**Inbound Tourism 2014**

**National Reference Metadata in ESS Standard for Quality Reports Structure (ESQRS)**

**National Statistics Office (NSO)**

**Time Dimension: 2014**

**Data Flow: MALTA_INTOUREQ_A**

<table>
<thead>
<tr>
<th>Concept name</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Contact</strong></td>
<td>National Statistics Office (NSO)</td>
</tr>
<tr>
<td><strong>1.1 Contact organisation</strong></td>
<td>National Statistics Office (NSO)</td>
</tr>
<tr>
<td><strong>1.2 Contact organisation unit</strong></td>
<td>Unit C3: Population and Tourism Statistics, Directorate C - Social Statistics and Information Society</td>
</tr>
<tr>
<td><strong>1.3 Contact name</strong></td>
<td>Mr Matthew Zerafa</td>
</tr>
<tr>
<td><strong>1.4 Contact person function</strong></td>
<td>Manager</td>
</tr>
<tr>
<td><strong>1.5 Contact mail address</strong></td>
<td>National Statistics Office (NSO), Unit C3: Population and Tourism Statistics, Lascaris, Valletta, VLT 2000, Malta</td>
</tr>
<tr>
<td><strong>1.6 Contact email address</strong></td>
<td><a href="mailto:matthew.zerafa@gov.mt">matthew.zerafa@gov.mt</a></td>
</tr>
<tr>
<td><strong>1.7 Contact phone number</strong></td>
<td>+356 2599 7630</td>
</tr>
<tr>
<td><strong>1.8 Contact fax number</strong></td>
<td>+356 2599 7205</td>
</tr>
</tbody>
</table>

**2 Introduction**

Tourist air departures are collected through a continuous survey carried out at the departure lounge of the Malta International Airport. A two-stage sampling design is used to collect air passengers. In the first stage, alternate days and nights are selected. In a fortnight all days and nights are covered. In the second stage, within each shift, a sample of passengers is selected systematically. Every crossing passenger is counted and respondents are selected using a pre-defined interval of 1:20 for air. It is important to ensure that travellers are only counted once on route to the departures lounge. It is up to the interviewer in charge of the clicker to ensure that all eligible passengers crossing the security line are counted and to direct their colleagues towards the right person to interview. This is essential to obtain an adequate survey distribution between Maltese and foreigners.

Tourist sea departures are collected through a regular survey, conducted during three separate months every year at the Valletta Cruise Port. A quota sample is used to conduct sea passenger departures in which the interviewers are guided to select people according to some fixed quota.

The main indicators collected in these surveys include the following: Nationality, Country of residence, Airline/Shipping company used for the outgoing journey, Final destination, Gender and Age, Purpose of visit, Frequency of visit, Number of nights stayed, Same-day visits, Type of accommodation used, Locality in
Malta stayed longest, Organisation of trip, Form of transport used and Expenditure (package/non-package/other).

The main aim of the TOURSTAT survey is to collect information on tourism demand, for both inbound and outbound trips. Results for Tourism Demand are published in a monthly news release that caters primarily for local data needs.

<table>
<thead>
<tr>
<th>3 Quality management - assessment</th>
<th>A number of validation checks for consistency are carried out which include: process of monitoring the results of data compilation and ensuring the quality of statistical results.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Data entry of the surveys is done by the interviewers themselves using specific software internally designed for TOURSTAT.</td>
</tr>
<tr>
<td></td>
<td>After the data entry process, all data is verified from our end and by the supervisors of the respective teams. This will minimize the impact of data entry errors on survey results. Each question is verified by checking that each response that was entered in our TOURSTAT program matches with the response of the hard copy questionnaire. A verification report is carried out every month after the verification process. This includes the number of questionnaires that were entered by each interviewer and the number of mistakes done for each question in the survey and by interviewer distributed by month. This enables us to check the performance of each interviewer in the data entry process.</td>
</tr>
<tr>
<td></td>
<td>Interviewers’ monthly response rate is closely monitored in order to assess performance.</td>
</tr>
<tr>
<td></td>
<td>Surveys are counted in order to ensure that there are no surveys missing from each batch. This process is followed by checking that each questionnaire was entered in the TOURSTAT program.</td>
</tr>
<tr>
<td></td>
<td>Every month the sampling rate is checked to ensure that every 20th passenger was interviewed through each day and night shift respectively. This is carried out by multiplying the total surveys per day by the sampling rate (20) and then subtracting from the total number of passengers that were clicked during that particular day. If the difference is less than 20 passengers then this verifies that the sampling rate was held constant throughout.</td>
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</table>

