

Responses to Reviewer 3 Comments

Point 1: Lines 9 – 10: Suggest updating first sentence in abstract for easier reading. See suggestion “The aim of traffic flow design in commercial building space planning is to create a comfortable, easily accessible and identifiable spatial structure in a complex and changeable business environment”

Response 1: Thank you very much for your suggestion. We have changed the sentence to “The aim of traffic flow design in commercial building space planning is to create a comfortable, easily accessible and identifiable spatial structure in a complex and changeable business environment”.

Point 2: Line 14: The abstract mentions that this study selects the commercial project "Guangzhou Nanpu Times Commercial Building Space" planned and operated by the team. Does the team include authors of this paper? If so, you should make it clear or describe the team that it was planned and operated by.

Response 2: Thank you very much for your suggestion. Nanpu Times commercial space was designed and planned by the author's team, but after consultation with the team, we decided to remove this paragraph to prevent unnecessary controversy.

Point 3: Lines 18 – 20: The sentences are incomplete and as a result are not clear on the message. Consider rephrasing with complete sentences and consider replacing “So as to” with “To” or “Consequently” or “In order to”.

Response 3: Thank you very much for your suggestion, we have replaced the word "So as to" with "To".

Point 4: Line 26: Include a proper Segway between the first sentence in line 25 and this sentence on the development direction of commercial building space. It currently seems disjointed and does not provide ample background prior to this sentence.

Response 4: Thank you very much for your suggestion. We have added a linking relationship between the first sentence and the direction of the commercial space development to make the sentence seem more complete.

Point 5: Line 28: The sentence is incomplete. You may either combine with the previous sentence using a semi-colon or state that the development direction of commercial building space also brings challenges to the design of commercial building space traffic flow.

Response 5: Thank you very much for your careful reading and suggestions, we have rewritten the sentence to make it clearer.

Point 6: Line 29 – 31: The sentence is not clear, please consider rewriting.

Response 6: Thank you very much for your careful reading and suggestion, we have rewritten the sentence to make it clearer.

Point 7: Lines 31 – 33: You have not defined which commercial buildings are being

addressed in this paper, so focusing only on purchasing behavior is a bit premature. What if it is an office building performing general business operations that do not require commerce, does the issue of traffic flow design also apply to it?

Response 7: Thank you very much for your suggestions. It is our expression that is not strict enough. We have defined the commercial architectural spaces studied in this study to exclude office buildings.

Point 8: Lines 43 – 45: The sentence could be re-written.

Response 8: Thank you very much for your careful reading and suggestion, we have rewritten the sentence to make it clearer.

Point 9: Lines 45 – 47: Re-write the sentence, it is not too clear.

Response 9: Thank you very much for your careful reading and suggestion, we have rewritten the sentence to make it clearer.

Point 10: Lines 49 – 52: Re-write the sentence.

Response 10: Thank you very much for your careful reading and suggestion, we have rewritten the sentence to make it clearer.

Point 11: Line 93: Post occupancy evaluation (POE) does not include the use of scientific instruments. It only includes questionnaires/surveys and expert interviews. However, post occupancy evaluation and measurements (POE+M) a method established by the team at the Center for Building Performance (CBPD) using the NEAT cart uses instruments. You should consider restating the claim from POE to POE+M and citing work by the CBPD.

Response 11: Thank you very much for your suggestion. We have read through the literature and found that, as you say, POE theory does not include the use of scientific instruments and that POE+M is an extension of POE. Our presentation did mislead the reader. Only traditional POE was heard in this study, and we have revised this part of the presentation.

Point 12: Line 110: Is the statement that only a few scholars have focused on commercial building space contrasting the earlier write-up in line 107 where research studies for POE in offices is mentioned?

Response 12: Thank you very much for your careful reading. Our previous lack of rigor in expression has been added to the introduction section of the study to define the commercial space studied in this article, as in response 7, excluding office buildings.

Point 13: Lines 168 – 174: Re-write the sentence, it is not clear and difficult to understand.

Response 13: Thank you very much for your careful reading and suggestion, we have rewritten the sentence to make it clearer.

Point 14: Lines 165 – 167: You stated, “Through expert interviews and using AHP in conjunction with its own experience, it determines the individual evaluation indicators of the kinetic design, and through matrix scoring and quantitative analysis, determines the weight values of each index.” Does this mean the AHP weighting of the criteria was conducted by the authors?

Response 14: Thank you very much for your careful reading. It is our previous expression that was not rigorous enough, and the authors did not redefine the criteria for AHP weighting. We have rewritten the sentence to make it clearer.

Point 15: Lines 184 - 187: “The Lichter scale method is used to design and distribute the questionnaire for evaluating the satisfaction of the commercial space of Nanpu Times in terms of movement lines, and to obtain the satisfaction scores of each index to obtain the comprehensive evaluation results (Figure 4).”

