) are associated with various positive outcomes, such as improved performance (e.g., [11, 12]). For instance, some studies have demonstrated that HAI can reduce stress symptoms, enhance well-being, foster social connections, and increase individual responsibility [13]. Recently, these interactions during work have been conceptualized as microbreaks that facilitate the recovery of resources such as energy, self-control, and work engagement and have also been called the furr-recovery method [7, 14].

The social exchange theory (SET) [15] can explain why HAI in the workplace contributes to resource recovery. Accordingly, people behave based on their perceptions of exchanges with the organization [15]; when these

perceptions are positive, individuals are more likely to give back to the organization, becoming more engaged with their work. Considering that pet owners seem to highly value the opportunity to telework [2], they may feel a sense of indebtedness to the organization for providing this opportunity to them. Thus, feeling indebted due to teleworking and the opportunity it affords to interact with their pets throughout the day, pet owners are likely to experience higher work engagement—an affective, cognitive, and motivational state comprising vigor, absorption, and dedication to work [16]—and improve their performance [1]. Additionally, they may perceive the organization as contributing to their interests and sharing similar values, fostering greater alignment with the organization (person–organization fit theory; [17, 18]).

Despite the significant increase in teleworking and pet-friendly workplaces, knowledge about these practices and their effects on work engagement and performance is still scarce. Therefore, this study is aimed at contributing to the scientific understanding of the impact of work modality (onsite and teleworking) on affective (work engagement) and behavioral (performance) outcomes. Specifically, it seeks to explore how and for whom work modality influences work engagement and performance. To achieve this, the SET was used as a theoretical framework to test (1) the mediating role of HAI in the relationship between work modality and affective (work engagement) and behavioral (performance) outcomes and (2) the moderating role of attitudes toward teleworking in the indirect relationships.

This study is relevant both theoretically and practically. First, the results will expand knowledge regarding the role of microbreaks involving HAI in work engagement and performance. Furthermore, by analyzing the role of HAI in the relationship between work modality and work engagement and performance, this study will contribute to extending the SET to include the presence of pets in the workplace as a resource in the exchange relationship between workers and organizations. On a practical level, examining the influence of pet-friendly workplaces (teleworking) on employee work engagement and performance will help formulate management strategies for incorporating pet-friendly practices. Similarly, by delving into the underlying mechanisms and exploring circumstances in which work modality can produce benefits, this study is aimed at providing evidence-based information and results to organizations considering or implementing pet-friendly initiatives.

2. Theoretical Framework

2.1. The Importance of Pets. With social, economic, and human evolution, pets, once regarded as objects of defense, hunting, and security, have come to be seen as integral members of the family [2]. For instance, about seven in 10 Portuguese individuals (68.7%) consider their pets to be a fundamental part of the family, according to the study "First Moments with Pets" conducted by Royal Canin, a leading company in the field of animal nutrition [19]. Similarly, according to the Institute for Nature Conservation and Forests, there were 2.75 million registered companion animals in Portugal in 2022. All these indicators seem to point to a significant increase in the presence of pets in Portuguese society, suggesting that Portugal is moving towards being recognized as a pet-friendly country.

"Pet-parenting" reflects a shift in the perception of pets in modern societies, where they are increasingly seen as companions, sources of emotional support, and family members [20]. This concept encompasses various factors such as emotional concern for the pet, general care (e.g., health), training, and socialization [21]. Recent studies have shown how pet parenting influences how pet owners interact with and treat their pets. For instance, pet parents seem willing to invest resources to ensure their pets' well-being and are increasingly seeking high-quality products (e.g., pet food). They celebrate special occasions, such as birthdays, and share social contexts with their pets, not confining them solely to the home environment [21]. This is a growing global trend, particularly popular among the Millennial generation [22]. Overall, pets can play a significant role in filling an emotional void and providing a sense of purpose in the life of someone seeking companionship and support [20].

2.2. HAI at Work. During the COVID-19 pandemic, there was a significant increase in pet adoptions [23]. Some justifications for this widespread increase were the reduction of loneliness promoted by mandatory social isolation (enforced by the government in 2020 and 2021), the increase in physical and psychological stimuli provided by the presence and interaction with pets, and the possibility of "hygienic" walks with them [24].

Teleworking was also a mandatory solution and played a significant role in this increase, as people working remotely, especially during mandatory lockdown periods, could work while being close to their pets throughout the workday [9]. This flexible working model, where employees can work from home [25, 26], became possible through communication and information technology, such as the ability to hold virtual meetings and the use of VPN to secure organizational data regardless of the employee's location [27]. Thus, workers were able to perform their tasks from home, ensuring high productivity levels through task completion and at the same time assured the necessary social distance restrictions (e.g., [28]).

There is evidence confirming that teleworking has become a turning point for talent retention because it allows for flexible schedules, which, in turn, are linked to increased levels of satisfaction, well-being, and employee performance [29, 30]. Also, it allows for better time management and balancing work and nonwork activities—something that would not be feasible if the employee were in the office [31]—contributing to a better work-life balance ([32], [33]). Further, with this working model emerged the possibility of working close to employees' pets [1, 34]. Therefore, pet owners who telework end up having more time to pay attention to their pets and, at the same time, receive unconditional love and affection in return [35]. Thus, telework has been identified as an example of a pet-friendly practice [1].

