

# INTEROPERABILITY SOLUTIONS FOR EUROPEAN PUBLIC ADMINISTRATIONS MONITORING AND EVALUATION

# D03.05 ACTION 4.2.3 UTILITY MONITORING REPORT

Framework Contract n° DI/07173 31<sup>st</sup> July 2015

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### **EXECUTIVE SUMMARY**

The purpose of this section is to provide an overview of the key findings of the Utility monitoring and evaluation activity.

The survey for measuring the Utility of Action 4.2.3 – National Interoperability Framework Observatory (NIFO), was launched at the first semester of 2015. The goal of the survey was to understand and identify the NIFO usefulness, and the benefits which users might gain from it.

The survey was designed in the EUSurvey tool and announced in the NIFO community, as well as distributed to the NIFO representatives by e-mail. The survey was launched on the 20<sup>th</sup> of April 2015 and was active until the 18<sup>th</sup> of May 2015. There were two reminders sent out – first on the 3<sup>rd</sup> of May and second on the 11<sup>th</sup> of May 2015.

The survey result analysis (see Table 1) shows the Action 4.2.3 Utility scores. The Utility score is 3.95 (scale: 1...5).

The detailed score calculation process is described in Section 4.1.3.

#### TABLE 1 - ACTION 4.2.3 SURVEY RESULTS

Evaluation criteria	Mean <sup>1</sup>	Mode <sup>1</sup>	StDev <sup>1</sup>	StErr <sup>1</sup>
Action 4.2.3 Utility	3.95	4	0.70	0.06

**Conclusion:** Based on the survey data analysis, NIFO meets its main objectives. It allows sharing experience and best practices on the national interoperability. The users are satisfied with the NIFO community's communication activities and the current amount of information and news that appear on the community.

However, there is a need for drawing a special attention to the NIFO representatives list, the "Compare NIFs" tool and its comparative analysis functionality.

<sup>&</sup>lt;sup>1</sup> See Glossary (Section 6.4)

## **REVISION HISTORY**

Date	Version	Description	Authors	Approved by
31-July-2015	1.00	For QA purpose, the accepted draft version is changed into the final version. No other changes are implemented.	CGI-Accenture	
01-June-2015	0.20	Updated version	CGI-Accenture	
26-May-2015	0.10	Initial version	CGI-Accenture	

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### **1. INTRODUCTION**

CGI-Accenture has been requested to deliver a Utility Monitoring and Evaluation Report as part of the execution of the ISA programme monitoring (Technical Annex for Specific Contract N° 52 under Framework contract N°DI/07173).

Based on the scope of the Specific Contract, the Utility is to be measured for 13 actions. This report covers the Utility measurement for the Action 4.2.3 – National Interoperability Framework Observatory (NIFO).

This document is divided into the following sections:

- Section 1 provides an overview of the structure of the report;
- Section 2 provides an overview of the methodology used for the Utility measurements;
- Section 3 summarises the collected data;
- Section 4 focuses on the survey result overview and data analysis;
- Section 5 provides the survey conclusions and recommendations;
- Section 6 appendix includes:
  - Statement mapping per dimensions;
  - Detailed list of respondents' positions;
  - Raw data export;
  - o Glossary.

## 2. SURVEY METHODOLOGY

A common methodology was developed for all surveys that enables the comparison between the different survey results. This section explains how the Utility is measured and what dimensions the Action 4.2.3 covered. The last part of this section describes the architecture of the survey.

### **2.1. UTILITY**

'Utility' is defined as the extent to which the effects (impact) of an ISA action correspond with the needs, problems and issues to be addressed by the ISA programme<sup>2</sup>.

Utility is measured using an adaptation of the VAST (Value ASsessment Tool) methodology<sup>3</sup>, considering an additional dimension related to the Global and Intermediate objectives of the ISA programme.

The assessment is based on the following dimensions:

- Value for the European Union: Looks at the assessment of the external value of an information system or an IT project. External value of a project is considered to be any benefit which is delivered outside the Commission itself. This external aspect is divided into two parts: society (Social Value) and individuals (External Users' Value);
- Value for the European Commission: Encompasses criteria through which the internal value of an IT project can be assessed. All factors that can contribute to the improvement of the EC performance should be considered as delivering an internal value;
- Value for cross-border and cross-sector interoperability: Covers all aspects of how information system or IT project can support the efficient and effective cross-border and cross-sector interaction between the European Public Administrations.