Explain which parts of the Lichter scale methods were used to design and distribute the questionnaire. If the full Lichter scale method was utilized, explain how it was used as a research method in this study

Additionally, describe the profile of the respondents of the POE questionnaire and the recruitment method utilized, and rationale for the recruitment

Response 15: Thank you very much for your careful reading and suggestions. It is our previous expression that is not complete. We have described in chapter 3.8 of the article how the Likert scale was designed; In chapter 3.9, the profile of the POE questionnaire respondents and the recruitment methods used, as well as the rationale for recruitment, respectively, in addition to a complete description of the analysis of the respondents in chapter 4.1.

Point 16: Lines 195 – 196: “Referring to the application principle of AHP, the satisfaction evaluation index system of Nanpu Times traffic flow is divided into four levels: target layer, criterion layer, factor layer, and index layer”

Are you adapting the AHP method? If you are adapting it/modifying please say so, because the AHP by Saaty uses the levels of goal/objective, main criteria, sub-criteria, sub-sub criteria, n level criteria, and alternatives as the final level. Your levels of target layer, criterion layer, etc., are confusing. Also, you may define how your own four levels relate to the main AHP levels by Saaty.

Also, cite the application principle of AHP that is being referred to, or define it.

Response 16: The traffic flow satisfaction evaluation index system in the study follows the stratification principle of Saaty, our destination layer corresponds to the goal/objective in the Saaty stratification, the criteria layer corresponds to the main criteria, the factor layer corresponds to the sub-criteria, the index layer corresponds to the sub-sub criteria. However, the stratification name draws on "Dong, M. Post-occupancy evaluation of large commercial buildings in Shanghai" and "Qian, L. Post-occupancy evaluation of commercial space in Beijing Metro". In the study of commercial space, the stratification names were adapted to the study objectives. Also, we have added a definition of AHP to the literature review section of the study.

Point 17: Line 220: “For the three-layer evaluation factor set constructed above, the 1-9 scale method (Table 1) was adopted for each element layer by layer to obtain the judgment matrix H.”

State that it is the Saaty scale of pairwise comparison and cite.

Note: There needs to be significant overhaul of the grammar even within figures. For example, figures 6, 7 and 8 should be weight not “weigh”.

Response 17: Thank you very much for your careful reading and suggestions. We have changed the word "weigh" to "weight" in Figures 6,7,8.

Point 18: Lines 273 - 281 could be rewritten to be more succinct and clearer. For example, why did you call it POE methodology theory rather than just say POE methodology?

Response 18: Thank you very much for your careful reading and suggestions, we have rewritten the sentence to make it clearer.

Point 19: Lines 318 - 326 are very confusing. You make reference to figure 10 which illustrates respondents’ profile and responses for transportation traffic modes. However, I am unsure where the other indexes including “evaluation of roundness”, and traffic flow index came from in figure 10? If it is somewhere else, please reference it.

Response 19: Thank you very much for your careful reading. We were not clear enough in our labeling. The reference to "evaluation of roundness" and traffic flow index is from Figure 11, which we have now clearly labeled, and can find the data summarized in Table A2.

Point 20: Line 363: Is it “each index inaccessibility is particularly important” or is it supposed to be each index in accessibility?

Response 20: Thank you very much for your careful reading and suggestion. We have changed this sentence to "As accessibility has the highest weight score, each index is critical." to make it easier to understand.

Point 21: Line 365: “Based on the principle of being people-oriented” what principle? From where? Please cite. Stating principles and theories without references or definition is a common mistake in this paper. Also, explain how from the Principle of being people-oriented, the traditional mixed mode of people and vehicles is no longer applicable to modern commercial building space. Also elaborate on the relationship with the inaccessibility index.

Response 21: Thank you very much for your careful reading and suggestions. Firstly, we have added references to the people-oriented principle to make the study more rigorous. Secondly, to complete the study, we have added why the traditional model of mixing people and vehicles is no longer applicable to modern commercial spaces.

Point 22: Lines 441 - 442 counters your claim that POE can be applied to the commercial building space traffic flow design. It casts doubts on the research study

and results of the study. I would recommend explaining the types of commercial building designs that your research study may not apply and/or the types it can be. Right now, you just cast a wide net that it may not apply to all commercial building spaces and didn't explain which types and rationale for why it won't apply, beyond it being a case study. Case studies can be transferable, and a few may be generalizable. What aspects of your case study can be transferable and which aspects can be generalizable? That would be good in the methodology. A deeper analysis of your case study. I would recommend reading Groat and Wang (2002) titled "Architectural Research Methods" chapter on case study to help.

Response 22: Thank you very much for your careful reading and suggestions. Our expression was not rigorous enough, and we have now rewritten the sentence to describe the construction of the satisfaction evaluation index system in the case study. The weight analysis method, the questionnaire method, and some numerical statistical analysis methods can be extended to similar commercial building spaces to make the study more complete.

