



# ACTIVAGE PROJECT

ACTivating InnoVative IoT smart living environments for AGEing well

## D6.4 Second Interim ACTIVAGE evaluation report (Mid-term demonstration)

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# Abstract

To avoid any overlapping with D6.3 (first interim evaluation report) and D9.4 (Updated KPI evaluation report), this report will mainly present the first results of the demonstration phase in terms of GLocal Matrix results and related use as well as Global results. The data showed are the results of thousands of analysed questionnaire collected from the DSs and mainly refer to baseline data.

The expand and growth phase strategy here is just cited as a further explanation is included in D9.4.

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# 1 About This Document

The D6.4 aims at show the preliminary results of the evaluation as well as to present the first approach towards the analysis of profitability and cost effectiveness of ACTIVAGE.

According to the presentation of the preliminary results of the assessment, D6.4 includes the “Baseline” results of the GLocal Evaluation Framework. The advanced evaluation (updates on “baseline” evaluation as well as “intermediate” assessment) will be included in D6.7 (M30).

It is noteworthy to highlight that the final evaluation through the GLocal Evaluation Framework will be included in D6.5, the ACTIVAGE White Book (M42) and will include contextual data about the environment and ecosystems of the different DSs.

Here, the cost/benefits analysis is presented as a first approach that will be further defined and refined in D6.7.

In the appendix section, a sample of the results for each DS is presented.

In order to not overlap topics, the explanation of the “Expand and Growth” phase methodology will be presented in D9.4 and not in the present deliverable.

## 1.1 Deliverable context

Project item	Relationship
<b>Objectives</b>	The following document aims at showing the preliminary results of the ACTIVAGE GLocal Evaluation Framework as well as to present the preliminary approach toward the assessment of costs and benefits.
<b>Exploitable results</b>	<p>Apart from being itself an exploitable knowledge asset, D6.4 lays the cornerstone for:</p> <ul style="list-style-type: none"> <li>– other important exploitable knowledge assets, especially the ACTIVAGE White Book, and</li> <li>– increasing the exploitation opportunities for both the ACTIVAGE</li> </ul>
<b>Work plan</b>	<p>D6.4 is the result of D6.1 and following. Moreover, it will be the reference document for the following WP6 activities:</p> <ul style="list-style-type: none"> <li>- refine and extend the framework along the three axes QoL &amp; Independence (T6.4), Service Sustainability (T6.5), and Innovation and Growth (T6.6),</li> <li>- apply its interim and final versions (to be created in the course of the above activities) in practice (T6.3), and</li> <li>- create the ACTIVAGE White Book (T6.7)</li> </ul>
<b>Milestones</b>	MS2
<b>Deliverables</b>	D6.6 and its iterative updates are / will be used, in particular, as input in the updated version of D6.2 (evaluation tools & processes), D6.5 (evaluation reports & the White Book), D8.3 (impact strategy definition & assessment), and D9.4 (KPI evolution and impact assessment at the deployment sites).
<b>Risks</b>	<ul style="list-style-type: none"> <li>- Rk2 (extract &amp; communicate benefits), by initiating evaluations whose results will help to overcome possible difficulties;</li> <li>- Rk11 (evaluation data collection), by early preparation, and</li> <li>- Rk19 (KPI relevance), by early preparation.</li> </ul>

## 1.2 Version-specific notes

As D6.1, D6.2, D6.3 and D6.6 laid the bases for the GLocal evaluation framework, this Deliverable aims at making a concrete further step in the presentation of the evaluation methodology results and of GLocal Matrix.

As such in this deliverables the following objectives will be reached:

- 1) Contextualization of the status of the evaluation
- 2) Presentation of the first results of the evaluation in terms of “Baseline” data;
- 3) Update on Global KPIs collection activity and validation process of the Global Self-perception questionnaire;
- 4) Preliminary and further definition of cost effectiveness KPIs and methodology.

## 2 INTRODUCTION

### 2.1 Socioeconomic impact assessment

« An impact assessment is a way of structuring both the analysis and the underlying information for decision-making. It identifies and analyses the objective of a proposal as well as the likely impacts on society from the proposal. A socio-economic impact assessment weighs the socio-economic cost against the socio-economic benefit. As far as possible, the analysis includes the consequences for all participants in society and all kinds of impacts, for example: Social impacts (e.g. health) and Economic impacts (can include effects on employment)<sup>1</sup> ».

In ACTIVAGE project, the analysis of « consequences for all participants in society and all kind of impacts » is the core of the evaluation strategy. Indeed, the evaluation framework dedicated to ACTIVAGE socioeconomic impact assessment considers:

- Impacts on quality of life of elderly people & patients
- Impacts on quality of life of professional caregivers
- Impacts on quality of life of informal caregivers
- Impacts on care relationships
- Clinical benefits
- Health Economics
- Acceptability issues
- Sustainability issues
- ELSI issues
- Reliability and perceived reliability issues
- IoT innovations

Through those impacts, ACTIVAGE evaluation framework has to address the « demand » of different target clients, different clients' voices. These different sources could lead to different definitions of ACTIVAGE solutions and products' quality. Those target clients, whose voices could be safely seen as sources to define ACTIVAGE solutions and products benefits and quality are:

- European senior citizens
- Professional and informal caregivers
- Elderly people's family
- Social housing companies
- Hospitals
- Rehabilitation centers

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1

<http://www.swedishepa.se/Environmental-objectives-and-cooperation/Swedishenvironmental-work/Work-areas/Socio-economic-impact-assessment/>

- Nursing homes
- Mutual Insurance companies
- Local authorities (municipalities, regions)
- Healthcare system representatives

In order to take into account this diversity of clients voices (different voices in each DS), ACTIVAGE evaluation framework has to include patients, old persons, old persons' families, informal caregivers, formal caregivers but also institutions (local and national health authorities, local authorities, decision-makers, care-providers) and companies (installers, retailers, care-providers) .

For example, in DS6 (ISE), the panel 3 involves patients, patients families, professional caregivers in the rehabilitation center SSR Korian Les Granges in Echirolles but also Korian as a private company, an healthcare provider evaluating the opportunity to become client of the solution. Consequently, global questionnaires are administrated to patients; semi-conductive interviews are conducted by MADoPA (partner in charge of the evaluation for this panel in France) with patients, patients families, professional caregivers in the rehabilitation center. By the end of the project, a report will be issued by Korian and MADoPA on a possible expand and growth strategy and addressing this question: how to replicate a sustainable version of the solution deployed during ACTIVAGE in other Korian carecenters (rehabilitation centers, nursing homes).

Global questionnaires patients	→ Global questionnaires
Questionnaires patient	→ KPI Data model
Questionnaires caregivers	→ KPI Data model
Clinical impact	→ KPI Data model
Reliability	→ KPI Data model
Interviews with professional caregivers	→ Local specification book → Glocal Matrix
Interviews with informal caregivers	→ Local specification book → Glocal Matrix
Trainings, education, public debates	TASDA MADoPA report → Glocal Matrix
Sustainability	→ Report Korian-MADoPA→ KPI Data model+Glocal Matrix

Table 1: Evaluation process, DS6 Panel 3, Korian

The table below summarizes the outputs the ACTIVAGE evaluation will produce as explained in previous deliverables (ref. D6.1; D6.3 and D6.6).

Global cohort, with global questionnaire	→ GLOBAL QUESTIONNAIRE
GLOBAL KPI's adjusted at local scale for cohorts with local specificities, different UC, different technologies	→ KPI Data model
Local results, surveys that cannot be included in the KPI Data Model but being shared, mined, mutualized	→ GLOCAL MATRIX

Table 2 Activage evaluation outputs

## 2.2 Expand and growth phase: evaluation strategy

Socio-economic impact assessment or to put it differently, the evaluation of socio-economic impact in ACTIVAGE is structured by the LSP dimension. Indeed, the Large Scale Pilot implies different ecosystems (seven countries, nine ecosystems), and in ACTIVAGE different solutions, different stakeholders. The evaluation framework is tailor-made and the evaluation tools are selected in order to fit with a LSP. Consequently, the evaluation framework shall be able to, simultaneously

- Provide Local, Global and GLocal results evaluating local and global KPI inside the project ACTIVAGE
- Ease the design of cross-pilots' evaluation, accompanying the cross-pilots experimentations
- Align evaluation framework to growth phase and the deployment of an ACTIVAGE product and service at European scale, with an ability to attract continuously new partners, whatever could be eventually the ACTIVAGE product.
- Develop and use the GLocal Matrix tool, as an evaluation tool and project management tool, including on Box 6 and 4 the question of sustainability and Business model (as an incentive for DS evaluation managers and example)

### **Expand and Growth phase → definition of the approach and activities to be done.**

As far as today, WP6 managers and local evaluation managers have agreed the following action plan:

- To establish the list of exchanged services among the different DSs (according to WP2 activities timing)
- To engage consultation with the DSs to understand which is the “added value” (gained through the exchange of the service) they want to measure, what are the main obstacles met or opportunities to address, what are the main challenge of recruitment This will also include short fieldworks and visits on site by MADoPA's team (first visit in the Greek DS the 17/18<sup>th</sup> of April 2019, most of the visits shall be done by June 2019).
- To define KPIs that will measure and evaluate the expand and growth strategy: 3 KPIs **a)** QoL, **b)** one KPI determined by the “added value” the DS want to assess, **c)** IoT performance KPIs.

## 2.3 Challenges of Global evaluation framework for LSP

The main challenge for ACTIVAGE evaluation framework is to maintain, simultaneously a high level of accuracy at the local scale with tools that are not elaborated locally, but at a global scale. This should allow us to provide global results, from items designed at the European scale combined with local KPIs defined by the deployment site. To put it differently, the main issue consists in keeping the evaluation “global” toolbox adapted to each local ecosystems and local pilots. In this way, one can safely assume that ACTIVAGE has to develop an evaluation framework valuing and promoting plurality on the one hand, and providing global results on the other hand.

Because of the heterogeneity of the ACTIVAGE ecosystem in terms of solutions and contexts, there is not a common consolidated and single methodology that can be used. Some of them are focused on specific application domains (e.g. telemedicine), others are related to specific aspects (e.g. technology user acceptance, socio-economic impact). Specific selected methodologies (e.g. MAFEIP, Monitoring and Assessment Framework for the EIP on Active and Healthy Ageing services, MAST, Model of Assessment of Telemedicine applications, ASSIST, Assessment and Evaluation Tools for Telemedicine, fall in these category.

For instance, the evaluation framework designed in and for this project aims to overcome the current difficulties faced by the MAST grid, the main European multidimensional evaluation framework of health and care technologies. According to its developers founders, the diversity of national and local contexts (in terms of regulation, organisation of health and care system, local eco-system, care relationship, etc.) represents one of the main obstacles for the transferability and scalability of health and care technologies.