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<tr>
<th>4 Relevance</th>
<th>National Level:</th>
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<tbody>
<tr>
<td></td>
<td>No user survey is carried out to provide accurate quantitative data on the use of Tourism Statistics in Malta; however from feedback provided by our users, it is very clear that there is extensive use of tourism statistics in this country. Survey results are widely used both internally (within NSO) and externally.</td>
</tr>
<tr>
<td></td>
<td>Within NSO, main users of the date include:</td>
</tr>
<tr>
<td></td>
<td>- National Accounts,</td>
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<td></td>
<td>- Balance of Payments,</td>
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<tr>
<td></td>
<td>- Population and Tourism statistics (estimation of migration components).</td>
</tr>
<tr>
<td></td>
<td>External users include:</td>
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<td></td>
<td>- Malta Tourism Authority (MTA),</td>
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<tr>
<td></td>
<td>- Central Bank of Malta (CBM),</td>
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<td></td>
<td>- Ministry of Tourism (MOT),</td>
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<td></td>
<td>- Students and researchers.</td>
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<td></td>
<td>European Level:</td>
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A user satisfaction survey was carried out by the NSO in 2014 among its users. Results from the survey are not domain specific but related to each Unit within the NSO. Results relative to the Unit C3 can be found using the following link: [http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_01/Methodology_and_Research/Documents/2014/News2014_089.pdf](http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_01/Methodology_and_Research/Documents/2014/News2014_089.pdf)

Results about Tourism from the User Satisfaction 2014 are as follows:

**News Releases:**
- Quality: 25.4% high and 50.7% good
- Timeliness: 82.4% timely
- Usefulness: 82.4% useful

**Requested data:**
- Quality: 26.1% high and 41.2% good
- Frequency: 20.2% regular
- Timeliness: 74.6% timely

### 4.3 Completeness

Not applicable, TOURSTAT survey is conducted to satisfy the national needs. It is neither regulated by the MSA Act 2000 nor by an EC Regulation.

#### 4.3.1 Data completeness - rate

100%.

### 5 Accuracy and reliability

#### 5.1 Accuracy - overall

The main sources of estimate errors are sampling errors, non-response errors, and measurement errors. The rate of unit non-response stood at 17.9%. For dealing with unit non-response, grossing-up methods are used.

Significant item non-response appears for variables referring to package/non-package/other expenditures. For dealing with item non-response, regression imputation methods are used.

Measurement errors can be done by the respondents (not understanding the questions, not knowing the answer, or not willing to provide proper information on sensitive questions). Respondents are sometimes reluctant to provide information on expenditure. This may lead to over- or underestimation of expenditures.

To avoid the publication of figures which are statistically unreliable, under-represented figures are indicated for each table and are flagged so as to be treated with caution. NSO advises users to exercise caution when analysing estimates of less than 1,500 tourists since such estimates are subject to variations attributable to low frequency in the sampling frame (sampling errors).

#### 5.2 Sampling error

- Margin of error (95% confidence interval):
  - Total inbound tourism trips (annual figure) - 0.55%
  - Total nights spent (annual figure) - 1.00%
  - Total expenditure (annual figure) - 0.73%
### 5.2.1 Sampling error - indicators

The bootstrap method is implemented on micro data using a specific SPSS syntax in order to estimate the variance and sampling errors coefficients of variation, for the inbound tourism trips, nights spent and total expenditure. This helps in checking the reliability of the sample estimates.

The bootstrap technique is a way of estimating properties of an estimator (such as its variance) by measuring those properties when sampling from an approximating distribution. One standard choice for an approximating distribution is the empirical distribution of the observed data. In the case where a set of observations can be assumed to be from an independent and identically distributed population, this can be implemented by constructing a number of re-samples of the observed dataset (and of equal size to the observed dataset), each of which is obtained by random sampling with replacement from the original dataset.

