Holistic Personal public Eco-mobility

D5.4.1

Pilot Realization Report – Basque Country. First Version

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Purpose of the Deliverable

The current deliverable D5.4.1 “HoPE Pilot Realization Report-Basque Country” aims to report the activities carried out to evaluate the HoPE MnRP application for the city of Athens, along with the first evaluation results. The document is divided in 3 parts. The first one describes the pilot activities undertaken during the overall evaluation process, including the internal testing of the HoPE MmRP application, the focus group execution and finally the dissemination to real users. The second part of the document presents and discusses the evaluation results extracted by the mentioned evaluation tools, whereas the third and last part of the document includes the evaluation process and results.

Document History

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List of changes

Needs to indicate te number of the participants (whenever possible)	Mentioned and remarked in page 20.
Some references should be corrected	Addressed in page 4.

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About HoPE

"A platform for secure payments and smart multimodal trip planning"

The main purpose of the HoPE project is to advance the role of public transportation systems through an open platform. This allows combining the management of fare payments with Intelligent Transport Systems (ITS). The overall platform is user-oriented, making them aware about public transport and eco-mobility. It will also provide them with a significant mix of services including info-mobility, trip planning, ticket reservation, fare calculation and mobile payments. As such, HoPE is a holistic system, focusing the attention on the 'bigger picture' and how all its parts are interconnected.

The HoPE platform will implement secure and accessible payment procedures for fares, and provides travellers with smart trip planning. For the latter we'll enhance one or more key metrics associated to their trip (fare, duration, emissions).

The HoPE platform will be piloted and tested in three European locations (city of Coventry in UK, city of Athens in Greece and Basque Country region in Spain) and will be applied to a wide set of local and regional means of transport (buses, undergrounds, railway lines, car-sharing, bike sharing, transport on demand, etc.).

Glossary

HoPE	Holistic Personal Public Eco-Mobility
API	Application Programmable Interface
MLC	Asociacion Cluster de Movilidad y Logistica de Euskadi
MLC-ITS	Asociacion Cluster de Movilidad y Logistica de Euskadi
APP	Application

1. Introduction

1.1. Purpose of this document

This deliverable describes the progress achieved so far in the framework of Task 5.1 and Task 5.4. According to the description of work, Task 5.1 aims at coordinating the three pilots carried out in HoPE, undertaking the necessary technical preparation activities regarding the infrastructure and other necessary equipment. It also needs to provide the necessary training of the personnel of public transport operators that will make use of the HoPE services. Task 5.4 aims that the HoPE platform will be deployed, run, and tested by the task participant, with the coordination and cooperation of Task 4.4 (for the deployment and technical assistance) and Task 5.1 (for the preparation and the coordination of the activities). According to the pilot plan, defined within Task 2.4, the tests will be conducted in the Basque region, using a subset of the public transportation network and exploiting any traffic and transport data provided by MLC, as well as information gathered by test vehicles where HoPE services and applications will have been integrated. Overall the testing and trials activities will realize specific predefined scenarios as described in Task 2.4.

The current document discusses the evaluation actions undertaken in the framework of Task 5.4, according to the pilot realization plan defined in the framework of Task 5.1, mainly focusing on the 1st pilot evaluation cycle, along with the first evaluation results.

1.2. Approach: how this deliverable will be addressed

This document is prepared for those transport operators, who are participating in the HoPE and aims to provide them with an overview of the executed activities of the pilot realization and inform them on the evaluation results on the HoPE Trip Planner Mobile application obtained so far. Also this document aims to be used as a start to further evolve the evaluation of the HoPE Trip Planner Mobile application. Finally, the technical partners can utilize this document to understand possible improvements on the HoPE Trip Planner Mobile application.

1.3. Audiences

The intended audiences of this document are: (i) all the stakeholders of the HoPE project, so as to overview the piloting process and results towards the HoPE mobile applications and platform; (ii) the pilot operators who will use this document in order to understand the initial evaluation results of the HoPE Trip Planner Mobile application; and (iii) the technology providers in order to understand possible improvements on the HoPE Trip Planner Mobile application.

2. Pilot activities

2.1. Internal testing

The Route Planner has been the first mobile application developed in the HoPE project. Based on the first prototype, the consortium members performed internal testing to validate the usability, performance, and graphic user interface of the mobile application, among other aspects.