*"To conclude, MAST has not provided a final and overall result for each of the European projects in which it has been adopted but this is not due to limitations of the model itself but rather to the fact that the outcome of complex Technology Enabled Interventions is almost totally dependent on the local context. Now, local contexts are very different in the European Union between one country and the other but even from one region to the other within the same country. In other words, a single, simple tool to read final and overall result at European level is beyond the possibility of any assessment methodology<sup>2</sup>".*

Considering this, two risks are to be taken into account:

- To use a time and money consuming evaluation framework (this one of the reasons why a model like MAST is not adapted to small pilots)
- To use a global evaluation framework unable to provide eventually any relevant results at a local scale (not specific enough) none at a global scale (not grounded enough)

Considering the obstacles met by the MAST, MAFEIP, ASSIST methodologies to address large scale pilots, we propose to translate those two risks in 6 challenges described below.

### 2.3.1 Challenges addressed

**Challenge 1:** providing common results while respecting local specificities, high level of generality while respecting the plurality of pilots. This is made possible in ACTIVAGE by the combination of global tools (socio-demographic table, global questionnaire, KPI data model)

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<sup>2</sup> Stafylas P, Kidholm C, d'Angelantonio M, "MAST, grille d'évaluation multidimensionnelle des technologies de santé", in Michel H et al (2018), L'Avenir des Silver Tech, conceptions, usage et évaluation, Presses de l'EHESP, p 332

and GLocal tools (GLOBAL MATRIX to share and value at a global scale Local KPI, local results and resources).

**Challenge 2:** being flexible enough so that ACTIVAGE evaluation framework (and the related mandatory tasks) is not time and money consuming and can be deployed within partners' budget. Each DS has been able to adjust the KPI data model to the local resources to collect data; GLocal Matrix allows working on all results without additional work for DS's evaluation managers for the local and global material collected.

**Challenge 3:** being flexible enough so that the evaluation framework can be compatible with and usable in each partner ecosystem and cultural environment. Each DS has been able to adjust the KPI data model to the local resources to collect data.

**Challenge 4:** being flexible enough so that the evaluation framework can be used in each deployment site with the available skills and staff members (without any dedicated recruitment). WP6 provides a comprehensive evaluation framework that can be used by DS evaluation managers. Additional surveys, data, documents that can feed the evaluation process are hosted and exploited in the GLocal Matrix by WP6 managers, even if not created by ACTIVAGE partners.

## 2.3.2 Challenges to be addressed

**Challenge 5:** not to be time consuming and expensive for ACTIVAGE partners

**Challenge 6:** develop the ACTIVAGE evaluation framework as an ACTIVAGE product, within and beyond the project.

**Challenge 7:** develop and deploy a specific evaluation for cross-pilot, not restricted to interoperability and technical reliability issues but implying the 9 dimensions in the Glocal Matrix (Quality of Life, Clinical benefits, Organization of Care, Economics, Acceptability, Sustainability, ELSI, Technical reliability and IoT Innovation).

## 2.4 360° benchmark/evaluation tool for large scale pilots

The ACTIVAGE evaluation framework is conceived as a **360° benchmark/evaluation tool for large-scale pilots**. This « 360° » evaluation process is necessary for several reasons:

- To take into account the diversity of solutions, use cases, and market addressed by the 9 ACTIVAGE deployment sites.
- To be able to identify the market opportunities, the target clients, the added-values perceived by those clients, the target price and target population of ACTIVAGE solutions and products, and also the obstacles in the different ecosystems.
- To feed WP8 with feedbacks on value-propositions defined through the evaluation processed.
- To be able to evaluate the solutions « in real settings », that is to say taking into account all the dimensions (economics, politics, reliability in real settings, ELSI, acceptability, etc.) involved in real life that could be missing in an experimentation in a controlled environment.

Consequently, this evaluation framework relies on a multidisciplinary approach, implying resources, tools, backgrounds and methodologies from different fields: economy, sociology, psychology, management science, medicine. This multidisciplinary approach is mainly inspired by the MAST evaluation framework.

How could the 360° evaluation method could be a product? A product for European IoT for AHA sandbox and accelerator? In two ways. On the one hand, Active evaluation results (global, GLocal and local results) can be used by any actor willing to deploy an IoT solution addressing AHA markets in Europe, in order to anticipate obstacles, to have a better idea of market opportunities, target markets, obstacles, market opportunities, ELSI and acceptability issues in the different DS. On the other hand, this actor could use ACTIVAGE evaluation methodology, or an ACTIVAGE Sandbox to test its technology, POC or concept at a LSP scale, 360°, that is to say taking into account the 9 dimensions embedded in the GLocal Matrix (QoL, Clinical benefits, Organization of Care, Economics, Acceptability, Sustainability, ELSI, Technical reliability, and Innovation in IoT).

## 2.5 Overview and update of DSs evaluation challenges

The table below shows the status of the evaluation tools deployment. Has the DS started to use the tool, started the recruitment, is it providing a dataflow to WP6 team?

Nb	Name	Acronym	Recruitment	Sociodemo	Global questionnaire	Dataflow
1	Galicia	(GAL), Spain	Started	-	Started	Started
2	Valencia	(VLC), Spain	Started	OK	Started	Started
3	Madrid	(MAD), Spain	Started	OK	Started	Started
4	Regione Emilia-Romagna	(RER), Italy	Started	OK	Started	Started
5	Greece cluster	(GRC), Greece	Started	-	Started	Started
6	Grenoble region	(ISE), France	Started	OK	Started	Started
7	WOQUAZ	(WOQ), Germany	Started	-	Started	Started
8	Leeds	(LEE), UK	Started	-	Started	Started
9	Finland cluster	(FIN)	Started	OK	Started	Started

Table 3 Evaluation tools status

The table below shows the level of progress of recruitment of pilots' participants in the different deployment sites.

Nb	Name	Acronym	Recruitment	Target	Recruited	%
1	Galicia	(GAL), Spain	Started	700	492	70%
2	Valencia	(VLC), Spain	Started	525	502	95%
3	Madrid	(MAD), Spain	Started	350	172	49%
4	Regione Emilia-Romagna	(RER), Italy	Started	120	12	10%

5	Greece cluster	(GRC), Greece	Started	Smart home 500	182	32%
				Mobility 500	50	10%
6	Grenoble region	(ISE), France	Started	58	130	44%
7	WOQUAZ	(WOQ), Germany	Started	165+85	115+85	80%
8	Leeds	(LEE), UK	Started	123	350	35%
9	Finland cluster	(FIN)	Started	612	500	80%

Table 4 Participants recruitment status

## 2.6 Focus on sustainability issues

The ACTIVAGE evaluation framework offers a particular focus on sustainability issues. For example, in all Boxes designed in the GLocal Boxes matrix, each box includes a sub-category « sustainability ». This means that ACTIVAGE partner in all DS are invited to evaluate the sustainability of the service and solution deployed with a broad and comprehensive approach. Each DS is invited to feed its evaluation of the local solution deployed in terms of sustainability with measurements of the solution's impact on QoL, clinical benefit, economics, its acceptability, related ELSI, technical reliability and IoT.

A strong evaluation of a solution's sustainability implies to evaluate with clients and/or end-users the following issues:

- target price of the solution
- perceived added-values of the solution
- target client for the solution
- ecosystem specifications (local healthcare system, local demographics, local economics, local facilities, ELSI and cultural issues, local retailers, competition, local benchmark, social concerns, partners goals and motivations, etc.)
- the existence of a demand for the value proposition

A product that can affect the QoL and provide patients with a real clinical benefit could be a total failure from a business point of view if perceived as not reliable, not profitable, not reimbursable, not retailed, or facing better competitors. All the aspects of sustainability are important and this is why ACTIVAGE partners are invited to include this dimension in their evaluation protocol through the GLocal Matrix

# 3 SOCIO-ECONOMIC EVALUATION, FIRST RESULTS

## 3.1 GLocal MATRIX first results

### *What is the GLocal Matrix*

The GLocal MATRIX is a tool tailor-made for ACTIVAGE evaluation process conducted by WP6 managers, designed to share local data that don't fit in the KPI data model, without consuming time and money. It is a set of boxes designed to collect, store, classify and analyse all the data and results used or produced by the DS that do not fit in global KPI data model. The boxes of the GLocal MATRIX are designed to store and classify any type of documents, measurements of local performance indicators, surveys, polls, territorial diagnosis, environmental data, demographics, and economics (etc.).

WP6 designs the GLocal MATRIX and ask all DS to send to WP6 all documents containing results or data used or generated during the pilots. WP6 receives those documents, store them on LIVELINK, classify them and analyse them The GLocal MATRIX consist in nine boxes categories (MAST categories adjusted to ACTIVAGE pilots).











 Box 1 Impact on QuOL	26/10/2018 17:06	Dossier de fichiers
 Box 2 Clinical benefits	06/09/2018 11:00	Dossier de fichiers
 Box 3 Organisation of care	06/09/2018 16:59	Dossier de fichiers
 Box 4 Economics	06/09/2018 17:04	Dossier de fichiers
 Box 5 Acceptability	06/09/2018 17:06	Dossier de fichiers
 Box 6 Sustainability	06/09/2018 17:09	Dossier de fichiers
 Box 7 ELSI and cultural Issues	06/09/2018 17:10	Dossier de fichiers
 Box 8 Technical reliability	06/09/2018 17:14	Dossier de fichiers
 Box 9 IoT innovation	06/09/2018 17:16	Dossier de fichiers
 INDEX OF BOXES	14/09/2018 14:11	Feuille de calcul ...

Figure 1 GLocal MATRIX nine boxes categories

Each box corresponds to a “Big question”, for example Box 1 Impact on QoL corresponds to the question: How the solution deployed in my DS addresses, measures the Impact on QoL, through local or global performance indicators, surveys, and interviews (etc.). In each Box, one will find subcategories corresponding to sub questions. For instance, Box 1 is divided in:





<input type="checkbox"/> Nom	Modifié le	Type
 QuOL Guidelines	06/09/2018 16:53	Dossier de fichiers
 QuOL indicators measurments	26/10/2018 17:07	Dossier de fichiers
<input checked="" type="checkbox"/>  QuOL Scalability	06/09/2018 16:53	Dossier de fichiers
 QuOL Sustainability measurments	06/09/2018 16:53	Dossier de fichiers

Figure 2 Subcategories corresponding to subquestions of Box 1

Each subcategory presents the documents stored and classified in two folders, classified by AUC (11 ACTIVAGE Use Case) and unclassified.

*Glocal Matrix can be used in ACTIVAGE project as:*

- A management tool to conduct the project
- A tool to identify missing data
- A tool to encourage and ease mutualisation // inspiration between partners
- A tool to stimulate partners for adjusting offer to demand
- A database to be mined or sold : an ACTIVAGE asset

### 3.1.1 GLocal Matrix use and first results

WP6 managers have received, processed and included so far in the GLOCAL MATRIX documents that can be classified and used in the GLocal Boxes to complete the evaluation process, from 5 DS, and 4 countries.