In addition to being close to their pets during teleworking, employees can interact with them throughout the day [7]. HAI refers to a "relationship that involves a series of

interactions over time between two individuals who know each other" ([36], p. 24). More recently, Junça-Silva [7] suggested that HAI are "mutual and dynamic interactions between people and their pets that affect physical and psychological health and well-being" (pp. 3); in other words, this definition not only concerns the interaction itself but also how the interaction influences individuals in terms of physical, psychological, and overall well-being. This definition also aligns with the so-called pet-effect hypothesis proposed by Herzog [37]; according to Herzog [37], the pet-effect hypothesis suggests that the presence of a pet reduces negative affect, while interacting with pets triggers positive affect.

There are three types of HAI: (1) visual contact (e.g., watching the animal play with a bone); physical contact (e.g., stroking the animal's fur or petting its head); and looking at images of animals (e.g., looking at cute animal photos or watching a movie with animals) [7, 14].

Recent studies have shown that HAI positively contributes to individuals' physical and psychological well-being (e.g., [38]) because these interactions can lower cortisol levels (a stress hormone) and blood pressure [13] and improve the quality of coping strategies when facing stressful situations [39, 40]; they have also been linked to higher levels of happiness, well-being, lower levels of anxiety, depression, and distress (e.g., [41–43]). Importantly, the evidence on HAI is not limited to between-person differences but also extends to within-person processes. Daily diary studies have shown that HAI contributes to day-to-day fluctuations in affective well-being, with interactions with companion animals enhancing positive affect and buffering against daily stressors [44]. In line with this, Junça-Silva [1, 7] demonstrated that frequent interactions with companion animals during telework days fostered the recovery of self-regulatory resources and, in turn, improved daily well-being and engagement at both the within-and-between-person levels. Taken together, these findings suggest that HAI exerts both enduring and dynamic effects on individual well-being, highlighting its relevance for employees' everyday work experiences.

The SET can explain how HAI at work can positively influence employees. In the framework of the SET, Blau [15] has argued that social exchanges provide transactions over time and reciprocally rewarded relationships. At the organizational level, the SET is present at various levels. Exchange can be expressed as a balance of exchanges because the individual gives but also expects to receive in return, and vice versa, meaning the organization seeks to offer resources to generate a positive perception of the employee toward the organization and, consequently, receive in return from the employee. Further, the SET underlies the human-animal relationship; for example, in the context of teleworking, it can generate positive attitudes from employees at work [15]. Thus, according to the SET, when pet owners can work close to their pets—either at the office or teleworking—they tend to perceive that the organization cares about their values and needs [15]. By realizing this, workers feel indebted and will, therefore, try to reciprocate—reciprocity norm [45]. Thus, the relationship between employees and the organization results from the perception of the comparison between what the organization gives and the effort exerted; the more employees feel they receive from the organization, the more they will give in return. Thus, it should be noted that employees' behaviors are the result of how they are treated and what they receive from the organization. For example, for pet owners, being allowed to work from home is considered a privilege, making them more committed, engaged, and performing better [35, 46].

Beyond the SET, HAI may also enhance work engagement and performance through increased prosociality. Research indicates that HAI can foster empathy, cooperation, and responsiveness, even in remote work settings [47]. In telework contexts, prosocial employees may be more attentive and committed to shared goals, while acts of kindness and supportive behaviors within teams can generate an upward spiral of positive affect and engagement. This perspective suggests that, in addition to reciprocal exchanges, HAI may promote a prosocial work climate that reinforces work engagement and performance.

Work engagement is a positive affective-motivational attitude composed of three dimensions: vigor, dedication, and absorption [48]. Vigor is characterized by high levels of energy and mental resilience during the working period and a willingness to invest effort in work and resilience against difficulties. Dedication is defined as a sense of belonging, persistence, inspiration, pride, and challenge that the employee feels during their work. Absorption is the employee's ability to fully concentrate on their work and engage with it, increasing the perception that time spent working passes more quickly. When the perception of social exchange is positive, performance tends to be improved [2]. According to Lebas and Euske [49], performance is the result achieved about the goals and expectations defined by the organization through decisions in the present and to create value in the future with efficiency and effectiveness.

Several studies have shown the beneficial effect of HAI on performance and affective indicators (e.g., [12]). Some studies have shown that pets can help their owners reduce negative emotions and ease their minds [42]. They also appear to be enhancers of motivation, facilitating interaction with others and the expression of needs and emotions [22]. Some studies have shown that bringing pets to the office can reduce stress and increase workers' confidence [7]. When employees feel confident, they tend to be more engaged with their work, focusing more on it, which can result in a significant increase in organizational profits [50–52]. Moreover, the study conducted by Junça-Silva, 2022, revealed that those who had the privilege of interacting with their pets during the workday demonstrated feeling more identified with their organization, which, in turn, translated into increased performance, focus on their work, dedication, and a more positive and healthier mindset. Also, in [7, 14], in a set of two studies, Junça-Silva emphasized the so-called furr-recovery method – an explanatory mechanism of how HAI allowed employees to recover energy and self-regulatory resources that influenced performance and well-being. Similarly, in 2023, Junça-Silva showed that HAI, in the context of teleworking, increased individuals' work engagement and, consequently, their performance.

