

# Response to Reviewer 4 Comments

## 1. Summary

Thank you very much for taking the time to review this manuscript. Below are the detailed responses, along with the corresponding revisions highlighted in track changes in the resubmitted files

## 2. General evaluation

| Questions                                                                                                                                                               | Reviewer's evaluation                                     | Responses and revisions                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Is the content succinctly described and contextualized with respect to previous and present theoretical background and empirical research (if applicable) on the topic? | Can be improved                                           | We have improved the introduction section to remark how our study, which is using a novelty method such as the co-creation, can compile qualitative information in a more exhaustive way that other methods more traditional such as the surveys. |
| Are the research design, questions, hypotheses and methods clearly stated?                                                                                              | Can be improved                                           | We did not receive a specific comment on this regard. We have reviewed the whole document and we did not find any relevant change to apply in the section material and methods                                                                    |
| Are the arguments and discussion of findings coherent, balanced and compelling?                                                                                         | Can be improved                                           | We have provided arguments on this regard                                                                                                                                                                                                         |
| For empirical research, are the results clearly presented?                                                                                                              | Can be improved                                           | We have provided arguments on this regard                                                                                                                                                                                                         |
| Is the article adequately referenced?                                                                                                                                   | Can be improved                                           | We have improved the introduction section to facilitate a better understanding of the context of this study for a better understanding of the contributions made to the academic community                                                        |
| Are the conclusions thoroughly supported by the results presented in the article or referenced in secondary literature?                                                 | Can be improved                                           |                                                                                                                                                                                                                                                   |
| Quality of English Language                                                                                                                                             | The English is fine and does not require any improvement. |                                                                                                                                                                                                                                                   |

### **3. Point-by-point response to Comments and Suggestions for Authors**

#### **Comments 1 and 2**

Firstly, the study lacks a comprehensive literature review of related research in the field. As a result, it is impossible to assess the novelty of the research content or its contribution to the academic community. Secondly, the sections on the research background and significance are insufficiently developed and fail to provide a strong foundation for the study.

#### **Response 1**

Thank you for pointing this out. We agree that some improvements could be needed and for this reason we have modified the introduction and added new references. As you could find now, our literature review starts with an exhibition of a challenge in the transport field in Europe related to environmental and economic issues and how some strategies have arisen to this regard such as the autonomous vehicles (AV). We continued exposing how AV are a technology solution that is currently demonstrated in different places and the existence of a need to consider not only technical aspects but also social issues in the expected transformation of the transport area. At this regard, we introduced some researchers made with stakeholders and citizens where it can be found that a diversity of methods has applied but the co-creation which is the method used in our study is less frequent arguing that the main reason can be the lack of standards methods. Finally, we mentioned some researches in which this method has been applied in the field of autonomous vehicles and provide an example of approach in which our study has been based to ensure that this is replicable method to be applied in other fields; which demonstrate that our study is supported by a proper method that can help to obtain the perceptions of citizens on how they imagine the future of autonomous mobility.

#### **Comment 3.**

Thirdly, the numbering and organization of the chapters throughout the manuscript are disordered, making it difficult to follow the structure.

#### **Response 3**

Thanks for bringing this improvement. We have amended the two wrong numbering and the wrong section 3 is now updated by section 4 (line 354) and the wrong subsection 4.1 is now updated by subsection 4.2 (line 412). The term “conclusions” have replaced the term “discussion” in the last section from the article.

#### **Comment 4**

Finally, the most significant contribution of this study should be presented in the penultimate chapter. The authors should place more emphasis on this section, as the current description is too broad and lacks innovation.

#### **Response 4**

Thank you for your concern. However, we consider that our article is well structured and the findings are based on the application of a suitable and novelty methodology (i.e. co-creation) which has allowed to identify citizens' needs and expectations on autonomous mobility solutions in a more detailed way than other methods such as surveys. Co-creation is a method that can be used for different purposes as for example the co-design of products or future mobility concepts. A detailed description of the methodology used in our

research can be found in section 2 and to assure the convenience and the innovation of this process for data collection from citizens; a brief summary is included also in this document.

The co-creation is an iterative process that searches the ideation of solutions. This starts with an initial phase that intends participants are more aware of the problem to solve and to emphasize with the persons that suffer the mentioned problem. Second phase is the compilation of ideas from participants through a guided structured and the support of a moderator to ensure the consistency of the data provided. Also, the role of the moderator in this phase is to stimulate participants' thinking and enrich the research findings through the compilation of views. A final phase concludes the activity with reflections among the whole participant sample.

Our methodology approach has allowed that the participants recruited, who could not have any pre-existing knowledge on autonomous vehicle, started the ideation of solutions (i.e. mobility services with autonomous vehicles for the areas where the participants live) having a minimum level of knowledge on the technology. Also, the suggestions provided were the result of reflections on the needs and travel behaviour of persons that have different age, gender, incomes and live in rural, suburban and urban areas. Specifically, the 147 participants provided their ideas after one hour and half engaged to the activity and having enough time to answer this type of questions: *What would this / these vehicle (s) be?, What kind of mobility service (s) will it / they provide?, What will these services allow you to do that you cannot do now?, What kind of a person might need or use this service?*

Ideas gathered were classified in a methodical process that allowed to ideate 7 archetypes of vehicles in based to a set of variables (detailed in section 3.1) but also the thoughts gathered could be analysed to determine the perceptions of citizens involved in the study on the transport system with automation and in relation of autonomous vehicles for passengers and autonomous vehicles for freight. A final analysis allowed to relate co-created ideas by demographic group considered the sample stratification from the study that involve people that have different mobility needs and behaviour due to age, gender, income, health conditions, driving capacity and living in different locations.

Whereas section 3 provides the graphs obtained from the data analysis, section 4 describes the findings above mentioned. Consequently, the article does not lack of innovation and neither section 4. Finally, the size of this section 4 is only 2 pages why we don't consider this as too broad.