Those documents are .pdf, .doc, and .xls, .jpg in English, French and Spanish. Most of them contain data that cannot be fully exploited or that not fit in the KPI data model. Those documents sent by DS's evaluation managers are mainly documents on Quality of Life, Organization of care and Acceptability. All those results can be used within the boxes classified by country, by use case (or unclassified), type of docs items.

#### Numbers and assumptions (1)

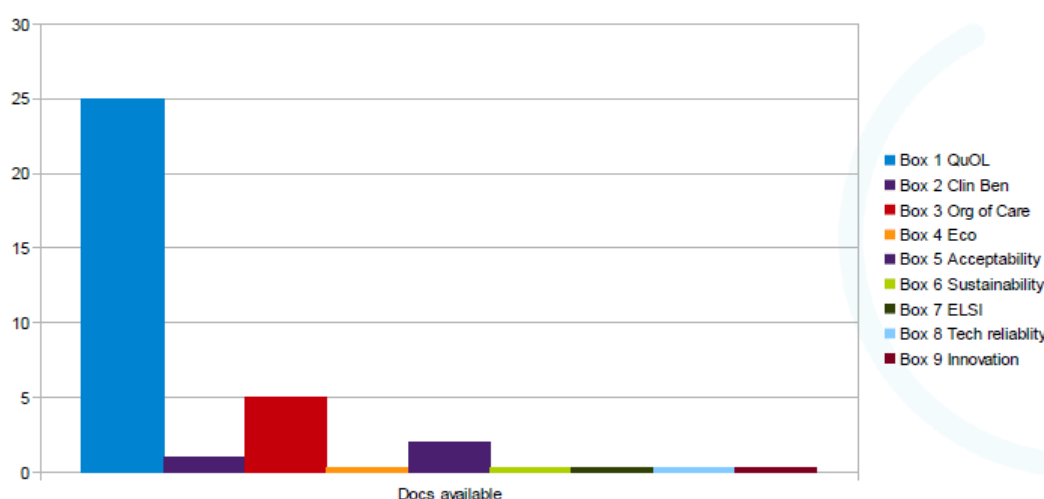


Figure 3 GLocal Matrix documents availability per box

Here, the function of GLocal Matrix clearly appears as this scheme shows that at least two important items are not addressed enough in all DS and must be urgently addressed (Economics & Sustainability)

#### **Documents processing**

When a DS sends a document to WP6 to submit results that cannot be fully reported in the KPI data model or the socio-demo table, WP6 Should trigger the following actions:

- Reads the document (if necessary translates it)
- Classifies the document in the GLocal Matrix (Box, subcategory, use case)
- Provides a new name to the document (DSx document Name)
- Creates a line for the document in the Index of Boxes
- Eventually, compares and analyses the results

## 3.1.2 GLocal Matrix use

For example, if a partner wants to see how the clients expect an impact of ACTIVAGE solution on their quality of life in the other DS, that partner will follow this path (see below):

Box 1 QoL  
Sub-cat Indic. and measure.  
Unclassified

That partner will see that two documents from Isere and Madrid can be matched, containing comparable material on users' expectations.

DS ISERE, Panel 1 (P1) USERS QUESTIONNAIRES FIRST RESULTS & DS MADRID FIRST RESULTS as December 2018 GLOBAL provide us with information on participants' behaviours, needs, feelings and representations (isolation, loneliness, care relationship, mobility, activities, and leisure activities). With two slightly different questions, we have very different answers (100 % without opinion VS 100 % having an opinion on the expected impact on QoL).

« Do you think that the ACTIVAGE device can have an impact on your quality of life? »

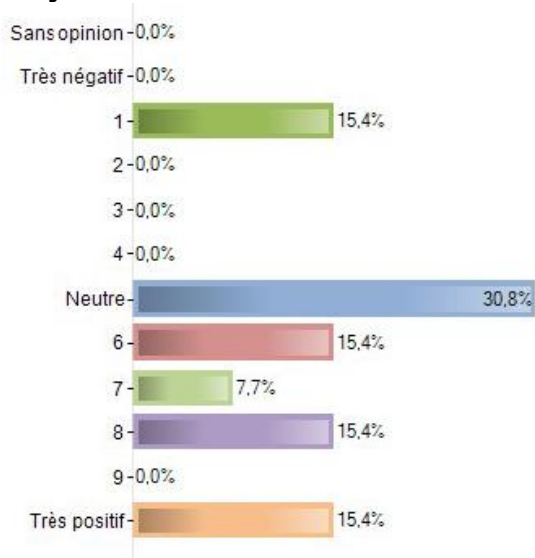


Figure 4 Isere DS, P1 Users questionnaires first results, impact on QoL

« How would you qualify the impact of the IoT (Internet of Things) solution on your quality of life? »

Total Count (N)	Missing	Unique
108	3 (2,7%)	1

Counts/frequency: 0 muy negativo (0, 0,0%), 1 (0, 0,0%), 2 (0, 0,0%), 3 (0, 0,0%), 4 (0, 0,0%), 5 neutro (0, 0,0%), 6 (0, 0,0%), 7 (0, 0,0%), 8 (0, 0,0%), 9 (0, 0,0%), 10 muy positivo (0, 0,0%), Sin opinión (108, 100,0%)

Figure 5 Madrid DS First results dec2018 GLOBAL, Impact on QoL

Translated in English, the questions are:

DS ISERE: Do you think ACTIVAGE solution could impact your quality of life?

DS MADRID: How would you qualify the impact of the IoT (Internet of Things) solution on your quality of life?

Here, two lessons can be learned:

a) Some data is probably missing, as in Madrid, it seems not possible to measure end-users expectations which might be very useful to build the service and improve the product.

b) Some information is missing (to describe and explain the score). Indeed, those documents present a score that could be misunderstood (100 % “sin opinión”). It would be probably safer to mention on this document that the participants did not use the technology when answering the questionnaires and they are invited to reply « sin opinión ». If those precision are not made, then there is a huge risk of misunderstanding within the consortium.

### 3.1.3 Tool for mutual inspiration

#### Example 1

Here, we consider the situation of a DS evaluation manager that is interested in knowing how the impact on QoL is done in the different DS, in order to improve the evaluation tools deployed or to compare local results to other's DS results. This partner would follow this path within the GLocal Matrix:

Partner path within the GLocal Matrix

GLocal Matrix

→ Box 1 QoL

→ Sub-cat Indic. and measure.

→ Classified by AUC

→ AUC 1

Three documents from Isere and Valencia can be matched, containing comparable material on a transversal item: perceived added-values by end-users of solution's customization. The methodology, the approach, the questions are different but the results can be compared.

-DS2 (Valencia) Cohort description

-DS6 (Isere) P1 Diag terr

-DS6 (Isere) P3 Spec book

Through the document DS2 Cohort description, we know precisely the composition of Valencia cohort. These interviews are simultaneously very interesting, thorough, useful and very difficult to merge directly with data contained in the KPI data model.

However, the verbatim analysis in DS2 usage evaluation by users reveals a « demand » of a high level of customization (for each user).

*« Con respecto a la consulta “¿Qué alertas tiene activadas?” podemos decir que cada uno de los usuarios tiene unas preferencias diferenciadas, por ello se hace patente que es necesario que exista esa posibilidad de personalizar la tecnología permitiendo a cada usuario configurar según sus necesidades <sup>3</sup>».*

Those results resonate with DS6 P1 Diag terr and DS6 P3 Spec book. Those results will be directly comparable to the usage evaluation that will be performed in France in the three panels. From today, those results represent a strong invitation to include an item «level of customization perceived as an added value» in the usage evaluation protocol that will be deployed in Isere.

Conversely, a first step of « customization » is described in DS6 P1, that implies a customization at municipality scale, while the report from Valencia does not correlate the demand of customization to « collective » dimension or « citizen engagement » dimension. This could be a result as such, or an opportunity to check, at Valencia DS scale, if there could be a demand for a customization at « barrios » scale.

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<sup>3</sup> *“With regard to the question “What alerts have you activated?” we can say that each of the users has different preferences, so it is clear that it is necessary to have that possibility to customize the technology allowing each user to configure according to their needs”*

At the same time, this cross analysis is an opportunity for DS Evaluation managers and partners from Isère to see the very high level of acceptability of the solution deployed in Valencia, the smooth deployment and could ask for advises, trying to understand the key elements for such a success.

### Example 2

Partner path in the GLocal Matrix

GLocal Matrix

- Box 1 QoL
- Sub-cat Indic. and measure.
- Classified by AUC
- AUC 1

Two documents from Valencia and Isère can be matched, containing comparable material on the question of social life of patients. The methodology, the approach, the questions are different but the results can be compared.

-DS2 COHORT DESCRIPTION (Valencia)

-DS6 P1 USERS QUESTIONNAIRES FIRST RESULTS (Isère)