The ISA Programme is mainly focusing on the value for the cross-border and cross-sector interoperability dimension. In this context, the value for EC is considered to have a lower weight than other dimensions. Consequently, less focus is put on this dimension.

### **2.2. SURVEY ARCHITECTURE**

In order to measure the Utility, a respondent is supposed to grade the statements based on his/her level of agreement. A 5-point Likert scale<sup>4</sup> is used as a grading scale, ranging from 'Strongly Agree' to 'Strongly Disagree' with an additional 'No Opinion/Not Applicable' option.

For each presented statement the user is able to provide his/her opinion and suggestions for improvement in a free text field in case he/she rated the statement with 'Disagree' or 'Strongly Disagree'.

As the responses collected are depending on the users' profiles, the user is requested to answer skip logic questions with either 'Yes' or 'No' and afterwards more questions are presented if the respondent selected 'Yes'.

<sup>&</sup>lt;sup>2</sup> DG BUDG (2004), "Evaluating EU activities, a practical guide for the Commission services"

<sup>&</sup>lt;sup>3</sup> More information can be found on: http://ec.europa.eu/dgs/informatics/vast/

<sup>&</sup>lt;sup>4</sup> A Likert Scale is a widely used scaling method developed by Rensis Likert. Likert scale refers to the use of an ordinal 4- or 5-point rating scale with each point anchored or labeled.

## 3. ACTION 4.2.3 SURVEY DATA SUMMARY

Table 2 gives an overview on the survey start date, end date, the amount of responses collected and the survey launching method.

#### TABLE 2 – ACTION 4.2.3 SURVEY DATA SUMMARY

Action 4.2.3 - NIFO	
Start date:	20/04/2015
End date:	18/05/2015
Amount of responses:	19
The survey launching method:	Announcement on the Community and e-mail notification

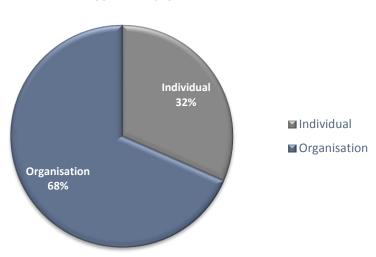
## 4. ACTION 4.2.3 SURVEY RESULTS AND ANALYSIS

This section aims to provide a detailed overview and survey result analysis on the survey response range at the following levels:

- Overall Survey Response shows a complete survey response range collection covered by the Action 4.2.3 Utility survey;
- **Result Analysis According to the Evaluation Criteria** provides a score calculation by evaluation criteria dimensions and the overall evaluation criteria score.

### 4.1. ACTION 4.2.3 SURVEY RESULT OVERVIEW

Figure 1 shows the classification of the respondent type. The majority, thirteen respondents (68%), submitted responses on behalf of their organisations and six (32%) responded as individuals.



#### FIGURE 1 – RESPONDENT TYPE

Based on the responses received from 15 different countries, Figure 2 shows three main NIFO features and respondent countries that had referred to those features.

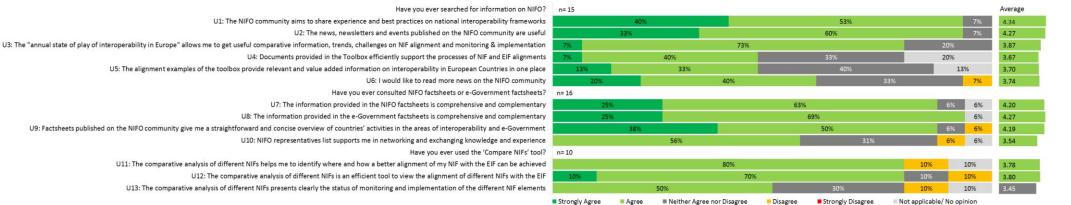
Have searched for information on NIFO	Belgium Bulgaria Croatia Cyprus Czech Republic Denmark Estonia Finland Malta Netherlands Romania Switzerland
Have consulted NIFO factsheets or e- Government factsheets	Belgium Bulgaria Croatia Cyprus Czech Republic Denmark Estonia Finland Luxembourg Malta Netherlands Romania
Have used the 'Compare NIFs' tool	Belgium Bulgaria Croatia Denmark Estonia Finland Luxembourg

## FIGURE 2 - ACTION 4.2.3 FEATURES AND CORRESPONDING COUNTRIES

#### 4.1.1. Overall Survey Response Overview

Figure 3 gives an overview of the overall survey results. The statements were graded based on the users who responded 'Yes' to the skip logic question (a question that directs a respondent to a series of questions based on their responses).