Hence, based on the SET and empirical results, the following hypothesis was defined:

H1:*Work modality (onsite* versus *teleworking) has a positive relationship with (a) work engagement and (b) performance through HAI.*

2.3. The Moderating Role of the Attitude Toward Teleworking. The relationship between teleworking and its benefits through HAI can be influenced by conditions that can both amplify or dampen these effects. For example, teleworking seems to provide flexibility and autonomy that directly impact employees' well-being, motivation, and productivity [53]. Teleworking seems to have benefits because it fits the specific needs of each employee who can thus self-manage and optimize their time to achieve a balance between professional and personal life. However, the benefits of teleworking depend on each worker's perception of them.

Recently, and as a result of the COVID-19 pandemic, many workers started working from home, and when mandatory lockdowns ended, many of them requested to continue teleworking (e.g., [54]), with one of the main reasons being able to be close to their pets [1]. This explains why workers with pets are at the top of the list of those who prefer to telework [7]. Attitudes toward teleworking resulting from benefits focused on proximity to pets are, therefore, a condition that can amplify the positive effect of this work modality on work engagement and performance through HAI [1].

The conservation of resources theory (COR; [55]) explains the benefits of workers working closer to their pets. The theory suggests that individuals with more resources are less vulnerable to resource loss and more capable of gaining other resources. Thus, when employees have more personal resources (e.g., working close to their pets), they become less vulnerable to resource loss and are in a better position to invest resources in the engagement process, which, in turn, can result in positive outcomes such as job performance [56].

Several authors have indicated that (tele) workers are more satisfied with their work if they perceive it as beneficial [57]. For example, Junça-Silva [7] demonstrated that teleworking positively influenced performance through the experience of positive emotions when attitudes toward teleworking were positive (compared to less positive attitudes). These positive attitudes seem to be derived from the fact that people can benefit from working closer to their pets [11]and because they represent an important source of social support [2], thus improving psychological and physiological health, self-esteem [58, 59], and leading to higher performance rates [12, 60].

Therefore, based on the described evidence and the COR theory, the following hypotheses were defined:

H2:*Attitude toward teleworking moderates the relationship between HAI and (a) work engagement and (b) performance.*

H3:*Attitude toward teleworking moderates the indirect relationship between teleworking and (a) work engagement and (b) performance through HAI, in such a way that the relationship will become stronger when the worker has a more positive attitude toward teleworking (*versus *negative) (see* Figure 1*).*

3. Method

3.1. Participants and Procedure. The study received approval from the Ethics Committee of the first author's university prior to its implementation. Participants were recruited from the researchers' professional network and invited via email to take part in a study on pet-friendly work environments. They were thoroughly informed about the study's nature and objectives, as well as the assurance of data confidentiality and anonymity. Additionally, detailed information was provided regarding the study's requirements in terms of time commitment and activities, as well as the disclosure of any confidential information. Participants were explicitly informed that their participation was voluntary and that they could decline or withdraw from the study at any time without any penalty. Since the questionnaires were distributed online (via email), this information was included in the cover letter accompanying the first questionnaire.

Data collection was conducted in two waves between March and May 2023. In the first wave, 330 questionnaires were distributed to assess attitudes toward telework, sociodemographic characteristics, and work modality. A total of 258 valid responses were obtained, yielding a response rate of 78.18%. Then, 1 week later, during the second wave, a follow-up survey assessing HAI, work engagement, and job performance was sent to the initial respondents. At this stage, 231 responses were received (response rate = 70%). Following the exclusion of invalid responses—such as surveys completed in under 2 min or containing superficial answers—a final sample of 200 valid responses was retained, resulting in an overall effective response rate of 60.60%. A prior power analysis (effect size = 0.2, $\alpha = 0.05$) confirmed that the final sample size was adequate for testing the proposed hypotheses.

The final sample comprised 200 gig workers (freelancers), with a mean age of 26.64 years (SD = 7.06) and an average organizational tenure[1] of 4.05 years (SD = 6.14). The majority of participants were female (73%). Regarding educational attainment, 56.5% held a bachelor's degree, and 30.5% had completed a master's degree. In terms of work arrangements, 66% of participants reported working fully remotely, while 34% engaged in hybrid work, combining remote and on-site activities.

On average, participants reported owning 1.35 pets (SD = 0.94), with an average pet ownership duration of 5.65 years (SD = 3.62). The majority owned dogs (72.4%), followed by cats (25.6%). Approximately 15% of participants reported that their pets had received behavioral training. Most respondents (74%) indicated that their primary reason for owning a pet was companionship. Regarding the source of pet acquisition, 34% received pets from family members, 31% adopted them, and smaller proportions acquired them from breeders (17.4%), shelters (5.2%), or through purchase (4%).

3.2. Measures

3.2.1. Work Modality (Time 1). To measure work modality, it was asked whether the person had been in (1) in-person work mode, (2) hybrid work mode, and (3) fully telework in the last week. However, as no participants reported

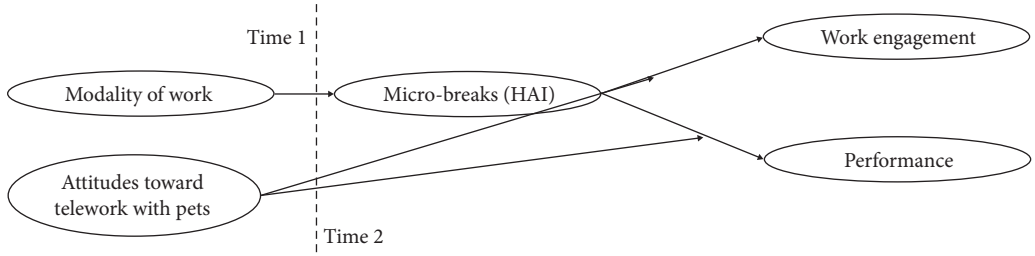

FIGURE 1: The proposed conceptual model.

working fully in person, work arrangement was treated as a binary variable distinguishing between hybrid (coded as 1) and telework (coded as 2).