Point 23: Additionally, you state "Secondly, the total number of questionnaires is not very sufficient." Why is it not sufficient and how does the limited number influence your results and the case you're building? Just saying it is not sufficient is not building confidence in your research. What is your metric you're using for sample size and how does the total of both your paper and online survey not meet the ideal sample size? Is there anything about the sample that still reflects the population from where you drew this sample from? For example, the population that utilizes commercial spaces is primarily 18–50-year-olds with xxx professions and sex as is reflected by this sample.

Response 23: Thank you very much for your careful reading and suggestions. Our original thought was that a larger sample size would make the data results more supportive. However, by analyzing the data from the study, we found that the sample size was adequate and refined the reliability analysis, as in Singh A S, Masuku M B's article "Sampling techniques & determination of sample size in applied statistics research: An overview." The description here may contradict the reader, so we decided to remove this statement. In addition, Chapter 3.9 of the study reflects on where the population sample was drawn from, and the first paragraph of Chapter 4.1 has a description of the sampled population.

Point 24: Results

I would also suggest rewriting your results section. Have a section for results/findings, and another section for discussion. Most of the write up currently in the results section is a discussion.

Put your findings on the POE questionnaire from respondents in the results. Also put the findings if the AHP analysis in the results. You should also consider including in the discussion how the sociodemographic characteristics of the POE respondents influences the evaluation of factors such as accessibility. Lastly, did you mention the sociodemographic of the experts who helped weight the criteria? If you

did, please make it clearer if you did not, please include it.

Include future work/next steps of the research study in the discussion section.

Response 24: Thank you very much for your suggestions. We have taken this issue very seriously and rewritten the results section. Firstly, we divided the results section into two parts, the results/findings section and the discussion section, as in 4.1 and 4.2. Secondly, we placed the POE questionnaire results findings and the AHP results analysis in chapter 4.1; our discussion of future research was too superficial, so we refined the future work/next steps of the study in the discussion section. Thirdly, we neglected to evaluate factors such as accessibility by sociodemographic. We have added sociodemographic to section 4.1 of the study and found that the large proportion of females, mainly from the 18-25 age group in Guangzhou, would be more likely to travel by bus and subway; this may make this group more concerned about the location of bus and subway arrival points. To address this, we looked at the satisfaction survey scores and found that they were the most satisfied with the bus and subway arrival points. Fourthly, we did omit the sociodemographic of the experts and have added to this in section 3.5 of the study.

Point 25: Your conclusion should be stronger than its current form. Reiterate the problem and case, briefly mention the methods used and how it addresses the gaps, briefly mention the findings, and the implications/outcomes of the study.

Response 25: Thank you very much for your suggestions. We have rewritten the conclusion section to restate the problem and the case, briefly mentioning the methods, findings, and the study implications to make it stronger than its current form.

Point 26: Discussing bias: it may be beneficial to discuss the authors' biases because the commercial building analyzed in this study is developed by the authors. How was the bias mitigated/minimized in this study?

Response 26: Thank you very much for your suggestions. By choosing cases where the authors were involved in the design, it was easier to access various resources on the subject of the study. A possible follow-up study makes it easier to make in-depth observations and analyses of the surrounding pedestrian, traffic, and housing conditions to obtain a clearer picture of the improved project. However, after discussion, we decided to delete this sentence to reduce unnecessary misunderstandings.

Point 27: Ethics: was IRB approval gotten for the human subject's aspect of the research? Or permission sought in some other way? If so, please explain because it is not stated in the paper.

Response 27: Thank you very much for your suggestions. Ethical issues are approved by Specialized Committee on Academic Ethics and Ethics on Science and Technology of Guangdong University of Technology. In the study see: Institutional Review Board Statement.

Point 28: Methodology: Additionally, the mixed methods of POE and AHP is currently not clear and would need significant clarification on how they worked together - I have an understanding but it is not immediately clear. For example, what was in the POE questionnaire - show an example of the questions or include the full questionnaire as a supplemental. How did the questions inform the AHP criteria selection? It is written but not easy to understand.

Response 28: In this study, POE was used to evaluate the traffic flow design of Nanpu Times, in which the AHP method was applied. In the first step, the satisfaction evaluation system is determined through expert interviews and literature references. In the second step, the index weights of each layer were calculated through expert interviews using the 1-9 scale method. In the third step, the mean satisfaction score of the index layer was calculated by using a 5-point Likert scale through a questionnaire survey. In the fourth step, the index scores of each layer were calculated by combining the above two points. Finally, according to the membership function table for the Nanpu Times traffic flow satisfaction is evaluated and graded. This can be seen in the following visualization, i.e., Figure 4 in the study.