To report results on the internal testing, we used the table template below which was distributed with the aim of harmonising the collection of feedback from the different partners and allowing the project to follow-up on the actions taken to correct or improve the identified failures:

Application aspect	Focus group participant report

Table 1.Table template for internal testing feedback collection.

The internal testing results are presented later in this document, in Section 3.1.

2.2. Focus group

The aim of the focus group is to test the HoPE Trip Planner mobile app and provide their assessment on different aspects. The focus group tested the initial versions of HoPE Gipuzkoa, and later on, they reported their comments and remarks about the application.

This focus group is integrated by 8 participants, 5 of them are MLC employees and 3 of them volunteers. Attending to the description of these participants, here below, we can see the demography of the participants.

FOCUS GROUP	MLC EMPLOYEES	VOLUNTEERS	**TOTAL**
FEMALE	4	1	5
MALE	1	2	3
TOTAL	5	3	**8**

Table 2. Focus group partipants demography

The motivation for the focus group is to obtain more elaborated feedback than the one provided by an on-line survey included in the mobile application. It is also to help on the detection of where and why the failures are produced before the dissemination of the application to real users.

MLC requested the email addresses of the members of the focus group, and distributed the app to them via the TestFairy. TestFairy[1] is a beta testing platform for mobile apps allowing developers to see videos showing users behaviour, providing information on the exact test that was done, including CPU, Memory, GPS, Network, and a lot more. The email also explained them how to install the application and how to use it.

[1] https://testfairy.com/

2.3. Dissimenation actions

Several dissemination activites have been undertaken towards the HoPE TRip Planner mobile app with the purpose of engaging users and having more feedback (out of the focus group) of the mentioned application. The following communication channels and actions have been used:

- **Leaflets distribution:**

Leaflets of HoPE project were distributed at the Euskadi ITS Congress (November 2015).

- **Project presentation to relevant stakeholders:**

The project has been presented to relevant stakeholders such as the San Sebastian City Council, the San Sebastian Tourism Department, and the Transport Authority of Gipuzkoa and others.

- **Via Facebook**:
  - HoPE Basque Pilot webpage:

Post publication in Spanish with the news of the release of the Trip Planner application and the link to download HoPE Gipuzkoa app.

"¿Quieres saber cómo llegar en transporte público a tu destino? Descárgate esta app. gratuita y danos tu opinión. Es gratis, es útil y formarás parte del equipo de voluntarios de esta prueba piloto que se está desarrollando en diferentes ciudades de Europa. No olvides dar tu opinión desde la app. ¡Gracias por colaborar!"

"¿Would you like to know how to get by public transport to your destination? Download this free app. and give us your opinion. It is free, is useful and you will be part of the team of volunteers of this pilot that it is being developed in different cities of Europe. Don't forget to give your opinion from the app. Thank you for your cooperation!"

Figure 1. Hope Basque Pilot Facebook website.

Furthermore, a new button has been included on the Facebook webpage that allows downloading the app directly from this site:

Figure 2. Button to download the application.

- Clúster de Movilidad y Logística, MLC ITS Euskadi

MLC ITS's Facebook website has shared the post of the release of the app on its Facebook webpage with the aim of engage users. The followers of this Facebook webpage are related with transport and logistics area:

"Anímate a probar esta app. gratuita para planificar tu viaje en transporte público. Cómo llegar a tu destino incluso combinando diferentes medios. Es una prueba piloto de un proyecto europeo en el que estamos participando. No olvides dejar tus comentarios para ayudarnos a mejorarla. ¡Gracias por tu colaboración!"

"We encourage you to try this free app. to plan your journey by public transport. How to get to your destination even by combining different transport modes. It is a pilot test of a European project that we are participating. Don't forget to leave your comments to help us to improve it. Thank you for your collaboration!"