### 5.3 Non-sampling error

The following are the main sources of non-sampling error:

- Interviewers bias - Questions laced with interviewer bias can influence respondents in such a way that distorts the outcome of the interview;
- In case of business trips organized by employers using services of travel agencies, travellers do not know the costs of transport and other services;
- Sometimes travellers are reluctant to provide data on expenditures;
- Respondents do not remember on details;
- Language barriers;
- Bias associated with imputation.

### 5.3.1 Coverage error

Not Applicable.

### 5.3.1.1 Over-coverage - rate

Not Applicable. Travellers are only counted once on route to the departures lounge. For more information refer to concept 12.3.

### 5.3.2 Measurement error

Not Applicable.

### 5.3.3 Non-response error

Out of a total of 53,543 sample passengers, 9,577 individuals (17.9%) were non-contacts/refusals.

- Number of non-contacts: 904 individuals
- Number of refusals: 8,673 individuals

### 5.3.3.1 Unit non-response - rate

Unit non-response rate: 17.9% of total passengers in the sample.

We compute the response rate for each interviewer every month so as to improve their performance in the future.

The following methods are used to deal with unit non-response:

- Correction factor in the weighting procedure, Extrapolation), Administrative records are used as a supplementary source for the calibration of the survey aggregates. The exercise is in the main bottom-up approach including a calibrating weight to re-align the survey results to the true population of total passengers departures (net of transits)
- At times, partial responses are also accepted if these cover the main indicators about respondents collected in the questionnaire.

### 5.3.3.2 Item non-response - rate

The rate of item non-response rate on main indicators ranges around 12%. The methods used for dealing with item non-response: Multiple Linear Regression Model and Hot-deck imputation.
5.3.4 Processing error

Errors related to the final data collection process which may contribute to data entry errors include:

- Language barriers
- Time constraints during busy hours at the airport
- Incorrect data being keyed-in

5.3.4.1 Imputation - rate

Imputation rates for main variables are as follows:

- Purpose of visit - 0.17%
- Organisation of stay (Package/Non-Package Trip) - 19.68%
- Frequency of visit - 2.15%
- Type of accommodation - 14.48%
- Nights spent - 1.26%
- Package expenditure - 12.82%
- Travel ticket expenditure - 15.73%
- Accommodation expenditure - 13.25%
- Other expenditure - 25.59%

5.3.4.2 Common units - proportion

Not Applicable.

5.3.5 Model assumption error

Not Applicable.

5.3.6 Data revision

Revisions on past datasets were implemented to improve the quality, consistency and coherence of the results.

5.3.6.1 Data revision - policy


5.3.6.2 Data revision - practice

Unit C3 is always on the lookout for methodological improvements. During the past couple of years outlier detection techniques and improved imputation methods were implemented on the number of nights spent and on the different expenditure categories.

5.3.6.3 Data revision - average size

0.19% - 0.25%

5.3.7 Seasonal adjustment

Seasonality is done via the seasonal adjustment software Demetra+ provided by Eurostat. TRAMO/SEATS (Time Series Regression with ARIMA noise, Missing Observation and Outliers, Signal Extraction in ARIMA Time Series) is used as a seasonal adjustment method. The purpose is to simplify the data so that the direction of development becomes more visible without a significant loss of information. Seasonal adjustment tries to identify and remove seasonality; repeating patterns in the data.

6 Timeliness and punctuality

6.1 Timeliness

T+30 days.

6.1.1 Time lag - first result

30 days.

6.1.2 Time lag - final result

30 days.
### 6.2 Punctuality

News Releases are published every day at 11.00am. Considering News Releases related to inbound tourism, disseminated between June 2012 and June 2015, no news release was late.

| 6.2.1 Punctuality - delivery and publication | 0 days. |

### 7 Accessibility and clarity

#### 7.1 Dissemination format - News release


All releases are published and disseminated at 11:00 a.m. as scheduled in the Advance Release Calendar. The calendar is published on the NSO website and includes a three-month advance notice (the current month and the forthcoming two months): [http://nso.gov.mt/en/News_Releases/Release_Calendar/Pages/News-Release-Calendar.aspx](http://nso.gov.mt/en/News_Releases/Release_Calendar/Pages/News-Release-Calendar.aspx)

#### 7.2 Dissemination format - Publications

The following indicators are included in the [Malta in Figures](http://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_C3/Population_and_Tourism_Statistics/Pages/Inbound-Tourism.aspx) publication:

- Inbound tourists from Malta by country of origin
- Average length of stay of tourists by type of accommodation
- Quarterly distribution of inbound tourists

#### 7.3 Dissemination format - online database

Selected indicators from TOURSTAT are available on the NSOs online statistical database, Stat DB, which can be accessed from the following link: [http://nso.gov.mt/statdb/start](http://nso.gov.mt/statdb/start).

