Response to Reviewer 3’s Comments

Comment 1:
The street is a vital part of the urban transportation vehicle network. It defines the capacity of the network and the travel costs for travelers. Besides the neighborhood characteristics and the physical characteristics of streets, the characteristics of networks are more direct and more human-oriented factors to the travel behavior and the route choice, e.g., the stochasticity, the environmental costs, etc, especially in the networks where electric vehicles are becoming popular. This is because these factors directly affect the interests of the travelers. More references are suggested to be reviewed.

Response:
Thanks for the suggestion! The revised paper has expanded literature review. (References [5-12], [59-63]). Knowledge gap and main contributions of this study were also summarized at the end of Section 2 (page 4-5, line 191-208).

Comment 2:
Explain each abbreviation the first time you use it, e.g., support vector machine (SVM).

Response:
Thanks for the comments! Abbreviations were checked.

Comment 3:
The authors claim that a systematic, multi-factor quantitative approach for measuring street quality with the support of multi-sourced urban data is proposed. However, according to the literature review of this study, such approaches have already been proposed. What is the difference between this study and the literature?

Response:
Thank you for the comments! The revised paper addressed these issues by summarizing knowledge gap and main contributions of this study in the end of Section 2 (page 4-5, line 191-208). The main contributions of this study are:

• use of the 5Ds framework discussed above considering the distinctive physical and cultural features of the Asian cities context. This study strives to re-integrate these five variables and examine them in the Shanghai context with the primary objective of providing a comprehensive evaluation framework
• Use higher data resolution to measure street quality and their relation to physical activities from people’s daily behaviors, portraying a more human-oriented approach.
• Considering that intersection density cannot fully describe street layout configuration, and the relationship between part and whole for pedestrian and the serial view experience of the pedestrian, this paper uses a description of street layout and network science to present a more realistic pedestrian path choice routing analysis.

Comment 4:
Since this article is a case study, the input data should be exposed in more detail.

**Response:**

Thanks for the suggestion! The input data has been explained in more detail:

- Some details of the variables have been added in the revised manuscript, section 3.
- Figure 3 (Sample of LBS data from Tencent), Figure 5 (Distribution of SVIs collecting points), Figure 6 (a schematic architecture of SegNet), Figure 10 (Distribution on POIs) were added for readers’ better understanding.
- As mentioned above, the descriptive statistics of individual variables have been added in section 4.1 (page 11-12, line 366-374).

**Comment 5:**

The hierarchical cluster analysis cannot guarantee an optimum solution, thus evaluating the quality of the solution is necessary. However, the evaluation in Section 4.3 may be a little too subjective. Is an objective approach available for the evaluating?

**Response:**

Thank you for the suggestion! To provide an objective approach for measuring the inter-rater reliability, a kappa value (using STATA) was utilized in revised section 4.3 (page 16, line 466 - 471) to measure the inter-rater reliability.

**Comment 6:**

The language must be improved. A native speaker may be helpful.

**Response:**

This manuscript has gone through a language proofreading by Elsevier Language Editing services before we submitted it toward IJERPH. Nevertheless, we agree that another round of language editing may be helpful. Thus, a native English speaker has reviewed and improved our revised manuscript. We hope the language quality of this paper would be better now. It would be our pleasure to make another round of language editing if the reviewer feels it is necessary.

We highly appreciate the reviewer taking the time to offer us comments and insights related to the paper. We would be glad to respond to any further questions and comments that you may have.