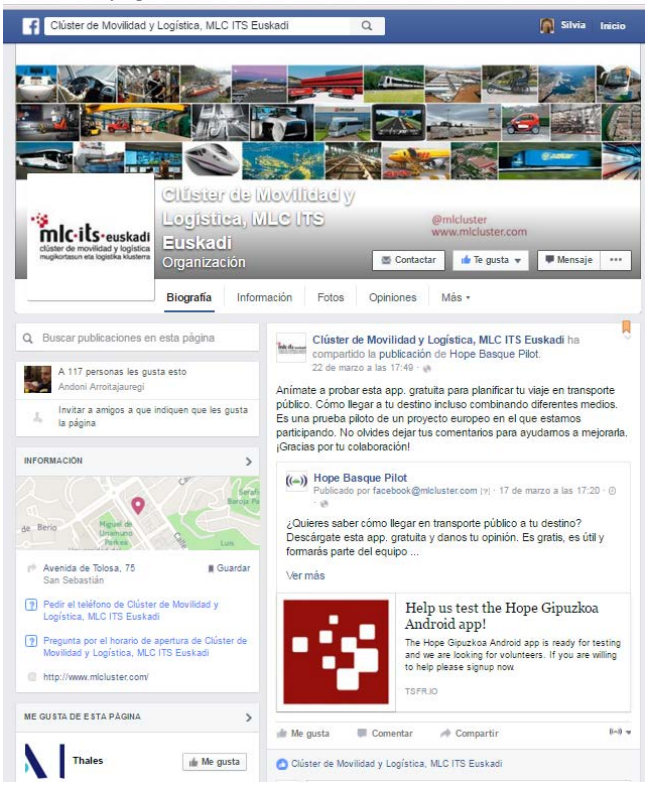

Figure 3. Post in MLC-ITS Facebook webpage.

- Individual users have shared the post of the release in their personal Facebbok webpages:

s

Figure 4. Individual facebook users posts

- **User engagement session at University of Basque Country:**

On 16 March 2016, MLC carried out a demo session at the University of Basque Country to engage volunteers to test the app and invite them to participate in the different cycles of the pilot. The session was held with the students of the Master of Transport Systems.

This session lasted about one hour, divided into three main parts:

1. HoPE project presentation explaining the different timelines of the pilot cycles as well as the services to be implemented in each one.
2. HoPE app demo in which the participants where asked for downloading the app and testing with their usual trips.
3. Feedback and recruitment for the next cycles: students were invited to provide their feedback and to participate in the next cycles.

The session was succesfull in terms of user engagement.

- **MLC-ITS periodic Newsletter**

On 23 March 2016 MLC announced in its periodic newsletter the possibility of downloading the Trip planner app. The announcement tried to attract potential users for the app.

mlc·its·euskadi
clúster de movilidad y logística
mugikortasun eta logistika klusterra

Newsletter, 23/03/2016 *Síguenos en:*

I+D+i. PROYECTOS DEL CLÚSTER

Participa. Piloto de planificación de rutas de transporte público. Proyecto europeo HOPE
Si tienes un dispositivo Android, te animamos a probar esta aplicación gratuita que está en su fase inicial de testeo. No sólo podrás planificar tus desplazamientos en transporte público (con información de todos los operadores de Euskadi), sino también conocer las funcionalidades actuales y previstas, entre ellas, integración de eventos y lugares de interés de las ciudades; y pago por móvil. La aplicación también se está probando en Atenas y Coventry.

- **Participa y gana.** Además, entre los usuarios, se sortearán **móviles con tecnología NFC** para utilizar el pago móvil.
- No olvides dar tus opiniones a través de la propia aplicación. ¡Nos ayudarás a mejorar!
- El Clúster forma parte de este proyecto europeo en el que también están colaborando la Autoridad Territorial de Transporte de Gipuzkoa, el Ayuntamiento de Donostia y Donostia Turismo.
- Puedes descargar la aplicación aquí.

Figure 5. HoPE project announcement in MLC-ITS´s newsletter.

"Participate. Pilot of public transport routes planning. HOPE European project.

If you have an Android device, we encourage you to try this free application that is in its initial phase of testing. Not only you can plan your journey on public transport (with information on all operators of the Basque country), but also know the current and planned features including integration of events and attractions of the cities; and payment by mobile phone. The application is also being tested in Athens and Coventry.

•Take part and win. In addition, among the users, we will raffle mobiles with NFC technology to use mobile payment.

• Do not forget to give your opinion through the application feedback. Help us improve!

•The Cluster is part of this European project in which are also collaborating Transport Authority of Gipuzkoa, San Sebastian City Council and Donostia Tourism.

•You can download the application here."

2.4. Pilot execution plan

The pilot execution was divided in two different stages, as the HoPE Trip Planner Mobile app had different versions too:

- **1st stage:**

  The first version of the HoPE Trip Plannet Mobile app was internatlly tested by the consortium members and by the focus group. This first version was using Google API for accessing Google Directions services, as the HoPE platform Route Planner service integration with HoPE Trip Planner Mobile application was not ready at the time.