### Valencia

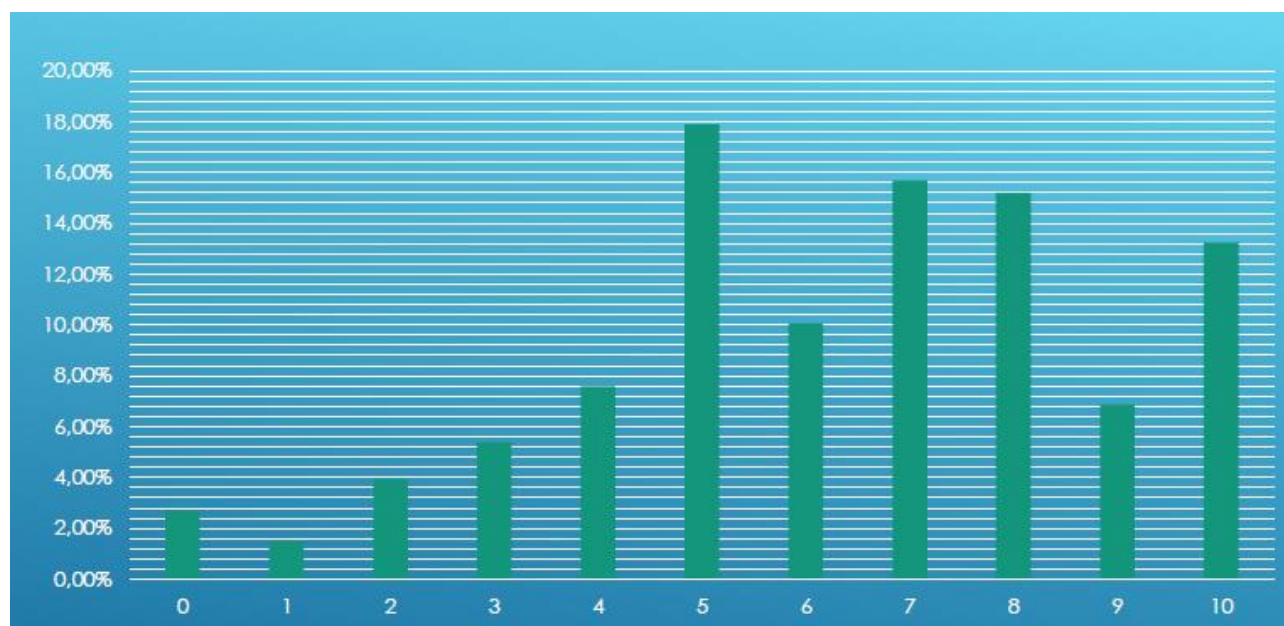


Figure 6 DS2 cohort description (Valencia), social life

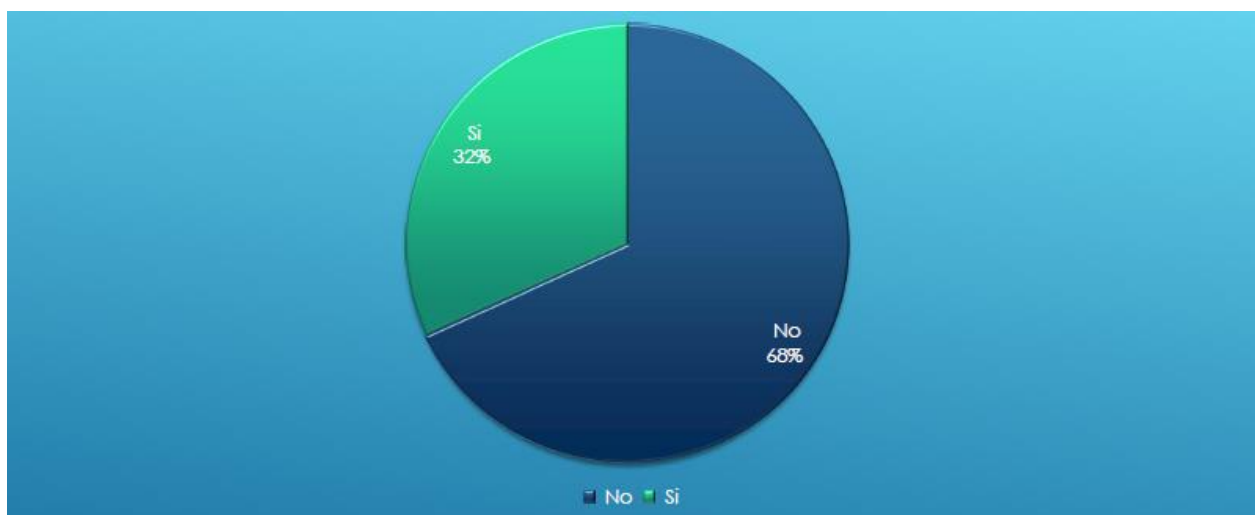


Figure 7 DS2 cohort description (Valencia), Social activities participation

## Isère

Have you ever felt distant, isolated from your loved ones?

	Effective	%
<b>Not at all</b>	2	16,70%
<b>1</b>	0	0,00%
<b>2</b>	4	33,30%
<b>3</b>	0	0,00%
<b>4</b>	0	0,00%
<b>5</b>	2	16,70%
<b>6</b>	1	8,30%
<b>7</b>	2	16,70%
<b>8</b>	1	8,30%
<b>9</b>	0	0,00%
<b>Absolutely</b>	0	0,00%
<b>Total</b>	12	100,00%

Figure 8 DS6, Social isolation (from your relatives)

**Have you ever felt remote, isolated from local shops?**

	Effective	%
<b>Not at all</b>	10	76,90%
<b>1</b>	1	7,70%
<b>2</b>	0	0,00%
<b>3</b>	0	0,00%
<b>4</b>	0	0,00%
<b>5</b>	0	0,00%
<b>6</b>	1	7,70%
<b>7</b>	0	0,00%
<b>8</b>	0	0,00%
<b>9</b>	0	0,00%
<b>Absolutely</b>	1	7,70%
<b>Total</b>	13	100,00%

Figure 9 DS6, Social Isolation (shops, services)

**Have you ever felt distant, isolated from medical services?**

	Effective	%
<b>Not at all</b>	6	50,00%
<b>1</b>	2	16,70%
<b>2</b>	1	8,30%
<b>3</b>	0	0,00%
<b>4</b>	0	0,00%
<b>5</b>	1	8,30%
<b>6</b>	1	8,30%
<b>7</b>	0	0,00%
<b>8</b>	0	0,00%
<b>9</b>	0	0,00%
<b>Absolutely</b>	1	8,30%
<b>Total</b>	12	100,00%

Figure 10 DS6, Social Isolation (care services)

**Have you ever felt remote, isolated from some leisure activities?**

	Effective	%
<b>Not at all</b>	7	53,80%
<b>1</b>	1	7,70%
<b>2</b>	0	0,00%
<b>3</b>	1	7,70%
<b>4</b>	0	0,00%
<b>5</b>	2	15,40%
<b>6</b>	2	15,40%
<b>7</b>	0	0,00%
<b>8</b>	0	0,00%
<b>9</b>	0	0,00%
<b>Absolutely</b>	0	0,00%
<b>Total</b>	12	100,00%

Figure 11 DS6 Social Isolation (Leisure activities)

**What can be compared?**

**Methodologies and protocols:** DS6 contains more questions about social life before asking a general question on this item. This informs the « feeling » of isolation in Valence and in Iserre the distance to caregivers, distance to services, and distance to socio-cultural events. This can enrich the results on the (expected and observed) impact of IoT solutions on the feeling of isolation.

**Cohorts (patients, caregivers):** a comparison is possible (e.g. 76 % Female, in DS ISE, 88 % Female in DS VAL).

**Results:** it seems easier for the French cohort to access socio-cultural events (no participation for 68 % in DS VAL, 53 % of P1 in France would never feel isolated from a leisure activity).

### 3.1.4 A tool to stimulate partners for adjusting offer to demand

The content of the GLocal Matrix will be used from April 2019 as an incentive for the partners to upload their documents on the GLocal Matrix, to improve their evaluation protocol, and the positioning of their technologies and service offer on the local and European market.

A monthly “Success story from the fieldwork” - illustrating how information from the GLocal Matrix can be used by and useful for the partners - will be shared by WP6, and spread throughout ACTIVAGE consortium

Eventually, the boxes will be organised in semi-structured database that can be exploited during and potentially after the project, as a simple database, or as a proactive database developed as a sandbox. The database will be one of the assets of the ACTIVAGE Project.

## 3.2 Global KPIs first evaluations

All ACTIVAGE DS have provided at least a detailed and adjusted KPI Data model to the DS specificities (cohorts, ecosystems, goals, AUC, care relationship, technology deployed), a KPI data model table. All DS have provided baseline results (However, as the recruitment process is not finished, the information available does not allow us to provide a complete overview of the characteristics of different cohorts recruited. As the only information available relies on baseline, it is also not possible for the moment to provide results on the impact of ACTIVAGE

solution. In this intermediary report, we will illustrate the results of the analysis elaborated until now according to data collected (the data refer to M26).

When the baseline is completed, DS are able to provide user profile and caregivers' profile.

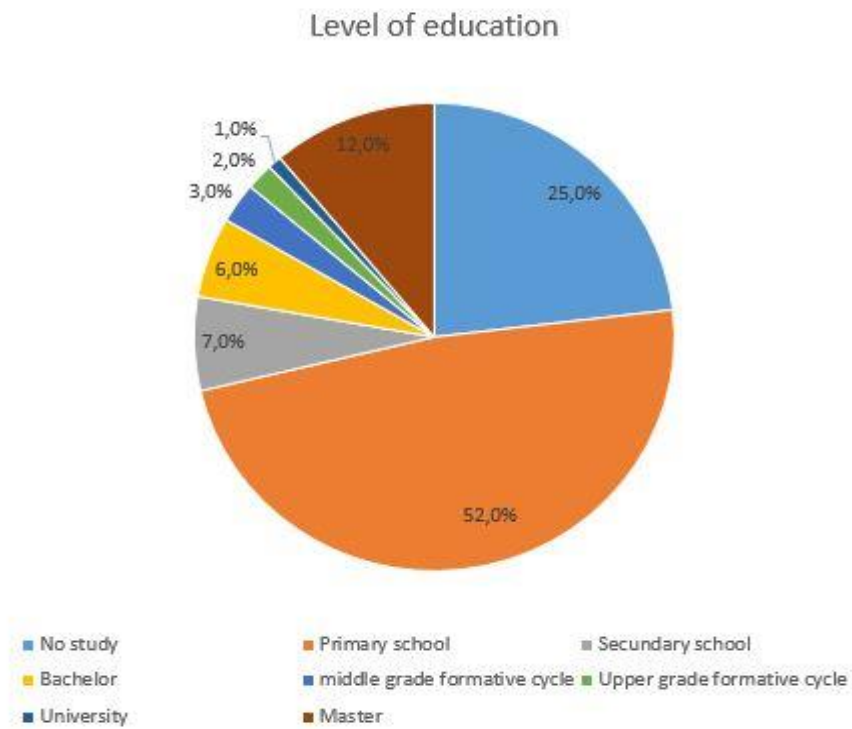


Figure 12 Level of education of participants in DS VAL

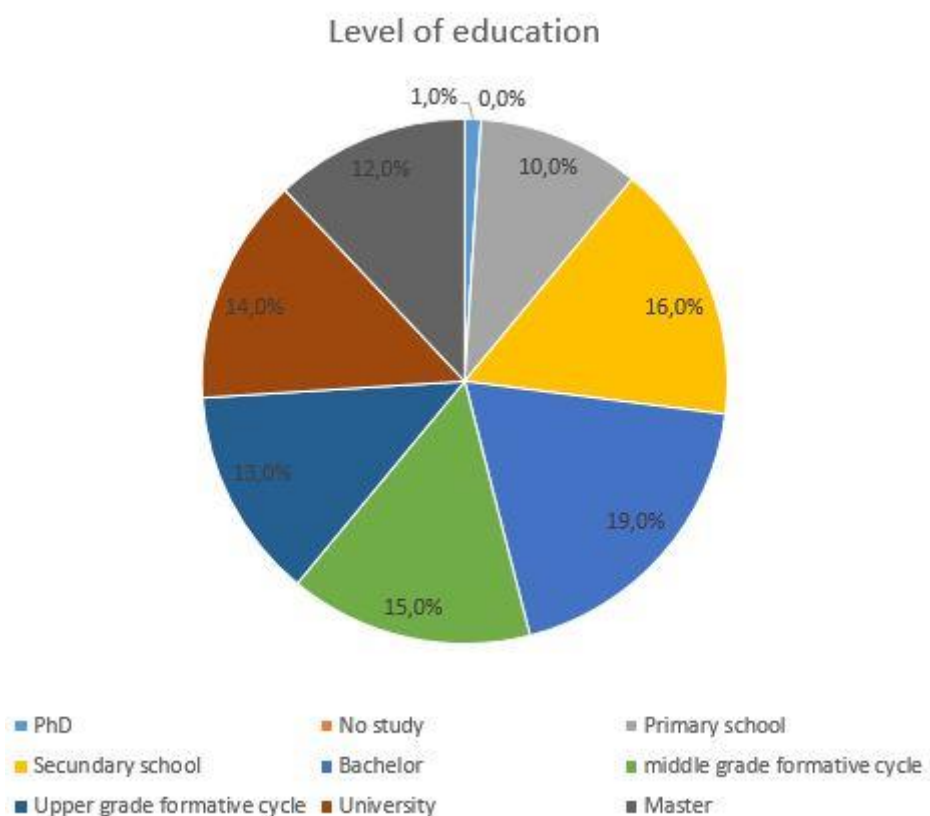


Figure 13 Level of education of caregivers in DS VAL

### 3.2.1.1 KPI Baseline evaluation

As concern the “Baseline” data (ref.D6.6), the KPIs measured are:

- QoL for elderly and caregivers (EQ-5D-3L, CarerQoL-7D);
- Social isolation (UCLA Loneliness scale version 3) for those DSs that have UC 6 and 7;
- Physical wellbeing (EQ-5D-3L);
- Global Self-perception questionnaire (question one for QoL, Physical activity and Social Life).

