METPEX

Deliverable 5.3

"TESTING THE INDICATORS AND DEVELOPING BENCHMARKS"

Publishable summary

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Summary & Purpose

- Test indicators provided in D5.2 in order to **validate** them.
- Obtain a final set of **Super Quality Indicators** (SQI) that would be useful for stakeholders involved.
- Clarify the **strengths and weaknesses** of each proposed indicator.
- Evaluate SQI through a **SMART** (Specific, Measurable, Achievable, Realistic and Time-bound) methodology combined with other possible criteria coming from partners knowledge

Approach (1)

The purpose of this Deliverable is to give stakeholders some guidelines to evaluate quality performance through a set of tested **Super Quality Indicators**.

Steps of the procedure:

1. Definition of **Key Performance Indicator** (KPI) concept and its use in Public Transport monitoring.

2. **Analyze** each indicator in order to test the stability for benchmarking purposes.

3. Process database from WP4 to **evaluate** the **link between features** of the interviewees **and** the **level of satisfaction.**

Approach (2)

4. Filter indicators obtained in D5.2 and group them in accordance with the previous definitions of a KPI, obtaining a set of **Super Quality Indicators** (SQI).

5. Define **criteria for evaluation** of SQI, based on those used in SMART tests.

6. **Expert validation** of Super Quality Indicators, in terms of the predefined criteria.

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KPI definition

KPIs are **measuring tools focused on those aspects related to company performance that are key** to its success, both today and in the future. Not all performance metrics have to be KPIs.

Successful KPIs meet several **criteria**:

- They are based on **unambiguous consistent business processes** each with a clear purpose.
- The result of each underlying process is **measurable** either by quantity or quality.
- The company can define a **"good" vs.** a **"bad"** result.
- The **results are actionable**; management can have a positive impact on the result by adjusting business operations and/or management decisions.

KPIs and Quality measurement in Public Transport (1)

Performance evaluation is nowadays used by all agents involved in transport activities for different purposes[1]:

- Reporting public transport performance to the authorities and public.
- Monitoring service improvements, assessing past interventions, attracting more riders and for increasing the appeal of public transport.
- Diagnosing problems and the health of the system, making course corrections and refining strategy.
- Incentivizing quality improvements.
- Responding to user feedback.
- Providing decision making bodies with accurate information to support the needed actions for investments, budgeting, etc.
- Providing the public with information on transit performance so they can choose it and use it.
- Setting service standards.
- Aiding internal communications and management.
- Noting community benefits.

[1] Dhingra (2011) "Measuring Public Transport Performance".

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KPIs and Quality measurement in Public Transport (2)

Expected Quality

The level of quality demanded by the customer. It can be defined in terms of explicit and implicit expectations. Tools for evaluation: revealed and stated preference methods.

Targeted Quality

This is the level of quality that the transport provider aims to provide for its passengers. It should be defined according to the level of quality expected by the passengers, external and internal pressures, and budgetary constraints and competitor/market performance. Tools for evaluation: customer charters and guarantees of service, partnership agreements, quality standards and certification, quality contracts, quality tenders and evaluation procedures, etc.

Delivered Quality

This is the level of quality that is achieved on a day-to-day basis in normal operating conditions. Disruptions to service, whether they are the fault of the undertaking or not, are considered. Tools for evaluation: compensation schemes for the benefit of the users, reward/penalty schemes concerning operators and authorities, internal quality measurement, self assessment methods and benchmarking (KPIs).

Perceived Quality

This is the level of quality perceived by passengers during their journeys. Tools for evaluation: customer satisfaction index (CSI), customer charter feedback systems.

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Super Quality Indicators (SQI)

SQI-1: Accessibility to transport services and infrastructures.

SQI-2: Availability, adequacy and quality of pre-trip and traveling information.

SQI-3: Safety and Security on board, interchanges and waiting spaces.

SQI-4: Adequacy and quality of infrastructures.

SQI-5: Travel experience on board.

SQI-6: Reliability of services.

SQI-7: Value for money.

SQI-8: Availability of ticketing options and fares.

SQI-9: Comfort of facilities and/or vehicles.

SQI-10: Satisfaction for users of motorised private transport means.

SQI-11: Satisfaction of specific needs for different users groups.

SQI-12: Possibility and easiness of intermodal journeys.

SQI-13: Availability of services.

SQI-14: Staff helpfulness and behaviour.

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Criteria for SQI evaluation

Specific:

Levels of evaluation as specific:

1. It is clear by itself, no place to confusion
2. Other aspects of service have to be considered to understand it
3. Not clear, very difficult to understand or easy to misunderstand

Independent from other indicators:

Levels of evaluation as "independence":

1. Not combination of other different indicators
2. Calculated by using the same data used for other indicators.
3. Combination of other different indicators

Measurable:

Levels of grading for evaluation may be considered:

1. Directly measureable (the indicator requires the measurement of only one variable)
2. Easy to calculate (the indicator requires the measurement of few variables)
3. Less easy to calculate (the indicator requires the measurement of many variables)
4. Non-measurable

Timely:

Levels of evaluation as "time-related":

1. Periodicity clearly expressed.
2. Time-relation could be understood or supposed.
3. Not time related.

Indicators used in other studies:

Levels of evaluation as "already used":

1. In different countries at operational level (operators or stakeholders)
2. In different countries at a theoretical level (studies or recommendations)
3. In a specific country at an operational level (operators or stakeholders)
4. In a specific country at a theoretical level (studies or recommendations)
5. Not used yet.