  In this first stage the main objective was to test the user experience with the application in terms of usability, interface, responding time of the application… Therefore, the usage of Google Directions did not affect the overall process. It also helped us saving valuable time and efforts as at the same time that the focus group was testing the usability of the application, the consortium was focused in the integration of the HoPE platform Route Planner service with the HoPE Trip Planner Mobile app.

  This first version of the application was sent to the focus group members using TesTFairy.

- **2nd stage:**

  The second stage started once the HoPE Trip planner service was fully implemented, and integrated in the HoPE Trip Planner Mobile app on the HoPE platform.
  The focus group was informed by email to download the application from the following link: https://tsfr.io/7v3bhj. This webpage allows to download the application pressing a button or through a QR code.

  In this stage the focus group's actions were related to test the accuracy of the provided routes in order to identify failures and determine the causes to improve the algorithms.

  The link was also distributed through the previously mentioned channels (Facebook, MLC ITS EUSKADI newsletter, …).

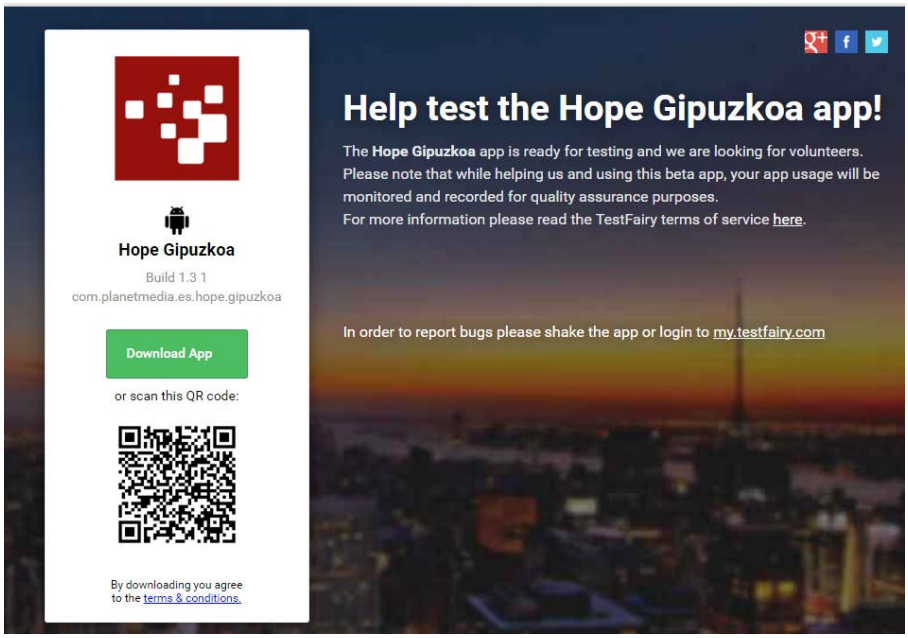

Figure 6. HoPE Gipuzkoa mobile application´s download webpage.

Finally, a mobile-friendly short survey was included in HoPE Gipuzkoa´s application. Thus, based on their application usage experience the users were able to assess HoPE Trip Planner Mobile app in terms of usability, usefulness, reliability, and cost-effectiveness. The survey was integrated with the logging module of the HoPE platform where its results referring to the HoPE mobile application usage were stored[2]. Along with there, we also stored a number of log data allowing the crosschecking of the results.

[2] The survey questions along with the log data description are presented in detail in D5.1.1.

3. Pilot results

3.1. Internal testing results

During the internal testing, the consortium members detected some failures prior to the the focus group actions execution. The issues presented below have been already addressed by the technical partners.

Application aspect	Focus group participant report
General	With the first launch of the application the press buttons were not working properly, it seemed that you have to be very precise while pressing the buttons. In addition HoPE logo was blurred in the in the fisrt screen of HoPE Gipuzkoa.
Translation	Some translation mistakes were found.

Table 3. Internal testing results

3.2. Focus group results

For the Basque Country pilot, the focus group made an accurate testing of the front-end and performance of the application, passing through all the screens and sections of the Trip Planner. Therefore, the remarks reported were clasified following the different sections of the application:

- General
- Translation
- Save trip Pop-Up
- New trip screen
- List of possible trips
- Guide map screen
- Feedback screen

Most of the comments were related to suggestions on usability aspects of the application. Even though, some failures were found and reported to the consortium partners.