3.2.2. Attitudes Toward Telework (Time 1). The Telework Pet Scale [1] was used to measure attitudes toward telework. It contains eight items that inquire to what extent a person perceives the effects of telework on issues related to pets, such as "Being close to my pet" or "Not worrying about my pet during the day". Participants responded on a five-point Likert scale (1—*much worse*; 5—*much better*) ($\alpha = 0.83$).

3.2.3. Work Engagement (Time 2). The Ultra-Short Measure of Work Engagement [16] was used. It consisted of three items (e.g., "I have felt enthusiastic about my work") answered on a five-point Likert scale (1—*never*; 5—*always*) ($\alpha = 0.85$).

3.2.4. Performance (Time 2). Six items from the Individual Work Performance Questionnaire (IWPQ) developed by Koopmans et al. [61] were used to measure performance (e.g., "I start new tasks independently when old ones are completed."). Participants answered on a five-point Likert scale (1—*strongly disagree*; 5—*strongly agree*) ($\alpha = 0.90$).

3.2.5. HAI (Time 2). HAI were measured using the HAI at Work Scale [62]. The scale contains three items answered on a five-point Likert scale (1—*never*; 5—*always*) that assess the frequency of HAI during the workday: "I took breaks from work to interact with my pet" ($\alpha = 0.94$).

3.2.6. Control Variables. We used participants' sex and age as controls. We used age because this variable could account for influences on performance and work engagement, as there have been identified differences in the way older and younger experiences affect their subsequent levels of well-being [63]. Moreover, we used sex as a control because some studies have shown that women tend to be more sensitive and empathetic to animals than men [64].

3.3. Data Analysis. To test Hypothesis 1, Model 4 of the PROCESS macro in SPSS [65] was employed. This macro is particularly relevant for estimating indirect effects as it uses the bootstrapping method (5000 times), allowing for the calculation of confidence intervals (CIs). To test Hypothesis 2, Model 1 (also from PROCESS) was utilized, and for testing Hypothesis 3, that is, the moderated mediation, Model 14 of the PROCESS [65] was employed. The products (moderations) were centered on their mean value, and the bootstrapping method (5000 times) was used to calculate CIs.

4. Results

4.1. Confirmatory Factor Analysis (CFA). To evaluate the distinctiveness of the study variables, CFAs were performed. The adequacy of the measurement model was assessed using multiple fit indices. A model is considered to exhibit an acceptable fit when the root mean square error of approximation (RMSEA) is below 0.06, the comparative fit index (CFI) exceeds 0.90, the Tucker–Lewis index (TLI) surpasses 0.90, and the standardized root mean square residual (SRMR) is below 0.08 [66]. Additionally, meeting the acceptable thresholds for at least three of these indices is regarded as sufficient evidence of model fit [67].

The results demonstrated that the four-factor measurement model, which included HAI, work engagement, job performance, and attitudes toward telework, provided the best fit to the data ($\chi^2/df = 1.14$, $p < 0.01$, RMSEA = 0.03, CFI = 0.99, TLI = 0.99, and SRMR = 0.06). To further validate the distinctiveness of the constructs, this model was compared with several alternative models.

First, a three-factor model was tested, in which work engagement and job performance were merged into a single latent factor, while HAI and attitudes toward telework remained as separate constructs. This model yielded a slightly weaker fit ($\chi^2/df = 1.50$, $p < 0.01$, RMSEA = 0.06, CFI = 0.99, TLI = 0.99, and SRMR = 0.08). Next, a two-factor model was examined, where work engagement and job performance were combined into a single factor, while HAI and attitudes toward telework were also grouped into a single factor. This model demonstrated a substantially poorer fit ($\chi^2/df = 9.73$, $p < 0.01$, RMSEA = 0.24, CFI = 0.94, TLI = 0.93, and SRMR = 0.19).

Finally, the fit of a single-factor model, in which all four constructs were collapsed into a single latent factor, was assessed. This model exhibited the weakest fit among all tested models ($\chi^2/df = 20.59$, $p < 0.01$, RMSEA = 0.36, CFI = 0.87, TLI = 0.85, and SRMR = 0.27). The significantly poorer fit of the single-factor model, compared to the proposed four-factor model, suggests that common method bias was not a substantial concern in this study.

4.2. Descriptive Statistics. Table 1 presents descriptive statistics, correlations, and internal consistencies.

4.3. Hypothesis Testing. Hypothesis 1 proposed that the relationship between telework and (a) work engagement and (b) job performance would be mediated by HAI. The results indicated a significant indirect effect of telework on work engagement through HAI ($B = 0.08$, 95% CI [0.00, 0.19]). The model accounted for 4% of the variance in work engagement ($R^2 = 0.04$, $p < 0.01$). Both the relationship between telework and HAI ($B = 0.67$, $p < 0.001$) and the association between HAI and work engagement ($B = 0.12$, $p < 0.05$) were statistically significant. However, upon including HAI as a mediator, the direct effect of telework on work engagement became nonsignificant ($B = 0.04$, $p > 0.05$), indicating full mediation. These findings provide empirical support for Hypothesis 1a.