Useful:

The indicator follows the next criteria:

- Addresses the area considered.
- Provides information which decision makers can use to evaluate status and take decisions.
- Is considered relevant by those that define strategies.
- Addresses the aspects that could support the improvement of services.
- Can be used by the stakeholders involved.

Levels of evaluation as "useful":

1. The indicator fulfills all the mentioned criteria.
2. The indicator fulfills more than half of the mentioned criteria.
3. The indicator fulfills less than half of the mentioned criteria.
4. The indicator doesn't fulfill any of the mentioned criteria.

Example of SQI evaluation

SQI-2. Availability, adequacy and quality of pre-trip and traveling information

Specific:
Clearly defined and refers specifically to the information given to the user. It doesn't include additional information, as can be seen in the entire variables that compose this SQI.
Any stakeholder can understood it in the same way, without ambiguities.
Level 1: It is clear by itself, no place to confusion.

Measurable:
It considers many different variables to define the information received by the user previously and during his trip.
However, the variables considered are clearly defined.
Some of them are completely and directly measured, but others can require a more difficult accounting method.
Level 3: Less easy to calculate (the indicator requires the measurement of many variables)

Timely:
In the title is specified when should be measured, in this case before starting each trip and during the time spent on it.
It does not specify the periodicity of measurement,
Level 2: Time-relation could be understood or supposed.

Independent from other indicators:
As in the previous SQI, none of the remaining indicators can express the aspects included in SQI-2. It is not possible to define the availability, adequacy and quality of pre-trip and traveling information by combining any of the 13 remaining SQI. This is due to the fact that a previous hard statistical process has been developed to demonstrate independence of indicator.
Level 1: the indicator cannot be expressed as a combination of other different indicators

Indicator used in other studies:
Reviewing information collected on D5.1. "The METPEX tool in relation with the state of the art on transport indicators", SQI-2: Availability, adequacy and quality of pre-trip and traveling information is present in different studies and approaches.
Some examples of them are: Tyrinopoulos and Aifadopoulou 2008, Nathanail 2008, QUATTRO project, BEST project.
Level 2: Used in different countries in a theoretical level (used in some studies or recommendations)

Usefulness:
In this case, SQI-2 is very useful for transport operators, policy makers, transport administrators and also final users.
Level 1: It fulfils all the aspects considered to define an indicator as useful.

Results of evaluation

Criteria¤	Levels¤
a.·Measurable¤	1-4¤
b.·Specific¤	1-3¤
c.·Timely¤	1-3¤
d.·Objective¤	1-3¤
e.·Used¤	1-5¤
f.·Independent¤	1-3¤
g.·Useful¤	1-4¤

a lower value is a better option!!!

	a. Measurable	b. Specific	c. Timely	d. Used	e. Independent	f. Useful	AVERAGE VALUE
SQI-1: Accessibility to transport services and infrastructures	3	1	2	1	1	1	2.53
SQI-2: Availability, adequacy and quality of pre-trip and traveling information	3	1	2	2	1	1	2.73
SQI-3: Safety and Security on board, interchanges and waiting spaces	3	1	3	1	1	1	2.86
SQI-4: Adequacy and quality of infrastructures	3	1	3	2	1	1	3.06
SQI-5: Travel experience on board	3	1	3	2	1	1	3.06
SQI-6: Reliability of services	1	1	2	2	1	1	2.23
SQI-7: Value for money	2	1	3	2	1	1	2.81
SQI-8: Availability of ticketing options and fares	3	1	2	1	1	1	2.53
SQI-9: Comfort of facilities and/or vehicles	3	1	3	1	1	1	2.86
SQI-10: Satisfaction for users of motorised private transport means	2	2	2	5	2	1	3.75
SQI-11: Satisfaction of specific needs for different users groups	3	3	2	5	1	1	4
SQI-12: Possibility and easiness of intermodal journeys	2	1	2	2	2	1	2.82
SQI-13: Availability of services	2	1	2	2	1	1	2.48
SQI-14: Staff helpfulness and behaviour	3	1	2	2	1	1	2.73

Conclusions

- Regarding score obtained by SQIs it is remarkable that almost all are scored below 3 points (mean value), that is, **almost all of them fulfil all criteria** with a value above mean.

- **Only 2 SQI** ("SQI-10: Satisfaction for users of motorised private transport means" and "SQI-11: Satisfaction of specific needs for different users groups") are considerably **above 3 points**. They are highly penalised by the use of the indicator before (in previous studies) or the independence, but in both cases their evaluation **don't overcome 4 points**.

- **Best SQI** according to defined criteria is **"SQI-6: Reliability of services"**, this is mainly due to the fact that is the criterion with best measurability level, which highly affects its final value.