The results are shown below at the following tables, attending to the two stages of the focus group execution:

- **1st stage:**

The HoPE Trip planner Mobile app was based on the directions service provided by Google, the testing was done to check usability aspects:

Application aspect	Focus group participant report
Gereral	When the app is opened, the left menu sometimes is opened.
Save trip Pop-Up	The HoPE Trip Planner in Gipuzkoa gives the chance to the user to save the trip that searches frecuently, when introducing the name of that trip the keyboard wasn´t appearing automatically.
List of possible trips	It was suggested to include in the summary of the list of possible trips the number of transfers for each proposed trip.
Guide Map screen	You are in the map, with a specific zoom applied, you push the left arrow to go back to the summary of the trip (because you want to take a look of the info of the trip) and you want to come back to the map, you have to push “Guide” again. It should be great some kind of button like “Return to map” and come back to the map with the zoom you had applied before
Guide Map screen	It should be great if tapping any part of the path, it returns the info of that part of the trip and not only by tapping in the white circle where it starts
Feedcabak screen	If you put a note with stars, under the stars appears a message (agree, disagree…). If you scroll down in the window, that message moves also with the window.

Table 4. Focus group results. Stage 1.

- **2nd Stage:**

Once the HoPE Trip Planner was fully running and the project applications were using their own services, the focus group activities were mainly concentrated on testing the accuracy of the routes proposed by the application.

Application	Focus group participant report

aspect	
New Trip screen	Several origins and destinations were out of bound, even if they were inside project scope boundaries.
List of possible Trips	Sometimes, depending on the user preferences (least time, least walking distance, least number of transfers, least price), the proposed trips change and some of them not appear.
List of possible Trips	Routes accuracy: it has been noted that in certain routes the proposed options are not the most suitable according to the user experience.

Table 5. Focus group results. Stage 2.

The project is working on detecting the source of the failures to take the actions to improve the provided travel solutions.

3.3. User evaluation results

As a result of HoPE Gipuzkoa´s dissemination activities that have been carried out, several participants have downloaded the HoPE Trip Planner Mobile app. **In particular, 42 users downloaded the HoPE Trip Planner Mobile app**. This application includes a short survey where users can provide feedback of a variety of application aspects.

Figure 7. Number of users.

Below the figures of the results of the surveys, from a **sample of 20 surveys**:

1. **I have been satisfied with the route plans provided by the application:**

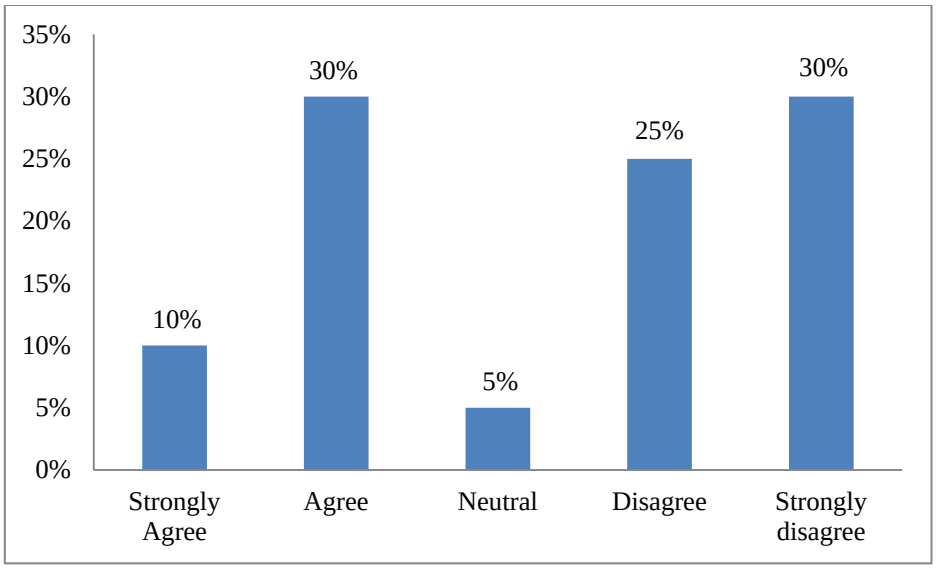

Figure 8. Survey results. Question 1.

This first question of the survey is about the route plans provided by the application. As this figure shows, it is not completely clear whether the proposed routes are accurate or not. It is true that 55% of the respondents disagreed with the provided routes, but despite this fact, 30% of them agreed. So even tough the general result is more oriented to the disagreement, for a third of the sample the routes where accurate.