With respect to Hypothesis 1b, which examined job performance as the criterion variable, the results similarly revealed a significant indirect effect ($B = 0.05$, 95% CI [0.00, 0.11]). The model explained 4% of the variance in job performance ($R^2 = 0.04$, $p < 0.001$). Both the association between telework and HAI ($B = 0.67$, $p < 0.001$) and the relationship between HAI and job performance ($B = 0.07$, $p < 0.05$) were significant. After incorporating HAI into the model, the direct effect of telework on performance was no longer statistically significant ($B = 0.03$, $p > 0.05$), indicating full mediation. Consequently, Hypothesis 1b was also supported by the data (see Table 2).

Hypothesis 2 proposed that attitudes toward telework would moderate the relationship between HAI and (a) work engagement and (b) job performance. To examine this hypothesis, Model 1 from PROCESS [65] was employed. The findings indicated a significant interaction effect between HAI and attitudes toward telework on both work engagement ($B = 0.20$, SE = 0.08, $\Delta R^2 = 0.04$, $F_{(1,190)} = 6.65$, $p < 0.001$) and job performance ($B = 0.16$, SE = 0.05, $\Delta R^2 = 0.06$, $F_{(1,190)} = 9.74$, $p < 0.001$). These results provide empirical support for Hypotheses 2a and 2b.

Hypothesis 3 posited that the indirect effect of telework on (a) work engagement and (b) job performance via HAI would be contingent on attitudes toward telework, such that the effect would be stronger for individuals with more favorable attitudes toward telework. To test this hypothesis, a moderated mediation analysis was conducted using Model 14 from PROCESS.

Regarding Hypothesis 3a (work engagement), the results revealed that the index of moderated mediation was statistically significant ($B = 0.13$, SE = 0.07, 95% CI [0.00, 0.16]), supporting the hypothesis (see Table 3).

The significant interaction effect indicated that the indirect relationship varied depending on different levels of the moderating variable—attitudes toward telework. A simple slopes analysis, following Dawson and Richter's [68] recommendations, revealed that the indirect effect was statistically significant and stronger for individuals with more favorable attitudes toward telework (+1 SD: $B = 0.17$, SE = 0.08, $p < 0.01$, 95% CI [0.03, 0.34]). As attitudes toward telework became neutral, the effect weakened and was no longer statistically significant (M: $B = 0.09$, SE = 0.05, $p > 0.05$, 95% CI [0.00, 0.20]). Furthermore, when individuals held negative attitudes toward telework (−1 SD), the indirect effect was entirely nonsignificant ($B = 0.00$, SE = 0.05, $p > 0.05$, 95% CI [−0.10, 0.11]) (see Figure 2). These findings confirm that the mediation effect was contingent on attitudes toward telework, thus providing empirical support for Hypothesis 3a.

Regarding Hypothesis 3b (performance), the results revealed that the index associated with the moderation of the mediation was statistically significant ($B = 0.10$, SE = 0.05, 95% CI [0.02, 0.20]) (see Table 4).

A simple slope analysis confirmed that the indirect effect was statistically significant and stronger only when attitudes toward telework were more favorable (+1 SD: $B = 0.11$, SE = 0.05, $p < 0.01$, 95% CI [0.03, 0.20]). However, the indirect effect was not significant for individuals with neutral or negative attitudes toward telework (M: $B = 0.04$, SE = 0.03, $p > 0.05$, 95% CI [−0.01, 0.10]; −1 SD: $B = -0.03$, SE = 0.04, $p > 0.05$, 95% CI [−0.11, 0.04]) (see Figure 3). These findings indicate that the mediation effect occurred only under conditions of high telework support, thereby providing empirical support for Hypothesis 3b.

5. Discussion

The present study relies on the SET to examine the role of HAI in the relationship between the work modality (onsite work or teleworking) and affective (work engagement) and behavioral (performance) outcomes. This study also tests the moderating role of attitudes toward teleworking in the indirect relationship.

5.1. Theoretical Implications. This study contributes to the literature by providing empirical evidence on the role of HAI in the workplace, particularly in telework and hybrid work contexts. It extends SET by highlighting how HAI can influence employee work engagement and performance through both reciprocal and prosocial mechanisms [14]. Moreover, the study adds to within-person research by demonstrating that daily interactions with companion animals can foster recovery of self-regulatory resources, improve affective well-being, and enhance work engagement (e.g., [44]). Additionally, it contributes to the ongoing debate on the intersection of pets and organizational work life [2, 10, 35, 47] highlighting that companion animals may promote not only individual benefits but also organizational outcomes, as engaged employees are more likely to demonstrate higher levels of performance and commitment [46].

The results indicate that telework is associated with higher work engagement and performance through HAI. Teleworking provides employees with opportunities to interact with their pets during the workday, which relates to greater engagement and performance. From a SET perspective, when employees perceive benefits from telework and can interact with their pets, they are more likely to show higher engagement, which is associated with better performance. Similarly, the COR framework suggests that HAI

TABLE 1: Descriptive statistics.