More than 2.000 questionnaires have been administered to the different type of stakeholders.

The great majority of data collected are from Elderly. The figure below show the data distribution among elderly and formal/informal caregivers

### Data distribution

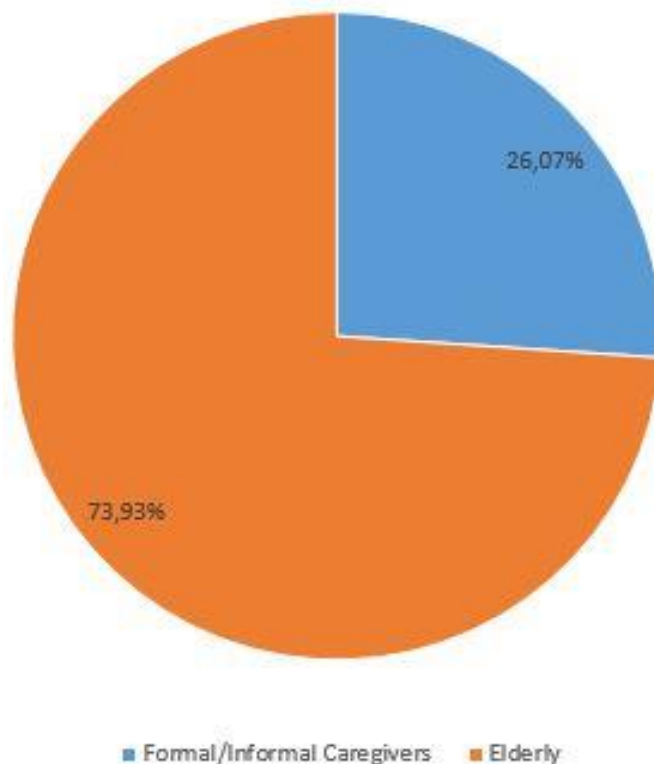


Figure 14 Data distribution

Concerning the evaluation results, the following graphs show the situation per DS according to the aforementioned KPIs.

**QoL and physical wellbeing (value from 0 to 1, where 0 is the worst score and 1 the best one)**

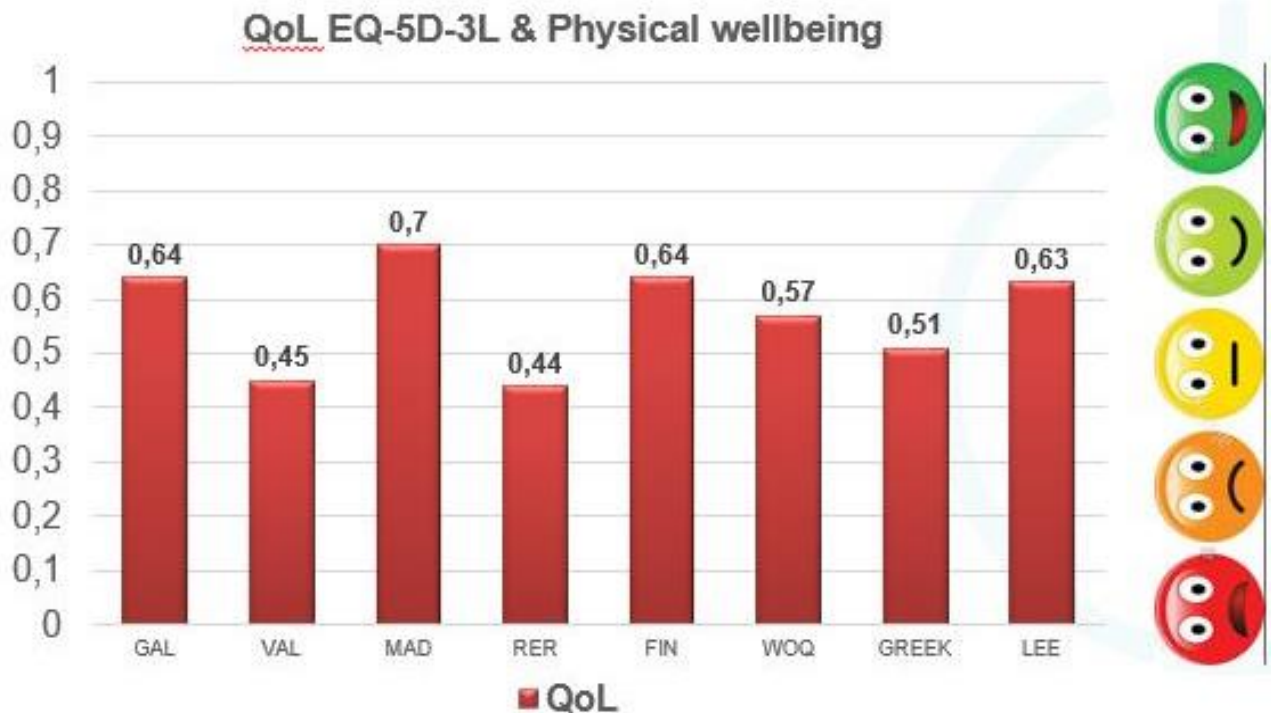


Figure 15 QoL and physical wellbeing baseline status per DS

**CarerQoL-7D and UCLA Loneliness scale version 3 (value from 0 to 100, where 0 is the worst score and 100 the best one)**

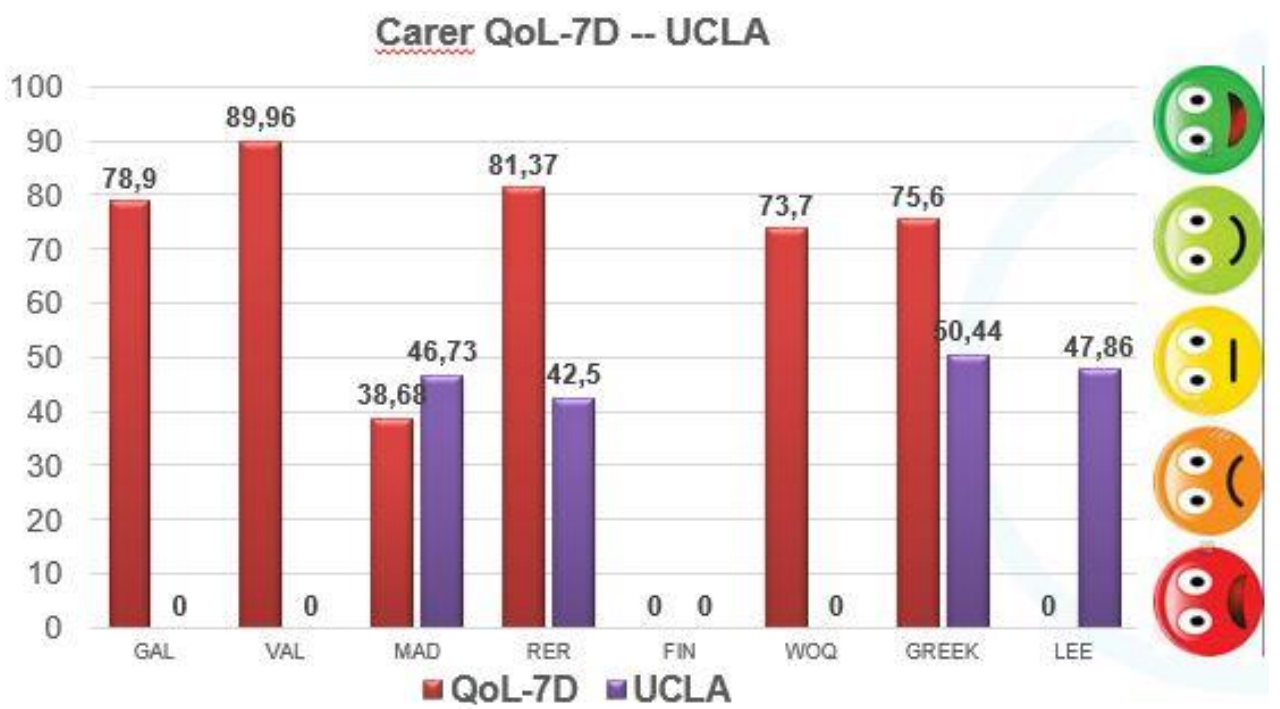


Figure 16 Carer QoL and elderly Social isolation

**Global Self-perception questionnaire (question one for QoL, Physical activity and Social Life).**

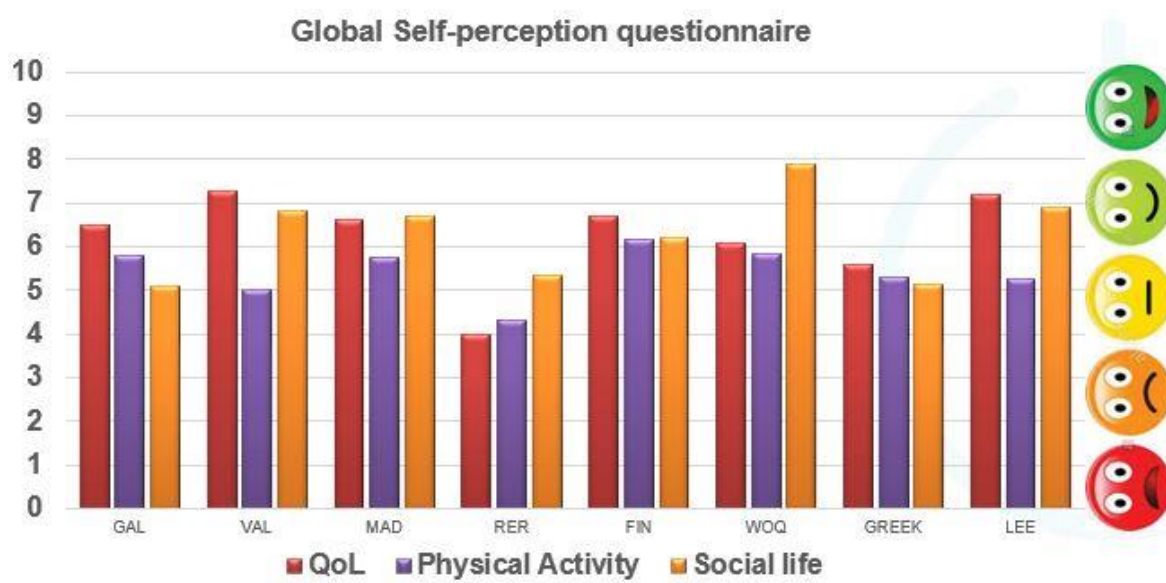


Figure 17 Global Self-perception questionnaire (question one for QoL, Physical activity and Social Life)

Concerning the Self-perception Global questionnaire the following figure show the example of data distribution in DS3 (Madrid) in a scale from 0 to 100 (this scale has been used for statistical reasons). This global questionnaire created for ACTIVAGE evaluation process is in validation process. It has been created to provide an overview of the ACTIVAGE cohort, even if this cohort is very heterogeneous (different populations, different conditions, different level of autonomy, different cultures, different ecosystems, using different technologies). This allow WP6 managers to describe the global ACTIVAGE cohort as well as to compare DS cohorts' QoL, autonomy, Social life, physical activity.