The results of this first question reveal that there is still room for improvement on the route plans that the HoPE Trip Planner service is offering. As some of the results are good and most of them are not, it is required to know more information about the unsatisfying routes. So in order to extract this required extra information we plan to contact those users interested in further evaluation of HoPE mobile application, asking for more detailed information about the provided routes.

2. **The process for requesting a route plan has been straightforward:**

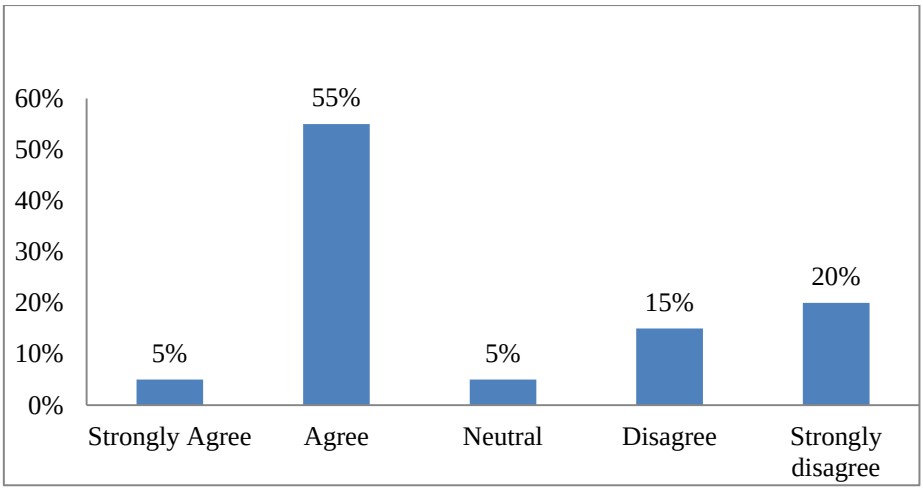

Figure 9. Survey results. Question 2.

The results towards the usability of the HoPE Trip Planner in Gipuzkoa are promising. As Figure 7 is showing, the 55% of the respondents agreed that the process for requesting a route plan was straightforward, so it can be stated that the application it is quite easy to use. However, it can´t be overlooked that 20% of the audience strongly disagrees with the process of requesting a route, so the reason of this disagreement should be analysed.

3. The use of the application motivated me to alter my transport mode:

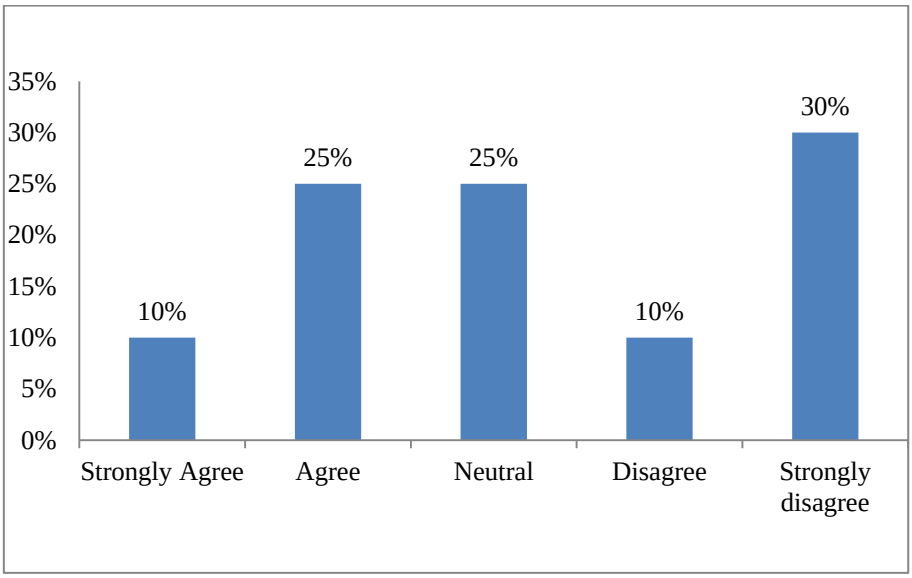

Figure 10. Survey results. Question 3.

The next question wants to assess the user opinion regarding the motivation to alter their transportation habits as a result of using the HoPE Trip Planner in Gipuzkoa. According to Figure 8, it can be stated that there is no a clear answer as the survey results are quite distributed over the 5 possible answers. Most of the answers reveal a negative feedback towards this question, and a quarter gave a neutral answer. Most of the evaluation participants were public transport users, therefore most of them did not alter their transport mode because they already used to travel by public transport.