#### 7.3.1 Data tables - consultations

Not available.

#### 7.4 Dissemination format - microdata access

Micro-data is not available to users. Figures are published in aggregated form only.

#### 7.5 Documentation on methodology

A brief methodological section can be found with each news release. Moreover, a TOURSTAT manual is available for internal purposes only.


In addition, documentation of steps relating to the different processes carried out in the compilation and analysis of TOURSTAT are available for internal purposes.

#### 7.5.1 Metadata completeness - rate

Not applicable.

#### 7.5.2 Metadata - consultations

Not applicable.
7.6 Quality management - documentation

TOURSTAT data (sample data or extrapolation results) are not disseminated. Therefore the documentation on quality management is used only for internal purposes.

7.7 Dissemination format - other

The data is very sought by the media, researchers, students and policy makers. Such users can request information through the NSO website (http://nso.gov.mt/en/Services/Pages/Request-for-Information.aspx) and data is provided at aggregated level.

8 Comparability

8.1 Comparability - geographical

Common tourism definitions are used between Malta and other EU member states following the Methodological Manual provided by Eurostat however methods used for data collection varies between countries.

8.1.1 Asymmetry for mirror flow statistics - coefficient

Not Available.

8.2 Comparability - over time

Time series from 2001 onwards.

8.2.1 Length of comparable time series

14 years.

8.3 Comparability - domain

When comparing non-resident arrivals and nights from TOURSTAT and ACCOMSTAT, one will notice some discrepancies, mainly due to different definitions and methodologies. Some of these differences include:

- **Two-centre holidays:** For example, if a tourist spends 4 nights in one hotel and the remaining 3 nights of his stay in a different hotel, the tourist will be counted twice in ACCOMSTAT as data is collected directly from hotel registers. On the other hand, this tourist will be counted only once in TOURSTAT.

- **Main type of accommodation used:** TOURSTAT records the main type of accommodation used by the tourist during his stay. If for example, a tourist spends 4 nights in private accommodation and 3 nights in a 5-star hotel, all 7 nights will be assigned to private accommodation. On the other hand, in ACCOMSTAT, these nights will be split according to the hotel categories.

- **Time-share accommodation:** Time-share accommodation is classified as private accommodation in TOURSTAT. On the other hand, collective accommodation establishments furnish the NSO with a total figure, thus it is not possible to identify the number of arrivals and nights spent on time-share.

- **Definition of a tourist:** In TOURSTAT, one can distinguish between tourists and non-tourists, for example paid employed from within the country visited. The latter are excluded from TOURSTAT and present in ACCOMSTAT. Thus, in the case of foreign residents, arrivals in hotel accommodation do not necessarily comply with all the criteria defining a tourist.

- When a passenger is interviewed after midnight, TOURSTAT assigns that individual an extra night, even though the tourist didn’t actually stay in the hotel in Malta for that night in question.

- Residents and non-residents in ACCOMSTAT are counted during their month of arrival, while in TOURSTAT they are measured on departure.

- **Long stays** (exceeding 30 nights) are treated differently in ACCOMSTAT and TOURSTAT. In the former, nights spent are split over the months when they occur, while in the latter they are counted once in the month of departure.

9 Coherence

A representative from the Malta Tourism Authority (MTA) supplies this office with MIA passenger
movements on a monthly basis. These are used for the weighting procedure of air passengers; for calibration of the survey aggregates.

The number of transit passengers is provided on a monthly basis by a representative from MIA in order to deduce departures for tourism system from the total MIA passenger departures.

Administrative data records of tourist sea departures are provided by a representative of Virtu Ferries Ltd. in order to be used as a supplementary source for the weighting procedure of sea passengers. These include:

- Passengers departing Sicily by nationality and gender (Arrivals),
- Passengers departing Malta by nationality and by gender (Departures),
- Day Return Passengers from Sicily (Seats).