Neither Agree nor Disagree Strongly Agree Agree Disagree n - number of the respondents who assessed the criteria

#### **4.1.2.** Comments and Recommendations

Table 3 gives a detailed overview of the comments received for Action 4.2.3 once the respondent chose a 'Disagree' or 'Strongly Disagree' option to evaluate the survey statement.

#### TABLE 3 – ACTION 4.2.3 USER COMMENTS

**NIFO** factsheets

Didn't really have the opportunity to contact anyone in particular. I was never contacted by individual representatives.

Table 4 presents comments received from respondents who chose "No" answer to the following questions:

- Have you ever searched for information on NIFO?
- Have you ever consulted NIFO factsheets or e-Government factsheets?
- Have you ever used the 'Compare NIFs' tool?

#### TABLE 4 – ACTION 4.2.3 COMMENTS FROM NONUSERS

Have you ever	Check initiatives in interoperability and e-Government matters in various countries
searched for information on NIFO?	no need
Have you ever consulted NIFO factsheets or	We are not part of EU and have different conditions
e-Government factsheets?	no need
Have you ever used the	No. Comparing NIFs is not something that needs to happen often.
	"An additional way": perhaps using content analysis of provided information followed by a conversation with country representatives for clarification to be sure what is being compared
'Compare NIFs' tool?	We are not part of EU and have different conditions
	We do not see a need to compare NIFs

Table 5 gives a detailed overview of the recommendations received for Action 4.2.3.

#### TABLE 5 – ACTION 4.2.3 RECOMMENDATIONS

	Usability of the AM could be improved though simplification of the AM model. A better identification of achievement of Implementation and Monitoring topics would be beneficial to the AM
	not at the moment, thank you for the work
NIFO Analytical	I'd like the news to bring more concrete examples. It helps to explain this to the readers of the Danish IT trade magazines I work for
Model document	Clearer and more precise definitions and terminologies. Exclusion of the subsidiarity principle from the overview
	It is good enough
	Whilst the analytical model is interesting for comparing the content of frameworks we do not use it because our focus is on delivery of digital services. The alignment of frameworks doesn't tell us much about the alignment of the technology, of the standards used across borders, or

	the organisational/legal/political approaches that are adopted within a country to meet specific needs. This information is much more valuable in terms of delivering or sharing interoperable cross border services
	Checking what is really going on in reality, not only relying on declarations from Member States. Trying to define more clearly the goals
NIFO data collection process	We do not centrally monitor projects that departments are involved with that are cross-border in nature. It is therefore difficult and time consuming for us to provide useful information on European projects in which the UK has involvement. Please keep requests for data to a minimum and clearly explain the benefits of harvesting this information
	Compare NIFs does not provide the possibility to compare against average. You always have to choose a set of countries. EU average would be nice to know
	The site (joinup) has too much structure. That makes it complex and hard to understand
Other recommendations	The current EIF/NIFO approach assumes that each country has a single document called an interoperability framework. In the UK we have moved away from that and have woven our thinking into various web pages that cover things such as standards, codes of practice and guidance manuals. Each of these is targeted to the people who need to use the material - often to deliver interoperable public services. However, this appears to break the NIFO model. Even though the UK is delivering interoperable, reusable services built on open standards we cannot be compared in the NIFO tool because we don't have a NIF

#### 4.1.3. Result Analysis According to the Evaluation Criteria

This section presents the method used for Utility score calculations. In order to obtain more accurate results, mean, mode, standard deviation and standard error values have been calculated.

Before performing the calculations, the 5-point Likert scale range values need to be interpreted as numeric values, i.e.:

- 5 Strongly Agree;
- 4 Agree;
- 3 Neither Agree nor Disagree;
- 2 Disagree;
- 1 Strongly Disagree;
- 0 No opinion/ not applicable was not considered for the calculation.

Mean and mode are used in statistics and hereafter in this report for measuring the Utility evaluation criteria:

- The mean<sup>5</sup> (average) is the most popular measure of location or central tendency; has the desirable mathematical property of minimizing the variance. To get the mean, you add up the values<sup>6</sup> for each case and divide that sum by the total number of cases;
- Mode refers to the most frequent, repeated or common value<sup>6</sup> in the quantitative or qualitative data.
  In some cases it is possible that there are several modes or none.