**How would you rate your quality of life?**

Total Count (N)	Missing	Unique	Min	Max	Mean	StDev	Sum	Percentile						
								0,05	0,10	0,25	0,50 Median	0,75	0,90	0,95
108	3 (2,7%)	23	15,00	100,00	61,01	17,21	6.589,00	40,00	40,00	50,00	60,00	72,00	81,30	90,00

Lowest values: 15, 15, 34, 34, 38

Highest values: 90, 100, 100, 100, 100

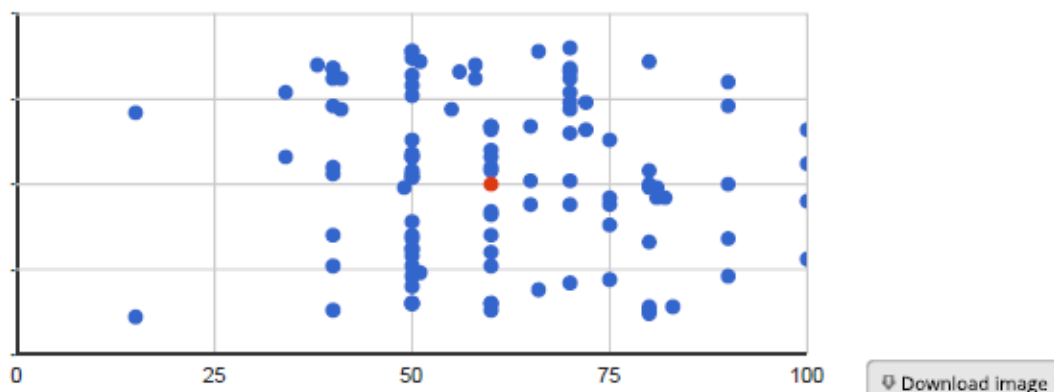


Figure 18 DS Madrid Self-perception questionnaire data distribution

### 3.2.1.2 KPI Intermediate evaluation

Concerning the “Intermediate KPIs”, the data collection has just started and the results are not relevant as they are the results of 150 users evaluated. With regard to quality of life assessment, intermediate evaluations may not show relevant changes due to:

- the sensitivity of the tests, which is not sensitive enough to detect changes
- the characteristics of users, which is normal to worsen their quality of life.

Therefore, we consider that until the final evaluations are carried out, we will not be able to intuit the effect that ACTIVAGE solutions have on the user's quality of life. We will be able to concentrate on the analysis of other factors such as acceptance.

The KPIs that are assessed in this phase are:

- Daily IoT/technology usage per patient (device usage logs);
- Service acceptance (UT-AUT questionnaire);
- IoT performance, failure probability (Mean time between failures);
- IoT performance, mean time to repair (Mean time to repair);
- IoT performance, safety (number of security breaches).

## 4 COST-EFFECTIVENESS FIRST APPROACH

The ACTIVAGE cost effectiveness analysis will be executed through the implementation of the “Incremental cost-effectiveness ratio” (ICER). In order to apply ICER, each DS has to provide data on costs addressed before and after the implementation of the ACTIVAGE services.

Data have to refer to costs related to the setting-up of an IoT service infrastructure (before ACTIVAGE and before AIOTES) and to costs related to the setting-up of an IoT service with the ACTIVAGE AIOTES (after the ACTIVAGE pervasion).

Costs will be composed by two components:

- 1) Public costs
- 2) Societal costs

Once collected ICER will be measured (M42).

$$ICER = \frac{Ca - Cb}{\Delta Qaly}$$

**Ca** and **Cb** represent costs without ACTIVAGE’s service (Ca) and with ACTIVAGE’s services (Cb),

The approach is based on two assumptions:

- Approach per use case.
- Classification of the Reference Use cases based on WP2 D2.2 report challenges are defined in detail in the ACTIVAGE DOA.

RUC vs Challenges	Age-friendly Housing	Assistive Technologies	Assisted Mobility	Social Engagement	Behaviors Early prevention of mental, behavioral, and health-related decline		Age-related changes	Disease Management
Daily Activity Monitoring	x	x	x		x		x	
Integrated Care		x						x
Health Parameter Monitoring		x					x	x
Emergency Trigger	x	x	x					
Exercise promotion		x	x	x	x		x	
Cognitive stimulation		x			x		x	x
Prevention of Social Isolation	x	x		x	x			
Safety, Comfort & Safety at home	x	x					x	
Mobility monitoring & advice for active mobility		x	x	x	x		x	
Notification of abnormal situations	x	x			x		x	x
Support for Caregivers	x	x		x	x	x		

Table 5 ACTIVAGE’s RUC as defined in WP2 vs the ACTIVAGE’s Challenges

In the following section, a preliminary set of actions for DSs to collected data for cost-effectiveness analysis is presented.

## 4.1 Definition of baseline services and costs before ACTIVAGE pervasion

### **DS action list**

#### **Each DS has to do the following actions for each intersection box related to their LUCs:**

- Correct/amend if necessary for your own DS the classification provided in the above table according to the assistive service implemented before ACTIVAGE pervasion (some listed challenges might not be addressed in your specific LUC). The following questions may help defining the service implemented:
  - Is it health related (e.g. disease management or early prevention of health decline?)
  - Is it using assistive technologies before ACTIVAGE?
  - Is it related to Age-friendly Housing?
  - Is it related to Mobility?
  - Is it related to social engagement/social isolation?
  - Is it related to age -related changes
- Provide an estimate of the cost for the assistive technologies if already existing before ACTIVAGE: device + installation + training + formal caregivers costs for the public healthcare system  
KPI: service costs (these costs include: device cost + installation costs + training costs + formal caregivers' costs for the public healthcare system.  
For this point, it is not necessary that all the listed costs are represented...it depends by local service)
- Provide an estimate of hours spent by informal caregivers including potential training  
Provide an estimate of hours spent by formal caregivers including potential training  
KPI: Informal caregiver: working hours saved  
KPI: Formal caregiver: working hours saved
- Mention if the service is subsidized (tax reduction) or reimbursed by the Public Authority or, "*vice versa*", paid by patients or relatives and provide costs paid by patients or relatives.  
KPI: cost directly paid by patients and relatives (Out-of-Pocket-Payments; "OOPs").
- Define a time of transportation, and mention which kind of transport is used (personal car, taxi, ambulance, bus, metro,...) and the costs associate to transportation  
KPI: Travel cost

## 4.2 Definition of services and costs after ACTIVAGE pervasion

### **DS action list**

#### **Each DS has to do the following actions for each intersection box related to their ACTIVAGE supported LUCs:**

- 1) Gap analysis between UCs before ACTIVAGE (LUCs)/afterACTIVAGE (ACTIVAGE

supported LUCs): what remains similar, what has disappeared, what service has been reconfigured through tech, what new service is implemented, additional costs linked to reconfiguration of services...

- 2) Provide an estimate of the cost for the assistive technologies implemented within ACTIVAGE:  
**KPI: service costs (these costs include: device cost + installation costs + training costs + formal caregivers' costs for the public healthcare system. For this point, it is not necessary that all the listed costs are represented, they vary depending on the local services)**
- 3) Provide an estimate of hours spent by informal caregivers including potential training  
Provide an estimate of hours spent by formal caregivers including potential training  
**KPI: Informal caregiver: working hours saved**  
**KPI: Formal caregiver: working hours saved**
- 4) Mention if the service is subsidized (tax reduction) or reimbursed by the Public Authority or, "*vice versa*", paid by patients or relatives and provide costs paid by patients or relatives.  
**KPI: cost directly paid by patients and relatives (Out-of-Pocket-Payments; "OOPs").**
- 5) Define a time of transportation, and mention which kind of transport is used (personal car, taxi, ambulance, bus, metro...) and the costs associate to transportation  
**KPI: Travel cost**

This approach will be further refined in D6.7. This refinement is required in order to allow a real alignment with the Impact Attainment Strategy (T8.1).

## 5 CONCLUSION AND FUTURE STEPS

The socio-economic analysis as defined within WP6 and deployed according to the methods and tools defined within the GLocal evaluation framework (ref. D6.1, D6.2, D6.3 and D6.6) is progressing. As far as today (M26), the evaluation was focused on assessing the “Baseline” data according to the defined KPIs. The initial found situation shows a variable status according to the different DSs. This has been caused by the different type of users recruited (for instance, some DSs’ services focus on post-ictus patients, while, some others on elderly affected by cognitive decline).

The different environments and ecosystems are crucial too in order to explaining the different results among the DSs. At this initial stage of the evaluation, the ecosystems are not showed in the presented analysis (ref. chapter 2) but this aspect will be crucial when the final socio-economic evaluation will be done (M42).

The next D6.7 (M30) will be responsible to show an update in terms of baseline and intermediate evaluation. Additionally, the identified tools, according to a button-up and co-creation approach, if needed, will be refined.