<table>
<thead>
<tr>
<th>9.1 Coherence - cross domain</th>
<th>Not Applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1.1 Coherence - sub annual and annual statistics</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>9.1.2 Coherence - National Accounts</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>9.2 Coherence - internal</td>
<td>Not Applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10 Cost and Burden</th>
<th>The burden on the respondents is very low since the survey takes only a few minutes to be completed. Significant high costs are associated with the data collection and production of the statistical product. These include:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Printing of questionnaires.</td>
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<td></td>
<td>- IT costs for our data entry program. The TOURSTAT program is regularly maintained.</td>
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<tr>
<td></td>
<td>- Twelve full-time interviewers that work daily on a shift basis.</td>
</tr>
<tr>
<td></td>
<td>- A full-time statistician that is responsible for the data cleaning/analysis and for the final statistical product.</td>
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<table>
<thead>
<tr>
<th>11 Confidentiality</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>11.1 Confidentiality - policy</td>
<td>At National level: Confidentiality is one of the major principles guiding the activities of the NSO.</td>
</tr>
<tr>
<td></td>
<td>Article 40 of the MSA Act stipulates the restrictions on the use of information and in Article 41, the prohibition of disclosure of information. Furthermore, Section IX of the Act (Offences and Penalties) lays down the measures to be taken in case of unlawful exercise of any officer of statistics regarding confidentiality of data. No cases of breaches in the law have been recorded to date.</td>
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<tr>
<td></td>
<td>Since its inception, the NSO has always operated within a culture of strict confidentiality to which it is also bound by the provisions of the Data Protection Act. This Act, which came fully into effect on July 15, 2003, seeks to protect individuals against the violation of their privacy by the processing of personal data.</td>
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</table>
Further information on access to microdata is available on the NSO's website through: https://nso.gov.mt/en/Services/Microdata/Pages/Access-to-Microdata.aspx

During 2009, the NSO has set up a Statistical Disclosure Committee to ensure that statistical confidentiality is observed, especially when requests for microdata are received by the NSO.

Upon employment, NSO employees are informed of the rules and duties pertaining to confidential information and its treatment. According to the MSA Act, before commencing work, every employee is required to take an oath of secrecy whose text is included in the Act.

At European level: Regulation (EC) No 223/2009 on European statistics (recital 24 and Article 20(4) of 11 March 2009 (OJ L 87, p. 164), stipulates the need to establish common principles and guidelines ensuring the confidentiality of data used for the production of European statistics and the access to those confidential data with due account for technical developments and the requirements of users in a democratic society.

11.2 Confidentiality - data treatment
The collection of micro-data is considered as confidential. For this reason micro-data is stored and processed in a secure environment.

After the aggregation process, tourism demand data is, in principle, not confidential.

12 Statistical processing

12.1 Source data
An on-going frontier personal survey known as TOURSTAT.

12.2 Frequency of data collection
Daily.

12.3 Data collection
Tourist air departures are collected through an ongoing frontier survey carried out at the departure lounge of the Malta International Airport (MIA). Data is collected through personal interviews using paper questionnaires (PAPI) by two teams of full-time interviewers based in MIA departures or the Valletta Cruise Port departure terminal. Average interview time is approximately 10 to 15 minutes.

A two-stage sampling design is used to collect air passengers. In the first stage, alternate days and nights are selected. In a fortnight all days and nights are covered. In the second stage, within each shift, a sample of passengers is selected systematically. Every crossing passenger is counted and respondents are selected using a pre-defined interval of 1:20 for air departures. Travellers are only counted once on route to the departures lounge. It is up to the interviewer in charge of the clicker to ensure that all eligible passengers crossing the security line are counted and to direct their colleagues towards the right person to interview. This is essential to obtain an adequate survey distribution between Maltese and Foreigners.

Tourist sea departures are collected through a regular survey, conducted during three separate months every year at the Valletta Cruise Port. A quota sample is used to conduct sea passenger departures in which the interviewers are guided to select people according to some fixed quota. Respondents are selected in a sample on the basis of pre-specified characteristics (Gender, Age-group and Nationality) so that the total sample has the same distribution of characteristics assumed to exist in the population being studied.

Proxy interviews are accepted. The number of proxy interviews is not known but the majority consists of persons aged 14 years or under.