In order to measure the degree of dispersion of a probability distribution, i.e. how far the data points are from the average, the standard deviation and standard error values are applied:

- **Standard deviation**<sup>7</sup> shows the spread, variability or dispersion of scores in a distribution of scores. It is a measure of the average amount the scores in a distribution deviate from the mean. The more widely the scores are spread out, the larger the standard deviation;
- **Standard error**<sup>7</sup> is the standard deviation of the sampling distribution of a statistic. It is a measure of sampling error; it refers to error in estimates due to random fluctuations in samples. It goes down as the number of cases goes up. The smaller the standard error, the better the sample statistic is as an estimate of the population parameter at least under most conditions.

Based on the survey methodology presented in Section 2, the statements were mapped to two Utility dimensions. The detailed mapping of the statements is described in Section 6.1.

<sup>&</sup>lt;sup>5</sup> Dictionary of statistics & methodology: a nontechnical guide for the social sciences (page 226).

<sup>&</sup>lt;sup>6</sup> 5-point Likert scale range values are interpreted as numeric values like described in Section 4.1.3.

<sup>&</sup>lt;sup>7</sup> Dictionary of statistics & methodology: a nontechnical guide for the social sciences (page 375).

#### 4.1.3.1. RESULT ANALYSIS ON STATEMENT LEVEL

Table 6 presents the detailed analysis of each utility statement.

#### TABLE 6 – ACTION 4.2.3 UTILITY SCORE DETAILS ON STATEMENT LEVEL

Statement	Mean	Mode	StDev	StErr	Dimension
U1: The NIFO community aims to share experience and best practices on national interoperability frameworks	4.34	4	0.62	0.16	Value for cross-border and cross-sector interoperability Value for EU
U2: The news, newsletters and events published on the NIFO community are useful	4.27	4	0.60	0.16	Value for EU
U3: The "annual state of play of interoperability in Europe" allows me to get useful comparative information, trends, challenges on NIF	3.87	4	0.52	0.14	Value for cross-border and cross-sector interoperability
alignment and monitoring & implementation					Value for EU
U4: Documents provided in the Toolbox efficiently support the processes of NIF and EIF alignments	3.67	4	0.66	0.19	Value for EU
U5: The alignment examples of the toolbox provide relevant and value added information on interoperability in European Countries in one	3.70	3	0.76	0.21	Value for cross-border and cross-sector interoperability
place					Value for EU
U6: I would like to read more news on the NIFO community	3.74	4	0.89	0.23	Value for EU
U7: The information provided in the NIFO factsheets is comprehensive and complementary	4.20	4	0.58	0.15	Value for EU
U8: The information provided in the e-Government factsheets is comprehensive and complementary	4.27	4	0.43	0.12	Value for EU
U9: Factsheets published on the NIFO community give me a straightforward and concise overview of countries' activities in the areas of interoperability and e-Government	4.19	4	0.84	0.21	Value for cross-border and cross-sector interoperability
U10: NIFO representatives list supports me in networking and exchanging knowledge and experience	3.54	4	0.65	0.17	Value for cross-border and cross-sector interoperability
U11: The comparative analysis of different NIFs helps me to identify where and how a better alignment of my NIF with the EIF can be	3.78	4	0.71	0.23	Value for cross-border and cross-sector interoperability
achieved					Value for EU
U12: The comparative analysis of different NIFs is an efficient tool to view the alignment of different NIFs with the EIF	3.80	4	0.84	0.25	Value for cross-border and cross-sector interoperability
					Value for EU

Statement	Mean	Mode	StDev	StErr	Dimension
U13: The comparative analysis of different NIFs presents clearly the status of monitoring and implementation of the different NIF elements	3.45	4	0.76	0.25	Value for EU

#### 4.1.3.2. OVERALL UTILITY RESULT ANALYSIS

Table 7 gives an overview on the analysis of each Utility dimension as well as a total score for the Utility evaluation criteria. In order to make the total Utility score calculation more accurate, a weighted mean was used. The dimension weight is defined based on the amount of statements within specific dimension.

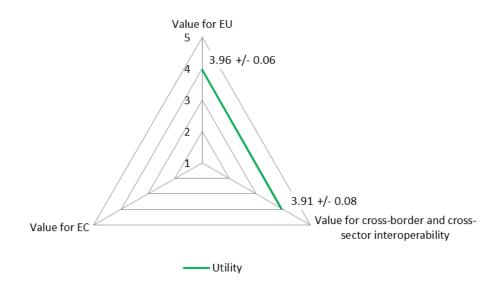
The weighted average of the Utility is **3.95** with the standard deviation equal to **0.70**, on a scale from 1 to 5, where 5 is the maximum (best) value.