4. **The option to get route planning with respect to several criteria (fastest, least number of transfers, etc.) has been useful.**

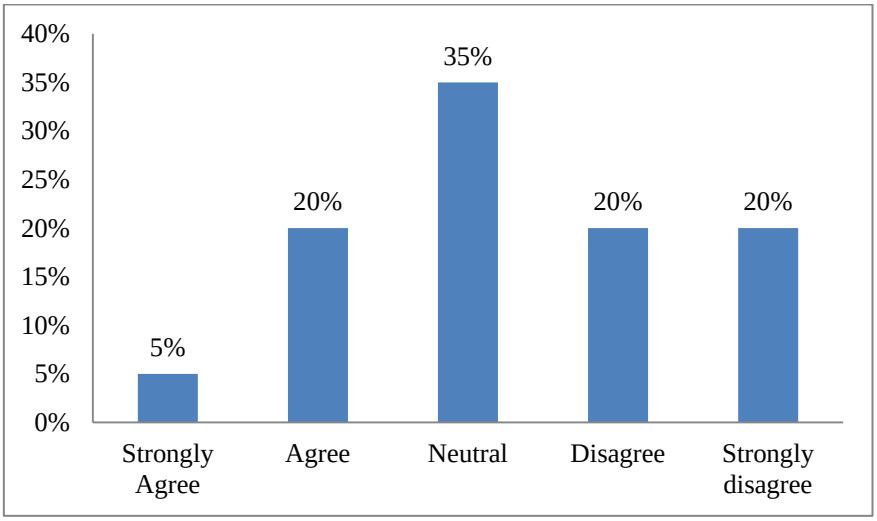

Figure 11. Survey results. Question 4.

Regarding the options to get the route planning, 35% of the respondents have neutral opinion about this question. 40% have answered a negative assessment, and 20% agrees that the proposed criteria are useful. It can be stated that according to Figure 9 we should contact the committed participants to get more information about this quite negative result. Furthermore, the focus group detected that sometimes, depending on the user preferences (least time, least walking distance, least number of transfers, and least price), the proposed Trips change and some of them were not appearing. So this negative feedback could be based on this fact.

5. I used public transport because of this application.

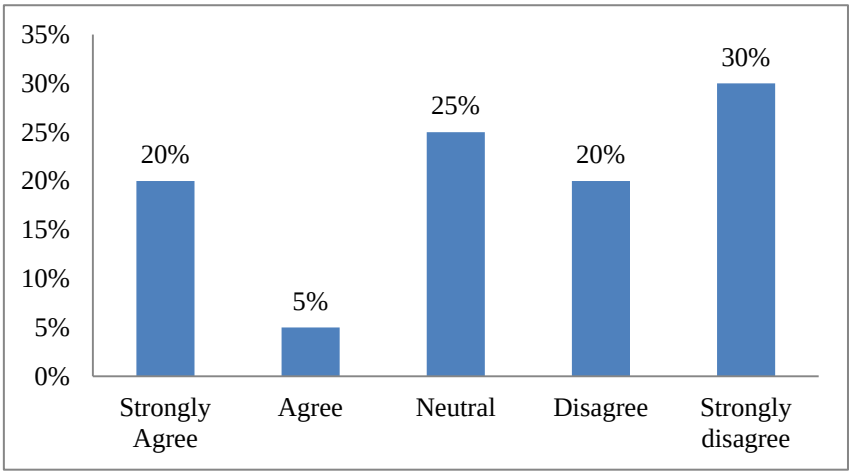

Figure 12. Survey results. Question 5.

As previously mentioned most of the participants already utilised public transport, that is why as Figure 10 is showing, half of the results have been negative, as they are not using the public transportation because of the app, since they used it before.