## 6 REFERENCES

1. ACTIVAGE Proposal SEP Part B (Section 1, Section 2; Annex III)
2. ACTIVAGE: D6.1 Consolidated List of KPIs and Coordinated Methodology for Evaluation
3. ACTIVAGE: D6.2 Tools and processes for the implementation of the evaluation methodology
4. ACTIVAGE: D6.3 First Interim ACTIVAGE evaluation report (pilot set-up)
5. ACTIVAGE: D6.6 Consolidated list of KPIs and coordinated methodology for evaluation
6. ACTIVAGE: D9.1 Detailed experiment plan (I to IX)
7. ACTIVAGE: D9.7 KPI Evolution Report (I to IX)

# 7 APPENDICES

## 7.1 Galizia

Baseline Galizia								
UserId	Elderly EQ-5D-3L	VAS score	Selfperception Questionnaire			UserId formal/informal carer	Carer CarerQoL-7D	CarerQ-7D Score
			QoL	Physical activity	Social Life			
DS_GAL_001	(1,1,1,2,1)	0,716	7	5	3	DS_GAL_C_001	(2,0,0,0,0,2,0)	24,2
DS_GAL_002	(2,2,2,2,1)	0,556	8	8	3	DS_GAL_C_002	(1,1,2,0,1,1,2)	71,1
DS_GAL_003	(3,3,2,2,2,)	0,101	6	2	3	DS_GAL_C_003	(2,2,2,2,2,1,2)	97,6
DS_GAL_004	(2,1,1,1,1)	0,721	5	10	3	DS_GAL_C_004	(0,1,0,2,2,1,2)	61,8
DS_GAL_005	(2,1,1,2,2)	0,549	5	5	5	DS_GAL_C_005	(2,0,0,0,0,1,0)	21,7
DS_GAL_006	(2,2,2,1,1)	0,636	4	2	3	DS_GAL_C_006	(2,0,0,2,1,2,0)	46,8
DS_GAL_007	(1,1,1,1,2)	0,704	5	7	6	DS_GAL_C_007	(2,0,0,0,0,1,0)	21,7
DS_GAL_008	(1,1,1,1,2)	0,704	6	2	2	DS_GAL_C_008	(2,2,2,2,2,0,2)	91
DS_GAL_009	(2,1,2,3,3)	0,147	4	2	0	DS_GAL_C_009	(2,2,2,2,2,1,2)	97,6
DS_GAL_010	(2,1,1,1,2)	0,629	7	6	5	DS_GAL_C_010	(2,2,2,2,2,2,2)	100
DS_GAL_011	(2,2,2,2,1)	0,556	5	6	6	DS_GAL_C_011	(2,2,2,2,2,2,2)	100
DS_GAL_012	(1,1,1,1,1,)	1	4	2	0	DS_GAL_C_012	(2,1,0,2,1,0,0)	48,3
DS_GAL_013	(1,1,1,1,1)	1	7	6	5	DS_GAL_C_013	(2,0,0,0,0,1,0)	21,7
DS_GAL_014	(2,2,2,2,2)	0,464	5	2	2	DS_GAL_C_014	(2,2,2,2,2,0,2)	91
DS_GAL_015	(1,1,1,1,2)	0,704	7	6	5	DS_GAL_C_015	(2,1,2,2,2,2,2)	92,9
DS_GAL_016	(2,2,2,2,3)	0,155	6	3	2	DS_GAL_C_016	(2,1,2,2,2,2,2)	92,9

## 7.2 Madrid

Baseline Madrid											
UserId	Elderly EQ-5D-3L	VAS score	Social Isolation UCLA	Social isolation Score	UCLA Media	Selfperception Questionnaire			UserId formal/informal carer	Carer QoL	Carer Q-7D Score
						QoL	Physical activity	Social Life			
MDS001	1,1,2,2,1	0,753	3,2,1,2,3,3,1,1,1,2,3,3	40	46,73	6	5	7	MDSCG001	2000010	21,7
MDS002	1,1,1,2,1	0,779	2,2,3,3,2,3,2,2,2,2,4,3	41		5	3	4	MDSCG002	1121011	61,8
MDS003	1,1,1,1,1	1	3,2,3,3,4,2,2,1,2,3,2	38		5	5	8	MDSCG003	2000010	21,7
MDS004	1,1,1,1,1	1	4,4,1,2,4,4,1,1,1,4,2	27		9	7	10	MDSCG004	2000020	24,2
MDS005	1,1,1,1,1	1	4,4,1,2,4,4,1,1,1,4,2	24		10	10	10	MDSCG005	1012011	53,6
MDS006	1,1,1,1,1	1	2,3,3,3,3,2,2,2,2,3,3	44		7	4	7	MDSCG006	2122011	68,2
MDS007	1,1,1,2,1	0,779	4,4,1,2,4,4,1,2,2,1,4,1	29		6	5	10	MDSCG007	2011000	33,8
MDS008	2,1,1,2,1	0,713	3,3,2,2,3,2,2,2,3,3,3	45		7	5	6,5	MDSCG008	2000020	24,2
MDS009	1,1,1,2,2	0,69	3,2,2,4,3,1,2,1,1,4,3	28		6	5	9	MDSCG009	2001000	21,1
MDS010	1,1,1,1,1	1	3,2,2,2,3,3,3,3,3,3,3	48		7,5	6	8	MDSCG010	1112011	64,2
MDS011	2,1,2,2,1	0,687	2,3,2,3,3,3,2,1,2,3,2	45		7	6	8	MDSCG011	2000000	15,1
MDS012	1,1,1,1,1	1	4,4,2,2,4,4,1,1,1,2,4,2	29		8	8	10	MDSCG012	1221011	69
MDS013	1,1,1,1,1	1	2,2,2,3,3,2,2,2,2,3,3	44		7	7	6	MDSCG013	2022011	57,6
MDS014	3,3,3,3,3	0	4,3,4,4,4,3,2,2,3,3,3	43		5	0	7	MDSCG014	111010	47,8
MDS015	1,1,1,1,1	1	4,4,1,1,2,4,2,1,1,4,1	27		8	8	8	MDSCG015	2001020	30,2
MDS016	1,1,2,2,3	0,395	3,3,2,2,3,3,3,4,4,2,3	57		6	2	3	MDSCG016	2012010	43,6
MDS017	2,3,3,2,1	0,243	2,3,3,2,3,2,1,1,3,4,2	42		4	0	1,5	MDSCG017	2000020	24,2
MDS018	1,1,2,1,1	0,846	2,2,2,2,4,2,1,2,2,3,3	36		6	7	4	MDSCG018	2011020	42,9
MDS019	1,1,2,2,3	0,395	2,3,3,2,2,4,3,3,3,2,4	59		6	2	3	MDSCG019	1000020	21
MDS020	1,1,1,2,2	0,69	*			7,5	5	10	MDSCG020	2001010	27,7
MDS021	2,2,2,2,1	0,57	*		7	3	8				
MDS022	2,2,1,2,1	0,596	*		7	7	10				
MDS023	1,1,1,3,3	0,351	*		4	5	8				
MDS024	1,1,1,1,1	1	*		5	6	4				
MDS025	1,1,1,2,1	0,779	*		5	8	9				
MDS026	1,1,1,1,1	1	*		9	8	8				
MDS027	1,1,1,1,1	1	*		9	8	8				

## 7.3 Finland

Baseline Finland								
Userld	Elderly EQ-5D-3L	VAS score	Selfperception Questionnaire			Userld formal/informal carer	Carer CarerQoL-7D	erQ-7D ScC
			QoL	Physical activity	Social Life			
User_DS_FIN_001	(9,1,2,1,1)	0,8						
User_DS_FIN_002	(2,1,1,2,1)	0,641						
User_DS_FIN_003	(2,1,1,2,1)	0,641						
User_DS_FIN_004	(1,1,1,1,1)	1						
User_DS_FIN_005	•	•						
User_DS_FIN_006	•	•						
User_DS_FIN_007	21221	0,627	10	10	5			
User_DS_FIN_008	11111	1	10	10	5			
User_DS_FIN_009	13211	0,423	5	5	5			
User_DS_FIN_010	21111	0,721	7	0	3			
User_DS_FIN_011	11121	0,716	7	6	6			
User_DS_FIN_012	21121	0,641	8	7	7			
User_DS_FIN_013	(1,1,1,2,2	0,624	5	5	5,5			
User_DS_FIN_014	(2,2,2,3,1,	0,26	5	2,5	5			
User_DS_FIN_015	(1,1,1,1,1,	1	10	10	10			
User_DS_FIN_016	(1,1,1,2,2,	0,624	7	8	3			
User_DS_FIN_017	(2,1,1,2,1,	0,641	5	5	9			
User_DS_FIN_018	(1,1,1,3,3,	0,236	3	4	5			
User_DS_FIN_019	(2,1,1,2,1,	0,641	7,8	5	9			
User_DS_FIN_020	(1,1,1,1,1,	1	8	7,5	5			
User_DS_FIN_021	(2,1,1,2,1)	0,641	9	8	10			
User_DS_FIN_022	(2,1,1,3,1)	0,345	6	8	2			
User_DS_FIN_023	(2,1,2,3,2)	0,239	6	3	8			
User_DS_FIN_024	(1,1,1,2,1)	0,716	5	10	10			
User_DS_FIN_025	(2,1,2,2,1)	0,627	6	3	2			

## 7.4 Valencia

Baseline Valencia								
Userid	Elderly EQ-5D-3L	VAS score	Selfperception Questionnaire			Userid formal/informal carer	Carer CarerQoL-7D	CarerQ-7D Score
			QoL	Physical activity	Social Life			
ACTATZ002	*	*	7	5	5	ACTATZ111A	2 2 1 2 2 1 0	81,7
ACTATZ003	*	*	2	1	5	ACTATZ112B	1 2 2 1 2 1 2	91,2
ACTATZ004	*	*	7	8	3	ACTATZ112C	0 2 2 2 2 1 2	82,5
ACTATZ005	*	*	8	7	10	ACTATZ150A	1 2 2 1 2 0 2	84,6
ACTATZ006	*	*	2	0	0	ACTATZ191A	2 2 2 2 2 2 2	100
ACTATZ007	*	*	6	6	10	ACTATZ191C	2 2 2 2 2 2 2	100
ACTATZ008	*	*	8	6	6	ACTATZ196A	2 2 1 1 2 2 2	96,1
ACTATZ009	*	*	8	8	6	ACTATZ201A	2 1 2 1 2 0 2	80,6
ACTATZ010	*	*	5	3	3	ACTATZ203A	1 1 2 2 2 2 2	89,7
ACTATZ011	*	*	9		10	ACTATZ205A	2 1 2 2 2 0 2	83,8
ACTATZ012	*	*	7	5	3	ACTATZ205B	2 2 2 2 2 0 2	90,9
ACTATZ013	*	*	8	6	8	ACTATZ210A	2 2 1 0 1 2 2	83,2
ACTATZ014	*	*	5	5	2	ACTATZ218A	2 1 1 1 2 0 1	77,9
ACTATZ015	*	*	4	5	5	ACTATZ219	2 1 1 1 2 0 1	77,9
ACTATZ016	*	*	8	5	8	ACTATZ219	1 2 1 2 2 0 2	87
ACTATZ017	*	*	7	8	9	ACTATZ219	1 2 1 2 2 1 2	93,6
ACTATZ018	*	*	6	2	7	ACTATZ223A	0 2 2 1 1 2 1	73