	MEAN	MODE	StDev	StErr	Dimension	Weight
Per	3.96	4	0.70	0.06	Value for EU	0.61
dimension	3.91	4	0.73	0.08	Value for cross-border and cross- sector interoperability	0.39
			Value for EC	-		
Utility	3.95 <sup>8</sup>	4	0.70	0.06		

#### TABLE 7 – ACTION 4.2.3 UTILITY SCORE DETAILS

Figure 4 gives a visual overview on the Utility coverage per two predefined dimensions.

#### FIGURE 4 – ACTION 4.2.3 UTILITY AGGREGATION



<sup>&</sup>lt;sup>8</sup> Weighted mean is a procedure for combining the means of two or more groups of different sizes; it takes the sizes of the groups into account when computing the overall or grand mean.

### **4.2. STRENGTHS AND WEAKNESSES**

This section provides an overview of the strong and weak aspects of the NIFO revealed by the Action 4.2.3 Utility survey.

Prioritization of the statements were made based on the mean value of each statement. Statements with nearby mean values were grouped into three different clusters to which the following colours have been applied:

- A Green colour applies to statements that refer to NIFO's strong aspects;
- A Grey colour applies to statements that refer to the aspects that require attention. For those statements respondent opinion was spread proportionally between 'Agree' and 'Disagree';
- An Orange colour applies to statements that refer to NIFO's weak aspects. Weaknesses of those aspects are confirmed by the feedbacks included in the Table 5.

Table 8 presents an overview of the aspects that are strong, require attention or are weak of the National Interoperability Framework Observatory in the context of Utility.

Utility statement	Mean	Dimension	
U1: The NIFO community aims to share experience and best practices on national interoperability frameworks		Value for cross-border and cross-sector interoperability	
		Value for EU	
U2: The news, newsletters and events published on the NIFO community are useful	4.27	Value for EU	
U8: The information provided in the e-Government factsheets is comprehensive and complementary	4.27	Value for EU	
U7: The information provided in the NIFO factsheets is comprehensive and complementary	4.20	Value for EU	
U9: Factsheets published on the NIFO community give me a straightforward and concise overview of countries' activities in the areas of interoperability and e-Government	4.19	Value for cross-border and cross-sector interoperability	
U3: The "annual state of play of interoperability in Europe" allows me to get useful comparative information, trends, challenges on NIF alignment and monitoring & implementation in various countries		Value for cross-border and cross-sector interoperability	
		Value for EU	
U12: The comparative analysis of different NIFs is an efficient tool to view the alignment of different NIFs with the EIF		Value for cross-border and cross-sector interoperability	
		Value for EU	
U11: The comparative analysis of different NIFs helps me to identify where and how a better alignment of my NIF with the EIF can be achieved		Value for cross-border and cross-sector interoperability	
		Value for EU	
U6: I would like to read more news on the NIFO community	3.74	Value for EU	

#### TABLE 8 – ACTION 4.2.3 UTILITY STRENGTHS AND WEAKNESSES

Utility statement	Mean	Dimension
U5: The alignment examples of the toolbox provide relevant and value added information on interoperability in European Countries in one place		Value for cross-border and cross-sector interoperability
		Value for EU
U4: Documents provided in the Toolbox efficiently support the processes of NIF and EIF alignments	3.67	Value for EU
U10: NIFO representatives list supports me in networking and exchanging knowledge and experience	3.54	Value for cross-border and cross-sector interoperability
U13: The comparative analysis of different NIFs presents clearly the status of monitoring and implementation of the different NIF elements	3.45	Value for EU

### **5.** CONCLUSIONS AND RECOMMENDATIONS

The objective of the survey was to evaluate the Utility of Action 4.2.3 – National Interoperability Framework Observatory (NIFO). The following conclusions have been drawn based on the analysis performed:

- Respondents agree that the NIFO community successfully allows sharing experience and best practices on national interoperability;
- The respondents are satisfied with the NIFO community's communication activities and the current amount of information and news that appear on the community;
- The NIFO representatives list lacks the ability to support people in regards to networking and exchanging knowledge and experience;
- The findings indicate that the comparative analysis of different NIFs does not clearly present the status of monitoring and implementation of the different NIF elements.

Based on the conclusions drawn, CGI-ACN adduces the following recommendations:

- The NIFO representatives list could be appended with more comprehensive contact information that would allow more effective networking;
- The comparative analysis of different NIFs should be enhanced so that it clearly presents the status of monitoring and implementation of the different NIF elements.