Variable	M	SD	1	2	3	4	5	6
1. Work modality[b]	1.68	0.68	—					
2. HAI	3.22[a]	1.44	0.33**	(0.94)				
3. Work engagement	3.27[a]	1.01	0.03	0.17*	(0.85)			
4. Performance	3.84[a]	0.66	0.08	0.14*	0.39**	(0.90)		
5. Attitudes to telework	4.36[a]	0.68	0.06	0.28**	0.01	0.20**	(0.83)	
6. Age	26.64	7.06	0.12	0.16*	0.07	0.06	0.10*	
7. Gender[c]	—	—	0.05	−0.16*	−0.06	−0.14*	−0.24**	0.10

Note: $N = 200$.
Abbreviation: HAI, human–animal interactions.
[a]Scale from 1 to 5. Cronbach alphas are in brackets.
[b]Work modalities: 1 = hybrid and 2 = full telework.
[c]Gender: 1 = female and 2 = male.
*$p < 0.05$ and **$p < 0.001$.

TABLE 2: Indirect effects' results.

	Model 1 HAI		Model 2 Work engagement		Model 3 Performance	
	b	**SE**	***b***	**SE**	***B***	**SE**
Intercept	1.99***	0.57	3.33***	0.45	3.41***	0.29
Work modality	0.67***	0.16	0.13	0.13	0.03	0.08
HAI	—	—	0.12*	0.06	0.07*	0.04
Gender[a]	−0.57*	0.27	−0.14	0.19	−0.01	0.12
Age	0.03	0.02	−0.00	0.01	0.01	0.01
F	9.21***		2.44*		2.14	
R^2	0.16		0.03		0.04	
Df	3, 151		2, 152		2, 152	
Direct effect[b]	0.67***	0.16	0.13	0.13	0.09	0.06
Indirect effect[c]	—		0.08**	0.04	0.05**	0.03
CI 95% indirect effect			0.00	0.13	0.00	0.11

Note: $N = 200$. Unstandardized regression coefficients.
Abbreviations: CI, confidence interval; HAI, human–animal interactions.
[a]1 = female; 2 = male.
[b]Direct effect of work modality on HAI and work engagement and performance.
[c]Indirect effect of work modality on work engagement and performance through HAI.
*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$.

TABLE 3: Moderated mediation model (work engagement).

	HAI	Work engagement
Work modality	0.67***, $R^2 = 0.16$	0.09, $R^2 = 0.07$
HAI	—	0.13*
Attitudes toward telework	—	0.08
HAI * attitudes toward telework	—	0.19*
Gender[a]	−0.57*	−0.18
Age	0.03	−0.00
$R^2 = 0.07$, $F_{(6,148)} = 1.96$, $p < 0.05$, $\Delta R^2 = 0.04$, $F_{(1,148)} = 5.49$, $p < 0.05$		

Note: $N = 200$. Unstandardized regression coefficients.
Abbreviations: CI, confidence interval; HAI, human–animal interactions.
[a]1 = female; 2 = male.
*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$.

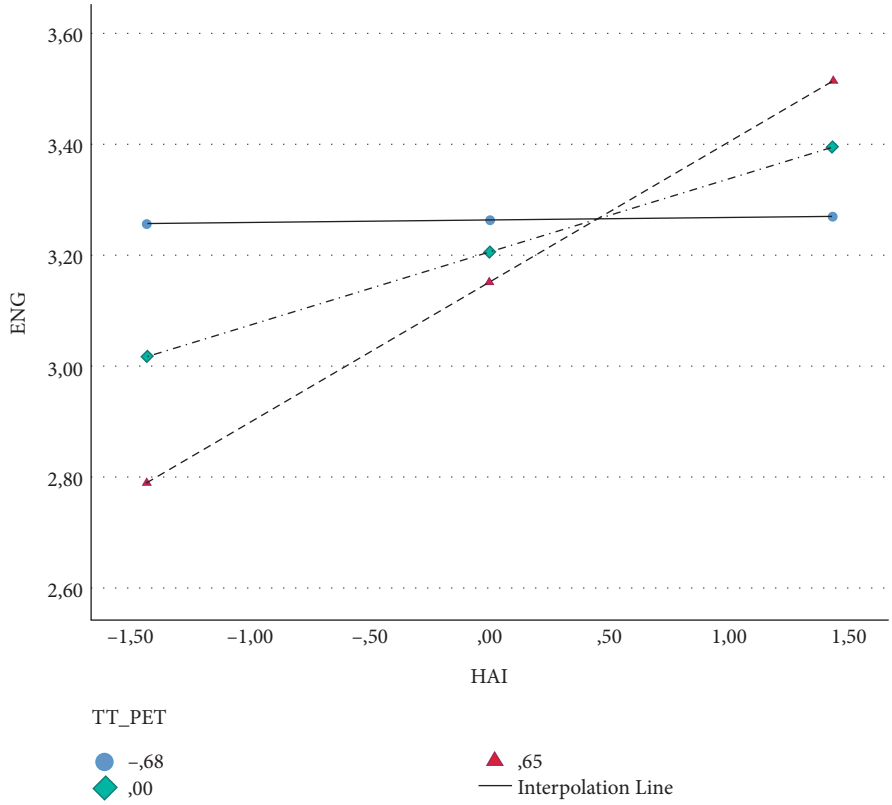

FIGURE 2: Interaction between HAI and attitudes towards telework concerning work engagement.