12.4 Data validation
Data entry of the surveys is done by the interviewers themselves. Each survey is then verified from our end and by the supervisors of the respective teams, in order to check for any data entry errors. Regular checks are also carried out to ensure that all surveys have been inputted into the system and that the sampling
rate was held constant throughout each day and night shift, respectively. The number of complete responses by each interviewer is then analysed so as to aim for a higher response rate in the following month.

The results of data compilation are monitored to ensure the quality of statistical results. Some of the important validations include:

1. Checking date of arrival in Malta with the total number of nights spent.
2. Locality stayed longest is checked with the name of establishment.
3. Purpose of visit is checked with the total number of nights spent.
4. The number of nights spent in Gozo is checked with the categorical variable identifying those who visited Gozo/Comino.
5. Package trips, use of travel agency or internet to book are checked with the main type of accommodation (Collective/Private accommodation).
6. Checking whether important key variables (Country of residence, End of trip or will return to continue this visit, Overnight visitor or Same-day visitor, Age and Gender) are all provided.
7. Checking whether the country of destination is coherent with the trip duration.
8. Checking whether the expenditure amount provided is coherent with the trip duration and type of accommodation. These are checked through the use of multiple linear regression models.
9. Are the answers logical and consistent?
10. Are the time periods possible?
11. Controlling of outliers for length of stay and expenditure categories.

Special attention is given to completed fields on expenditures. The missing values for expenditures are imputed. Hereby, imputation methods are used, and are based on the core variables destination, number of nights spent, and type of accommodation used. A respondent may also, unintentionally, give the wrong answer. This is subsequently corrected by looking at the answers to the (semi) open questions given by the respondent.

12.5 Data compilation

Different imputation methods are used in order to deal with item non-response: Hot deck imputation and Multiple Linear Regression Model.

- **Hot deck imputation**: For each respondent with a missing value for a specific variable, this value is imputed with the corresponding value from other previous respondents in the dataset with a valid response on this variable. It is applied within classes of respondents according to the categories of the variable being imputed in order to improve the quality of the imputations. This method is applied on categorical variables; Gozo/Comino visit; which determines whether the tourist visited Gozo and/or Comino while he/she was in Malta; Purpose of Visit, Frequency of Visit, Locality in Malta stayed longest, form of transport used, organisation of trip and type of accommodation used.

- **Multiple Linear Regression model**: Imputation by linear regression model is carried out on each expenditure category. Linear regression is an approach to model the relationship between a scalar dependent variable and one or more explanatory variables. The method requires that the values of one or more auxiliary variables are known for both the complete cases on which the variable of interest is recorded and for the missing cases. A linear regression model relating the variable of interest to the set of auxiliary variables is set up.

**Outlier detection techniques**: Two variables that are most likely to be affected with outliers are the number of nights spent and the expenditure categories. The standardized residuals, which are obtained by fitting a multiple linear regression model, are the most commonly used measures for detecting outliers. Observations with resulting standardized residuals exceeding +2 or -2, indicate abnormal values which have to be double-checked. An alternative measure that is used for indicating data points that are particularly worth checking for validity is Cooks distance. A conventional cut-off value that is used for spotting highly
influential points is when the resulting Cooks distance is greater than $4/n$, where $n$ is the sample size. The two aforementioned methods are used to detect outliers for the variables nights spent and for the different expenditure categories.

### 12.6 Adjustment

**Weighting Procedure:**

Weights are compiled separately for Maltese and Foreign, and day and night respondents depending on the first stage of sampling. The weights are compiled in 3 stages:

1. Adjustment for unit non-response,
2. Sampling rate for the second stage of sampling,
3. Calibration of weights according to MIA and Valletta Cruise Port departures.

Administrative records are used as an auxiliary source for the calibration of the survey aggregates. The exercise is mainly a bottom-up approach including a calibration weight to re-align the survey results to the true population of total passenger departures (net of transits). Calibration is based on the first country of destination which is not the same as the final country of destination.

Seasonality is done via the seasonal adjustment software Demetra + provided by Eurostat. TRAMO/SEATS (Time Series Regression with ARIMA noise, Missing Observation and Outliers, Signal Extraction in ARIMA Time Series) is used as a seasonal adjustment method. The purpose is to simplify the data so that the direction of development becomes more visible without a significant loss of information. Seasonal adjustment tries to identify and remove seasonality; repeating patterns in the data.

### 13 Comment

Not applicable.