6. The information provided by the application has been accurate.

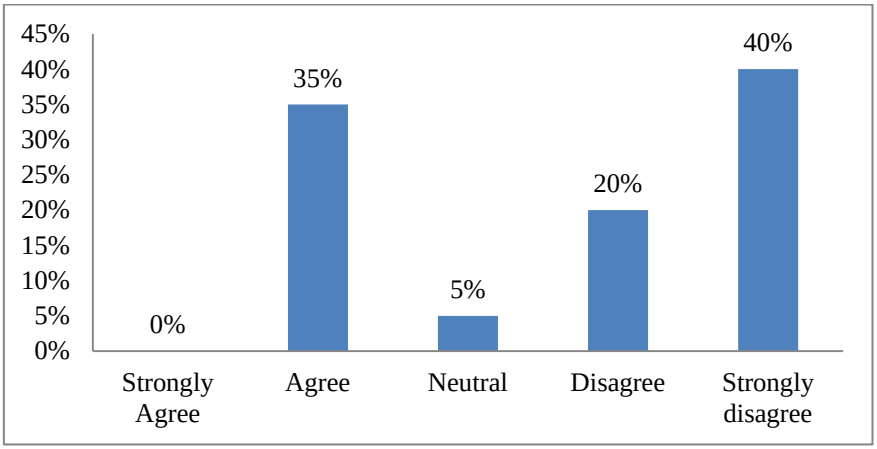

Figure 13. Survey results. Question 6.

Here we have another answer that is highly debatable; it is related to the data accuracy of HoPE Gipuzkoa. As figure 11 reveals, more than half of the participants disagrees or strongly disagrees. So it seems that during the testing period, the application was not showing fully accurated information. On the other hand, for more than a third of the sample the provided information was accurate, so it seems that in some cases the information was accurate. Once again, this question has to be further investigated and it will be good to contact the committed evaluation participants, asking for more information about the inaccurated results for the improvement of the HoPE Trip Planner Mobile app.

7. Would you like to participate further in testing this application?

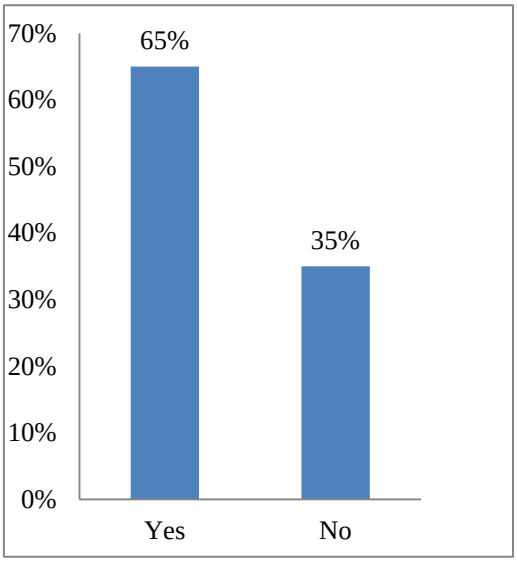

Figure 14.Survey results. Question 7.

As Figure 12 is showing, 65% of the participants responded positively to the invitation for further evaluating of the HoPE Trip Planner in Gipuzkoa mobile. As we have previously mentioned, we will contact those participants to investigate the negative answers that have been colleted.

4. Discussion

The overall execution process of the first mobile application of HoPE project, HoPE Trip Planner Mobile app, has been agreed with the whole consortium partners and the three pilots have followed the same evaluation framework.

This evaluation has covered the process from its early stage of the development of the application to its disseminationn and final evaluation by real users. This process has been seamless and allowed the involed parties of the project to follow closely the evolution process.

At first the evaluation results of HoPE Trip Planner mobile app extracted by the internal testing and the focus group revealed several issues regarding the usability, (translation errors, unexpected programming errors, etc.). Those errors were solved by the technical partners before launching the app to a wider audience. When the HoPE Trip Planner was widely launched in Gipuzkoa, the evaluation results regarding the usability of the application were promising, but it is concerning aspect that the results about the criterias of classifying the Trip options have not been that good.

Finally, the accuracy and the route plans information are still debatable. Following the survey results, negative answers have been collected regarding the accuracy and the Trip information, so as previously mentioned, we will investigate by contacting the committed evaluation participants to go in deep to those answers that were negative and try to solve those issues.

5. Conclusion

This document describes the evaluation actions undertaken in order to evaluate the Hope Trip Planner Mobile app for the Basque Country. Furthermore, this deliverable highlights and discusses the evaluation results based on users opinion on a different aspects of the HoPE Trip Planner in Gipuzkoa.

In general, the evaluation results showed positive answers towards the usability and usefulness of the application. However, there is still room for improvement on the application's overall performance and quality. The consortium is alredy working on detecting the source of failures to take actions to improve the provided trip plans accuracy.
The next edition of this deliverable (D5.4.2) will report on the further pilot execution plan actions, along with the evaluation results of the remaining HoPE mobile applications.