TABLE 4: Moderated mediation model (performance).

	HAI	Performance
Work modality	0.67^{***}, $R^2 = 0.16$	0.01, $R^2 = 0.10$
HAI	—	0.07^{*}
Attitudes toward telework	—	0.09
HAI * attitudes toward telework	—	0.16^{**}
Gender[a]	-0.57^{*}	0.01
Age	0.03	0.01
$R^2 = 0.10$, $F_{(6,148)} = 2.71$, $p < 0.01$, $\Delta R^2 = 0.06$, $F_{(1,148)} = 9.21$, $p < 0.001$		

Note: $N = 200$. Unstandardized regression coefficients.
Abbreviations: CI, confidence interval; HAI, human–animal interactions.
[a]1 = female; 2 = male.
$^{*}p < 0.05$, $^{**}p < 0.01$, and $^{***}p < 0.001$.

may serve as micro-work breaks that facilitate the recovery of resources such as energy, self-control, and work engagement [7, 14]. Consequently, interactions with companion animals are associated with increased focus (absorption), energy (vigor), and enthusiasm (dedication) toward work—-key components of engagement [69]—and with higher performance.

These associations are consistent with prior findings; for instance, Junça-Silva [7] reported that employees who interacted with their pets during the workday experienced stronger organizational identification, which was linked to greater performance, focus, dedication, and a more positive mindset. Similarly, Delanoeije and Verbruggen [35] found that pet owners who telework reported higher job performance, reduced feelings of loneliness, and increased physical activity, suggesting that interactions with companion animals may support both well-being and engagement in remote work settings. Overall, telework is associated with greater work engagement and performance, potentially because it provides opportunities for employees to engage in HAI, though causal inferences cannot be drawn from these data.

The results also show that employees' attitudes toward teleworking moderate the relationship between HAI and work engagement and performance, such that the relationship is

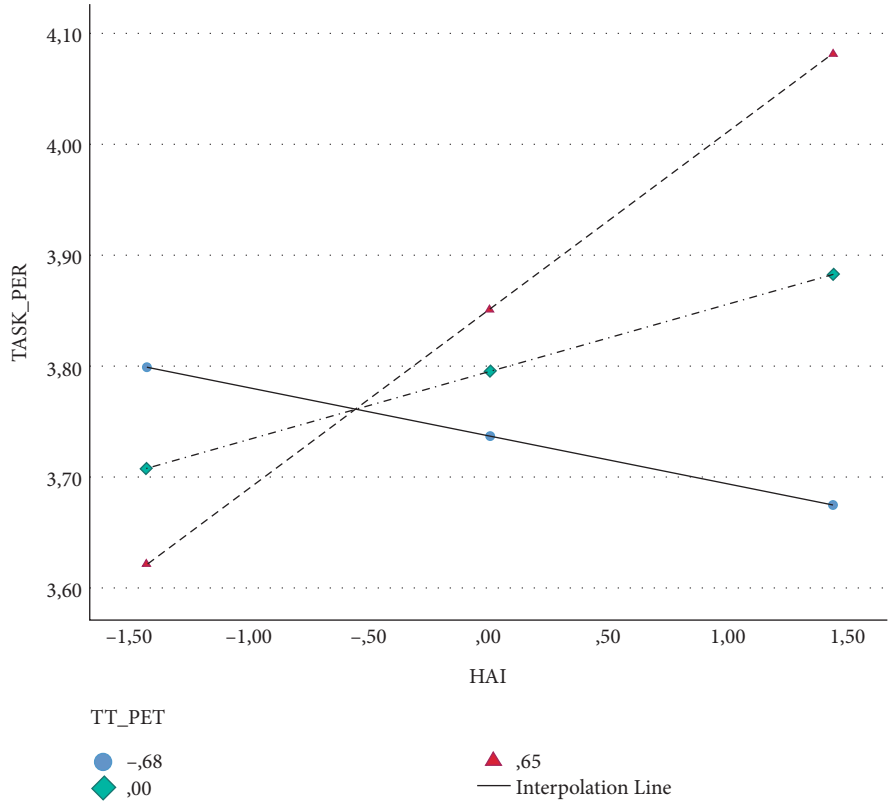

Figure 3: Interaction between HAI and attitudes towards telework concerning performance.

stronger when the attitude toward teleworking is more positive. In other words, the relationship between HAI is stronger both regarding work engagement and performance when employees perceive teleworking more favorably.

On the other hand, the indirect relationship between teleworking and (a) work engagement and (b) performance through HAI is also moderated by attitudes toward teleworking, becoming stronger when attitudes are more favorable (versus less favorable). According to the literature, if individuals feel positive about teleworking, they are likely to feel integrated within the organization [2]. Feeling gratified for teleworking, as it allows them to interact with their pets, is likely to increase their organizational commitment and enhance their performance [1]. Furthermore, the perception that the organization contributes to their interests and shares similar values by promoting teleworking opportunities can lead to greater organizational adjustment, justifying the significant increase in work engagement and performance.

Overall, teleworking is associated with higher work engagement and performance, which may be linked to opportunities for employees to interact with their pets during the workday. This association appears stronger among individuals who hold more favorable attitudes toward teleworking.

