

## Using Structural Equation Modeling to Measure the Impact of Young Adult-Dog Personality Characteristics on Dog Walking Behaviours during the COVID-19 Pandemic

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**Abstract :** Engaging in daily walks with a dog (f.e. *Canis lupus familiaris*) during the COVID-19 pandemic may be linked to feelings of greater social-connectedness and global self-worth, and lower stress after controlling for mental health issues, lack of physical contact with others, and other stressors associated with the current pandemic. Therefore, maintaining a routine of dog walking might mitigate the effects of stressors experienced during the pandemic and promote well-being. However, many dog owners do not walk their dogs for many reasons, which are related to the owner's and the dog's personalities. Note that the consistency of certain personality characteristics among dogs demonstrates that it is possible to accurately measure different dimensions of personality in both dogs and their human counterparts. In addition, behavioural ratings (e.g., the dog personality questionnaire - DPQ) are reliable tools to assess the dog's personality. Clarifying the relevance of personality factors in the context of young adult-dog relationships can shed light on interactional aspects that can potentially foster protective behaviours and promote well-being among young adults during the pandemic. This study examines if and how nine combinations of dog- and young adult-related personality characteristics (e.g., neuroticism-fearfulness) can amplify the influence of personality factors in the context of dog walking during the COVID-19 pandemic. Responses to an online large-scale survey among 440 (389 females; 47 males; 4 nonbinaries, Mage=20.7, SD= 2.13 range=17-25) young adults living with a dog in Canada were analyzed using structural equation modeling (SEM). As extraversion, conscientiousness, and neuroticism, measured through the five-factor model (FFM) inventory, are related to maintaining a routine of physical activities, these dimensions were selected for this analysis. Following an approach successfully adopted in the field of dog-human interactions, the FFM was used as the organizing framework to measure and compare the human's and the dog's personality in the context of dog walking. The dog-related personality dimensions activity/excitability, responsiveness to training, and fearful were correlated dimensions captured through DPQ and were added to the analysis. Two questions were used to assess dog walking. The actor-partner interdependence model (APIM) was used to check if the young adult's responses about the dog were biased; no significant bias was observed. Activity/excitability and responsiveness to training in dogs were greatly associated with dog walking. For young adults, high scores in conscientiousness and extraversion predicted more walks with the dog. Conversely, higher scores in neuroticism predicted less engagement in dog walking. For participants high in conscientiousness, the dog's responsiveness to training (standardized=0.14,  $p=0.02$ ) and the dog's activity/excitability (standardized=0.15,  $p=0.00$ ) levels moderated dog walking behaviours by promoting more daily walks. These results suggest that some combinations in young adult and dog personality characteristics are associated with greater synergy in the young adult-dog dyad that might amplify the impact of personality factors on young adults' dog-walking routines. These results can inform programs designed to promote the mental and physical health of young adults during the Covid-19 pandemic by highlighting the impact of synergy and reciprocity in personality characteristics between young adults and dogs.

**Keywords :** Covid-19 pandemic, dog walking, personality, structural equation modeling, well-being

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