Letter of detailed responses to Reviewer 1

Dear Sir/Madam,

Thank you very much for spending a great amount of time and effort reviewing our manuscript. Your detailed comments have helped us improve the quality of our paper.

We have addressed your points in our revised version. Please notice that in the revised paper, the parts that are highlighted in yellow are for correction on the old text, the parts highlighted in green are written anew. Below are our answers (in **bold**) to your comments (in *italic*).

Thank you for allowing me to give feedback on this interesting study. This is a very well written study, with a clear theoretical framework. The authors do touch upon the area of nature connection and disconnection, with the following references perhaps being of value:

Tam, K.-P. (2013). Concepts and measures related to connection to nature: Similarities and differences. Journal of Environmental Psychology, 34, 64–78. https://doi.org/10.1016/j.jenvp.2013.01.004

Barrable, A., & Booth, D. (2022). Disconnected: What Can We Learn from Individuals with Very Low Nature Connection?. International Journal of Environmental Research and Public Health, 19(13), 8021.

Samus, A., Freeman, C., Dickinson, K. J., & Van Heezik, Y. (2022). Relationships between nature connectedness, biodiversity of private gardens, and mental well-being during the Covid-19 lockdown. Urban Forestry & Urban Greening, 69, 127519.

The 4 hypotheses were very clearly stated, the data were accessible in the open data repository and the priors and operetionalisation were very explicit. The analysis was shared clearly and comprehensively.

Thank you very much for these kind comments and suggested references! These references are very useful, so we have integrated all of them into our manuscript to clarify and support our arguments. The revision is displayed as follow:

> "The economies of scale induced by urbanization have substantially driven the economic growth in urban areas, making urban inhabitants surpass the number of rural inhabitants in size and become the population holding the majority of economic power [7]. Nevertheless, urbanization simultaneously results in many adverse consequences for humans and nature. One such consequence is the separation of humans from nature, more precisely described as perceptual dissociation but not actual dissociation [8, 9], because resources and services provided by the natural ecosystems are *sine qua non* of urban existence [6]. In this case, strengthening people's connection to nature is critical, as it is an important factor in fostering environmental attitudes and behaviors and wellness [10]. In contrast, disconnected human-nature relationships will result in people's indifference and rejection of

environmental protection [11]. A clear reflection of such mindset is the emergence of climate change and biodiversity loss denialists."

"Zhang et al. [50] even describe a home garden as "ecological medicine" for the mental health of urban residents during the Covid-19 pandemic as it helps promote a comfortable and natural feel. Although the review does not mention the biodiversity level of urban home gardens, it implies the benefits of those gardens on increased urban biodiversity level. Another study of German and New Zealand populations implies the positive associations among nature connectedness, biodiversity of private gardens, and mental well-being during the Covid-19 lockdown [51]."

Overall this is a very interesting study. I have some concerns about the variable of 'comfortability' or 'comfort' and how this fits into the overall framework. The authors suggest that this may be related to nature connection or biophilia, but this needs further clarification.

Thank you for raising this concern! We employed the variable comfortability to proxy the urban residents' general evaluation of their houses comfortability, which is an important factor affecting their perceived benefits or costs of the plant diversity.

"The comfortability can be proxied by the respondents' self-evaluated feeling, which can reflect an approximation to the overall evaluation of the house's comfortability (or experienced benefits and costs of subjects and objects existing in the house, including pets and plants). Other scholars have used this proxying strategy to measure satisfaction [54-56]"

Regarding the relationship between the comfortability and biophilia, we have explained thoroughly in the Discussion, so we will summarize it briefly here. When urban people feel uncomfortable, they are likely to seek solutions to improve their comfortability. Hypothetically, people have an innate tendency toward nature, so gaining the connection to nature is deemed a way to improve their comfortability. Plants generally do not affect the house's cleanliness and demand caring efforts less than animals. Moreover, plant species being planted in the house or garden are mostly domesticated, significantly lowering the risks posed by plants. Thus, planting more types of plants is perceived as an adaptive strategy to improve life quality (i.e., comfortability), especially among those feeling uncomfortable at home.

"The effect of plant diversity on biodiversity loss belief is stronger among respondents feeling uncomfortable than those who feel comfortable, making the likelihood of acquiring biodiversity loss belief of respondents with different comfortability feelings converge when the plant diversity is high. This pattern might be explained by humans' innate tendency to seek connections with nature [77, 78]. Hypothetically, biophilia exists in people's mindsets, or more reasonably described, this kind of tendency might have been reinforced in humans' hard codes, like genetic information, through thousands of years of surviving and evolving within the natural environment [8, 79]. Thus, the information in the biophilic

environment can be easier to be integrated into the human mind, and the information in the non-biophilic environment is more likely to be differentiated for thorough evaluation [27, 30]. Differentiation is a more stressful process as it consumes more energy and involves many cognitive functions, possibly leading to poor information exchange with the surrounding environment and negative impact on human health, such as high blood pressure, lower short-term memory, and negative emotion [80]. Following this logic, it is reasonable to anticipate that respondents living in uncomfortable environments tend to have clearer perceptions of plant diversity's benefits than those with comfortable ones. Thus, they might view planting more types of plants as an adaptive strategy to turn their living environment into a more comfortable place [79], reinforcing the values of biodiversity and, eventually, the existence and significance of biodiversity loss. It should also be noted that, plant species planted in urban areas are mostly domesticated and selective, so they pose minimal risks to humans (e.g., poison and thorn)."

In closing, we truly appreciate the hard work and time that you have spent on this manuscript. Your comments have helped us improve the quality of our paper. We hope that the revised paper has met your requirements.

Please accept our sincere thanks for your great contributions to the improvement of higher studies on education and the overall advancement of sciences in the world.

Shall you have further comments, we look forward to hearing from you.

Best regards.