5.2. Practical Implications. Alongside the social and personal changes that have occurred in the last 5 years regarding how people see and treat their pets, there have also been some shifts in organizations [2]. These are increasingly attentive to new trends that influence talent attraction and retention, improve employee satisfaction, and enhance organizational commitment [7]. Conversely, some studies, though still limited, have highlighted that the intersection of pets in organizational daily life can have various benefits such as social support, increased performance, and improved quality of social interactions [3, 11]. This study also contributes to expanding this knowledge, in particular for gig workers.

Indeed, some organizations have already implemented successful policies, such as Amazon and Google. In Portugal, this trend seems to be growing; Nestlé Portugal has embraced pet-friendly work environments, allowing employees to bring their pets to work [70]. This initiative is part of the Purina in Society commitments launched in 2016 and has been expanding to several countries. For this, the organization's headquarters has a leisure area where pets can stay while owners work, and during breaks, they can interact and socialize with them to recharge their energy. To implement this new policy, animals had to undergo selection processes to determine whether they could share space with others, among other factors to ensure safety and well-being for all. Nestlé has reported increased communication among colleagues, improved relationship quality, and an enhanced work environment since then. Nestlé CEO, Bernard Meunier, has also reported improvements in the company's work climate, a better work-life balance, reduced stress, and less worry among workers about leaving their pets alone at home for long hours – a concern usually

associated with the gradual loss of focus throughout the workday [2].

Pet-friendly practices may include opportunities for teleworking (allowing workers to perform tasks from home close to their pets), permission to bring the pet to the workplace, pet health insurance or financial assistance for it, granting a day (or part of it) off for a veterinarian appointment, bereavement leave, vouchers for canine hotels or daycare, performance rewards in pet products, initiatives to encourage animal adoption, support for animal charity institutions (e.g., purchasing Christmas gifts from charity shops), and support for volunteering (e.g., granting a workday for employees to volunteer at animal charity institutions) [7].

Experimental studies have shown that the presence of pets in places like hospitals, care homes, schools, and organizational settings can have a positive impact on workers' well-being and contribute to employer branding for organizations [34]. A LiveCareer study indicated that 52% of respondents believed that organizations with pet-friendly policies and benefits would be more attractive to work for, and 52% deemed it very important as they felt more supported in their workplaces by their pets, especially during the pandemic [71]. Thus, the gradual implementation of pet-friendly practices seems important, as it can be a strategy appreciated by employees with pets who have a strong bond with them. When teleworking is not feasible, similar solutions can be found to achieve employee well-being and satisfaction. For example, adopting an organization's mascot, establishing a pet-friendly culture that allows everyone to freely discuss their pets, promoting volunteer work for animal causes, and offering pet insurance or veterinary vouchers. Other examples could include creating a "Pet Day," where employees who feel comfortable could bring their pets to work. In cases where this is not possible due to infrastructure or company culture, providing a voucher for a pet daycare where the animal can stay during the workday without the owner worrying could be considered. Another appreciated measure is extending the health insurance coverage of the family to include pets. This measure would be significant as the organization would recognize pets as an integral part of the family unit—something highly valued by younger generations [58, 72].

5.3. Limitations and Future Directions. Despite the positive aspects of this study, it has some limitations. First, the sample size is small ($n = 200$), which may lead to less robust results; thus, generalizing the findings must be done with caution. Another limitation is related to the study's design; being a two-wave study makes it more challenging to understand its long-term effects and demonstrate a type of trend that may lead to common method bias [73]. Although various analyses, such as reliability analysis and factorial analyses, were conducted to address this, this limitation should be taken into account.

Pet-friendly work environments are still a relatively recent topic, so further research investment is needed. It would be interesting to understand the long-term results and their impacts on both personal and organizational levels. Therefore, in the future, conducting longitudinal or daily studies would be beneficial to explore the long-term effects when employees are close to their pets in terms of performance or other outcomes (e.g., health).

Studying which pet-friendly practices are most valued by employees and which ones could be adopted based on the organization's culture, space, and Human Resources policies would be insightful. Exploring and understanding the pets' characteristics is crucial, as all pets are different, and not all are suitable for bringing to the office. Therefore, studying the characteristics of specific breeds and their behaviors and how well they adapt to office environments would be relevant. In addition to understanding which pet-friendly practices could be more beneficial, future studies will also need to explore the business sectors in which their implementation is feasible, such as hospitality, retail, and services, among others.

6. Conclusions

Telework appears to be a feasible pet-friendly practice with potential benefits for employees. It is associated with higher work engagement and performance, possibly because it allows short micro-breaks during which employees can interact with their pets, supporting the replenishment of personal resources. These associations tend to be stronger among employees who hold more favorable attitudes toward teleworking.

Data Availability Statement

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

Ethics 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. Further, the ISCTE ethics committee for scientific research approved the study (PSI_19/2024).

Consent

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

Conflicts of Interest

The authors declare no conflicts of interest.

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No AI software was used in the development of this manuscript.

Endnotes

[1]In this study, organizational tenure was defined as the length of time participants had been working with their current primary organizational entity (their contracting organization), consistent with prior research on non-traditional work arrangements where tenure reflects the stability of the worker's ongoing professional relationship rather than traditional full-time employment.

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