## 7.5 Leeds

Baseline Leeds										
Userid	Elderly EQ-5D-3L	VAS score	Social isolation score (UC)	UCLA media	Selfperception Questionnaire			Userid formal/informal carer	CarerQoL-7D Score	CarerQ-7D Score
					QoL	Physical activity	Social Life			
User_DS_Leeds_01	1,1,1,2,1	0,716	45	47,86	9	5	10	*	*	
User_DS_Leeds_02	1,1,1,1,1	1	47		10	10	9	*	*	
User_DS_Leeds_03	2,2,3,3,2	0,154	52		3	2	7	*	*	
User_DS_Leeds_04	2,2,3,3,2	0,154	50		3	2	2	*	*	
User_DS_Leeds_05	1,1,1,2,1	0,716	42		8	2	3	*	*	
User_DS_Leeds_06	1,1,1,1,1	1	46		10	8	10	*	*	
User_DS_Leeds_07	2,1,2,2,1	0,627	45		*	*	*	*	*	
User_DS_Leeds_08	2,2,1,2,2	0,477	54		7	4	7	*	*	
User_DS_Leeds_09	1,1,1,2,1	0,716	47		9	9	10	*	*	
User_DS_Leeds_10	2,2,2,3,2	0,168	51		4	4	3	*	*	
User_DS_Leeds_11	*	*	53		*	*	*	*	*	
User_DS_Leeds_12	*	*	42		8	7	8	*	*	
User_DS_Leeds_13	1,1,1,2,3	0,316	49		5	5	2	*	*	
User_DS_Leeds_14	2,1,2,2,1	0,627	47		*	*	*	*	*	
User_DS_Leeds_15	1,1,1,1,1	1	*		*	*	*			
User_DS_Leeds_16	1,1,1,1,1	1	47		10	5	10			
User_DS_Leeds_17	2,2,2,2,2	0,464	*		*	*	*			
User_DS_Leeds_18	1,1,1,2,1	0,716	45		*	*	*			
User_DS_Leeds_19	1,1,1,1,1	1	47		10	10	10			
User_DS_Leeds_20	2,1,2,1,1	0,707	51		8	4	5			
User_DS_Leeds_21	2,2,3,2,2	0,234	*		*	*	*			
User_DS_Leeds_22	2,1,2,2,3	0,227	57		7	3	5			
User_DS_Leeds_23	1,1,2,2,2	0,611	48		7	5	5			
User_DS_Leeds_24	1,2,2,2,1	0,631	47		8	5	10			
User_DS_Leeds_25	1,1,2,2,1	0,703	48		*	*	*			
User_DS_Leeds_26	1,1,2,2,2	0,611	41		4	7	8			
User_DS_Leeds_27	1,1,1,2,1	0,716	47		9	5	9			
User_DS_Leeds_28	*	*	*		*	*	*			
User_DS_Leeds_29	1,1,1,2,1	0,716	43		5	3	5			
User_DS_Leeds_30	1,1,1,1,1	1	48							

## 7.6 Greece

Baseline Greek											
Userid	Elderly EQ-5D-3L	VAS score	Social Isolation UCLA	Social isolation Score	Selfperception Questionnaire			Userid formal/informal carer	Carer CarerQoL-7D	CarerQ-7D Score	
					QoL	Physical activity	Social Life				
GR_DCCG_TR_01	21221	0,627	,1,2,2,3,3,2,4,4,3,3,2,3,	56	6	5	4	GR_DCCG_TR_C1	1102220	61,1	
GR_DCCG_TR_02	2,1,1,2,3	0,24	,1,2,4,3,2,2,3,3,3,2,2,	54	2	2	0	GR_DCCG_TR_C2	2022120	60,3	
GR_DCCG_TR_03	22222	0,464	,2,3,3,2,1,1,4,4,3,4,2,1,	54	7	2	5	GR_DCCG_TR_C3	1102011	51,5	
GR_DCCG_TR_04	23322	0,162			1	1	4	GR_DCCG_TR_C4	1001111	51,1	
GR_DCCG_TR_05	11112	0,704	,1,1,2,2,2,2,4,3,2,3,3,2,	52	7	5	5	GR_DCCG_TR_C5	2010020	36,9	
GR_DCCG_TR_06	11213	0,382	,4,3,4,3,3,3,4,3,3,4,3,3,	65	5	5	10	GR_DCCG_TR_C6	1011010	37,2	
GR_DCCG_TR_07	11113	0,395	,3,3,3,3,4,3,3,3,4,3,4,3,	67	3	8	9	GR_DCCG_KR_C1	1111011	61	
GR_DCCG_KR_01	22222	0,464	,2,2,4,3,2,2,2,2,2,2,2,2,	51	2	3	8	GR_DCCG_KR_C2	(0)222101	67,1	
GR_DCCG_KR_02	22122	0,477	,2,2,2,3,3,1,3,2,2,2,2,3,	46	3	2	5	GR_DCCG_KR_C3	1012011	53,6	
GR_DCCG_KR_03	21111	0,721	,3,2,2,3,1,2,4,3,2,1,2,3,	50	5	5	5	GR_DCCG_KR_C4	1101111	61,7	
GR_DCCG_KR_04	22212	0,544	,3,1,2,3,2,2,4,2,4,3,3,2,	52	5	4	3	GR_DCCG_KR_C5	1101011	48,3	
GR_DCCG_KR_05	22221	0,556	,3,3,2,2,2,3,3,3,2,3,3,2,	54	7	6	7	GR_DCCG_LR_C1	1112110	64,4	
GR_DCCG_LR_01	22122	0,477	,3,3,4,3,1,2,3,3,3,3,2,	50	3	4	2	GR_DCCG_LR_C2	1000010	18,5	
GR_DCCG_LR_02	21122	0,549	,3,2,4,1,2,2,3,1,2,2,3,3,	50	3	4	3	GR_DCCG_MM_C_001	2222222	100	
GR_DCCG_VR_01	22221	0,649	,4,4,4,4,3,3,4,3,3,4,3,4,	66	0	2	0	GR_DCCG_MM_C_002	1212222	96,1	
GR_DCCG_KT_01	22211	0,636	,1,1,4,1,1,1,1,1,1,3,1,2,	32	9	3	9	GR_DCCG_MM_C_003	2201220	68,3	
GR_DCCG_KT_02	11121	0,716	,3,2,3,2,1,1,3,2,3,3,3,3,	46	7	10	10	GR_DCCG_MM_C_004	2222221	98,2	
GR_DCCG_MM_O_00	22221	0,556			10	5	0	GR_DCCG_MM_C_005	1222122	90	
GR_DCCG_MM_O_00	11122	0,624			7	7	8	GR_DCCG_MM_C_006	2222222	100	
GR_DCCG_MM_O_00	21222	0,535			5	0	2	GR_DCCG_MM_C_007	1122222	89,7	
GR_DCCG_MM_O_00	11122	0,624			6	8	8	GR_DCCG_MM_C_008	2221212	94,4	
GR_DCCG_MM_O_00	11112	0,704			8	8	6	GR_DCCG_MM_C_009	1122122	82,8	

## 7.7 RER

Baseline RER										
UserId	Elderly EQ-5D-3L	VAS score	Social Isolation UCLA	Social isolation Score	Selfperception Questionnaire			UserId formal/informal carer	Carer CarerQoL-7D	CarerQ-7D Score
					QoL	Physical activity	Social Life			
User_DS_RER_001	2,2,2,2,2	0,464	2,3,4,3,4,1,1,2,2,3,2,2,2,2,4,3,1,1,1,2	45	3	4	3	001 Carer	1,2,0,1,2,0,1	69,2
User_DS_RER_002	1,1,1,2,1	0,716	3,2,2,1,4,2,1,3,1,3,1,2,4,2,3,2,3,3,1,2	45	5	5	3	002 Carer	1,0,0,0,1,1,1	45,1
User_DS_RER_003	2,2,2,2,2	0,464	2,3,2,2,2,2,2,2,1,2,1,2,2,2,2,2,2,2,2,2	39	4	3	7	003 Carer	1,2,2,2,2,2,1	95
User_DS_RER_004	x	x	x	x	x	x	x	004 Carer	2,1,2,2,2,2,1	91
User_DS_RER_005	x	x	x	x	x	x	x	005 Carer	2,2,2,2,2,1,2	97,5
User_DS_RER_006	2,2,2,2,2	0,464	1,3,2,2,4,2,2,3,2,3,3,3,2,3,3,2,2,4,3,2	52	4	6	7	006 Carer	2,1,1,1,2,1,2	86,4
User_DS_RER_007	x	x				x	x	x	x	x
User_DS_RER_008	x	x				x	x	x	x	x
User_DS_RER_009	x	x				x	x	x	x	x
User_DS_RER_010	2,2,2,2,2	0,464	1,1,1,1,3,2,1,3,1,1,1,3,3,1,1,1,1,3,1,2	32	4	5	6	010 Carer	2,1,1,1,2,1,1	84,5
User_DS_RER_011	x	x	x	x	x	x	x	x	x	x
User_DS_RER_012	x	x	x	x	x	x	x	012 Carer	2,2,1,2,2,0,2	90,2
User_DS_RER_013	x	x	x	x	x	x	x	013 Carer	2,2,1,2,2,0,2	90,2
User_DS_RER_014	2,2,2,3,3	0,076	2,2,2,3,2,1,2,2,2,2,2,2,2,2,2,2,2,3,3	42	4	3	6	014 Carer	2,1,2,0,1,1,1	72,4
User_DS_RER_015	x	x	x	x	x	x	x	015 Carer	1,2,1,2,2,1,2	93,6
User_DS_RER_016	x	x	x	x	x	x	x	016 Carer	2,0,1,0,0,2,2	52
User_DS_RER_017	x	x	x	x	x	x	x	017 Carer	2,1,1,0,2,1,1	78,5
User_DS_RER_018	x	x	x	x	x	x	x	018 Carer	2,1,1,2,2,2,1	90,2
User_DS_RER_019	x	x	x	x	x	x	x	019 Carer	1,2,1,1,2,2,2	92,9
User_DS_RER_020	x	x	x	x	x	x	x	020 Carer	1,0,1,1,2,2,1	73,2

## 7.8 Woquaz

Baseline Woquaz									
Userid	Elderly EQ-5D-3L	VAS score	Physical well being	Selfperception Questionnaire			Userid formal/informal carer	Carer CarerQoL-7D	CarerQ-7D Score
				QoL	Physical activity	Social Life			
AJT0101			1				AJT0102		
AJT0201	22232	0,168	2	4	4	8	AJT0402		
AJT 0202	11112	0,704	1	7	8	8	AJT0502		
AJT0301			2				AJTx01	1122102	73,7
AJT0401	21221	0,627	1	5	5	9	AJTx02		
AJT0501			1				AJTx03		
			2				AJTx04		
AJT0601	11111	1	2	8	8	10	AJT2302		
AJT0701	21231	0,331	1	7	5	10	AJT2502		
AJT0801			1				AJT2802		
AJT0901			1				AJT3102		
AJT1001			3				AJTWG01		
AJT1101			2				AJTWG02		
AJT1201			2				AJTWG03		
AJT1301			1				AJTWG04		
AJT1401	21232	0,239	1	4	4	3	AJTWG05		
AJT1501			1				AJTWG06		
							AJTWG07		
							AJTWG08		