## 6. APPENDIX

### **6.1. STATEMENT MAPPING TO DIMENSIONS**

In order to measure the Utility of the Action 4.2.3 and calculate the average score of each dimension, all survey statements were mapped to dimensions according to the evaluation criteria.

Table 9 shows the statement mapping according to the three Utility dimensions.

Question	ID	Value for EU	Value for EC	Value for cross-border and cross-sector interoperability	Count of areas covered by question
The NIFO community aims to share experience and best practices on national interoperability frameworks	U1	✓		$\checkmark$	2
The news, newsletters and events published on the NIFO community are useful	U2	$\checkmark$			1
The "annual state of play of interoperability in Europe" allows me to get useful comparative information, trends, challenges on NIF alignment and monitoring & implementation in various countries	U3	$\checkmark$		$\checkmark$	2
Documents provided in the Toolbox efficiently support the processes of NIF and EIF alignments	U4	$\checkmark$			1
The alignment examples of the toolbox provide relevant and value added information on interoperability in European Countries in one place	U5	$\checkmark$		$\checkmark$	2
I would like to read more news on the NIFO community	U6	$\checkmark$			1
The information provided in the NIFO factsheets is comprehensive and complementary	U7	$\checkmark$			1
The information provided in the e-Government factsheets is comprehensive and complementary	U8	$\checkmark$			1
Factsheets published on the NIFO community give me a straightforward and concise overview of countries' activities in the areas of interoperability and e-Government	U9			$\checkmark$	1
NIFO representatives list supports me in networking and exchanging knowledge and experience	U10			$\checkmark$	1
The comparative analysis of different NIFs helps me to identify where and how a better alignment of my NIF with the EIF can be achieved	U11	$\checkmark$		$\checkmark$	2
The comparative analysis of different NIFs is an efficient tool to view the alignment of different NIFs with the EIF	U12	$\checkmark$		$\checkmark$	2

TABLE 9 – ACTION 4.2.3 STATEMENT MAPPING TO DIMENSIONS

Question	ID	Value for EU	Value for EC	Value for cross-border and cross-sector interoperability	Count of areas covered by question
The comparative analysis of different NIFs presents clearly the status of monitoring and implementation of the different NIF elements	U13	$\checkmark$			1
# of questions covering dimension		11	0	7	
% of questions covering dimension		85%	0%	54%	

### **6.2. DETAILED LIST OF RESPONDENTS' ORGANISATIONS**

Table 10 shows a detailed list of answers that were provided by the respondents indicating their position.

#### TABLE 10 – ACTION 4.2.3 DETAILED LIST OF RESPONDENTS' POSITIONS

Positions	Project officer
	Enterprise Architect
	Assistant Minister
	consultant
	e-Government department officer
	Communication
	counsellor
	Chief architect
	Information Security Officer
	Expert
	IT officer
	Head of unit "EU & International Affairs"
	MTITC
	Senior Technology Adviser

### 6.3. RAW DATA EXPORT

The attached file provides the survey result export.



### 6.4. GLOSSARY

- of location or central tendency; has the desirable mathematical property of minimizing the variance. To get the mean, you add up the values for each case and divide that sum by the total number of cases:
- Mode refers to the most frequent, repeated or common value in the quantitative or qualitative data. In some cases it is possible that there are several modes or none;
- Standard deviation<sup>7</sup> shows the spread, variability or dispersion of scores in a distribution of scores. It is a measure of the average amount the scores in a distribution deviate from the mean. The more widely the scores are spread out, the larger the standard deviation;
- Standard error<sup>7</sup> is the standard deviation of the sampling distribution of a statistic. It is a measure of sampling error; it refers to error in estimates due to random fluctuations in samples. It goes down as the number of cases goes up. The smaller the standard error, the better the sample statistic is as an estimate of the population parameter - at least under most conditions;

- The mean<sup>5</sup> (average) is the most popular measure 'Utility' is defined as the extent to which the effects (impact) of an ISA action correspond with the needs, problems and issues to be addressed by the ISA programme<sup>2</sup>;
  - A Likert Scale is a widely used scaling method developed by Rensis Likert. Likert scale refers to the use of an ordinal 4- or 5- point rating scale with each point anchored or labelled;
  - Weighted mean is a procedure for combining the means of two or more groups of different sizes; it takes the sizes of the groups into account when computing the overall or grand mean.