



JASP for Audit User Manual

Statistical Auditing Group

“The best things in life are free.”

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Preface

The **JASP for Audit User Manual** is a guide for practitioners who wish to use the Audit module (Derks et al., 2021) in JASP (JASP Team, 2025).

Getting Started

Statistical theory is fundamental to many auditing guidelines and procedures. Auditors need user-friendly software for statistical analyses and the knowledge to interpret these results. JASP is an open-source, free, cross-platform statistical software that supports statistical auditing through its Audit module.

The Audit module allows auditors to plan, perform, and interpret most statistical auditing procedures using correct methods, minimizing programming errors. Designed with auditors in mind, it features a user-friendly interface aligned with audit processes and International Standards on Auditing. Besides standard frequentist methods, the module includes Bayesian methods to enhance audit transparency and efficiency by incorporating existing information. In summary, the Audit module handles the statistical heavy lifting, enabling you to plan, evaluate, and interpret your analyses using both classical and Bayesian techniques.

Downloading JASP

The Audit module is a part of JASP, which can be freely downloaded from www.jasp-stats.org. Click the ‘Download JASP’ button on the homepage to access the download page and choose your preferred installation. JASP is available for Windows, macOS, Linux, and Chrome OS. Installation follows standard procedures.

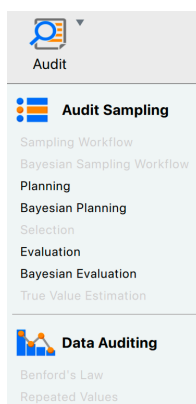


Enabling the Audit module in JASP

After opening JASP, you will see the main menu bar at the top.



To find the Audit module, click the '+'-icon on the right of the menu bar. A menu will appear showing all available modules. Check the box next to 'Audit' to make it visible in the main menu bar. You can now access the Audit module and its analyses by clicking the module icon in the menu bar.



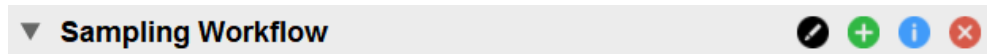
You are now ready to perform statistical audit analyses using the Audit module.

Working with the Audit module

The Audit module is a powerful tool for statistical analysis in auditing. The following sections cover its accessibility features, including help files and result validation using the R package jfa.

Help files

After opening an analysis in the Audit module, click the blue ‘i’ icon next to the analysis title to access a help file describing its functionality. For some options, like sampling units and algorithms, additional help files are available, indicated by a blue ‘i’ icon next to the option.



Validation of statistical results

The Audit module’s statistical results are derived from the R package jfa (Derks, 2025). For complete documentation and benchmarks, visit the package website at <https://koenderks.github.io/jfa/>.

Part I

Audit Sampling

Chapter 1

Sampling Workflow

The goal of statistical audit sampling is to infer the misstatement in a population based on a representative sample. This can be challenging, but the Audit module simplifies the process into four stages: planning, selection, execution, and evaluation.



1.1 Theory behind the audit sampling workflow

More detailed information about the individual stages in the audit sampling workflow is provided below.

1.1.1 Stage 1: Planning

In the planning stage, you determine the sample size needed to support the assertion that the population's misstatement is below the performance materiality. This involves using prior audit outcomes and information about inherent risk and control risk. Expectations about error rates also influence the sample size required to maintain statistical confidence.

1.1.2 Stage 2: Selection

Using the sample size from the planning stage, you select a statistically representative sample. Each sampling unit receives an inclusion probability, and units are selected based on these probabilities. Monetary unit sampling assigns probabilities to individual monetary units, making higher-value items more likely to be selected. Record sampling assigns equal probabilities to all items.

1.1.3 Stage 3: Execution

In the execution stage, you assess the correctness of selected items. The simplest method categorizes items as correct or incorrect, while a more accurate method considers the true value (audit value) of items. Annotating samples with audit values provides a more precise estimate of misstatement. If book values are unavailable, use the correct/incorrect method.

1.1.4 Stage 4: Evaluation

In the evaluation stage, you use the annotated sample to infer the total misstatement in the population. Statistical techniques calculate a projected maximum misstatement, and the population is approved if this is below the performance materiality.

1.2 The audit sampling workflow in JASP

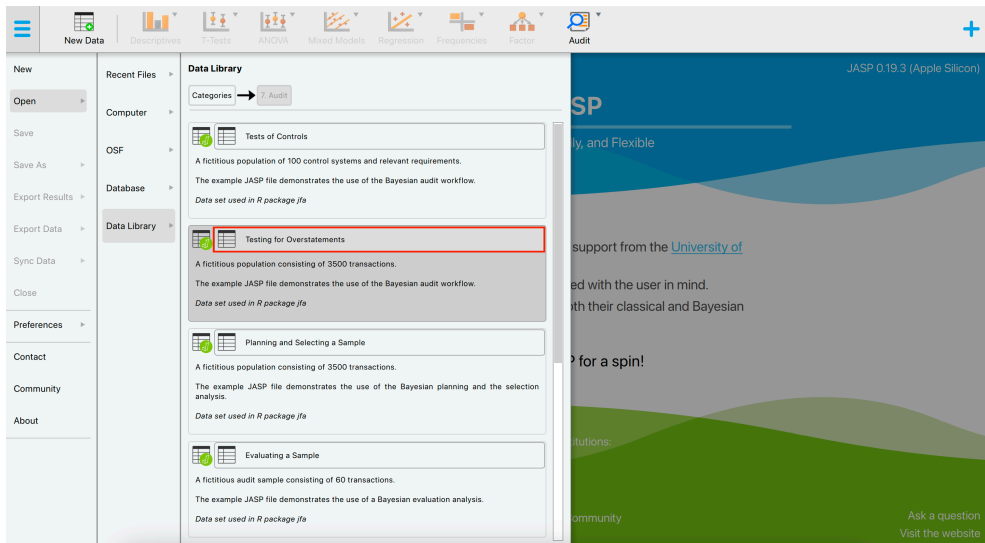
The Audit module in JASP offers two ways to navigate the audit sampling workflow: the Sampling Workflow analysis, which guides you through all four stages, and individual analyses for Planning, Selection, and Evaluation. This chapter uses the Sampling Workflow analysis to explain the Audit module's core functionality.

Find the Sampling Workflow analysis in JASP by clicking the Audit module icon and selecting Sampling Workflow. The interface is interactive, reflecting JASP's and JfA's philosophies, with advanced options hidden under the Advanced Options section. Information is progressively disclosed as you move through the workflow.

In the interactive layouts, select the corresponding data and options to plan your audit. Upon completing a stage, request a report by clicking Download Report. Each stage produces output in tables and plots to clarify statistical results.

1.2.1 Example

Let's explore an example of the audit sampling workflow. To follow along, open the 'Testing for Overstatements' dataset from the JASP Data Library. Navigate to the top-left menu, click 'Open', then 'Data Library', select '7. Audit', and finally click on the text 'Testing for Overstatements' (not the green JASP-icon button).



This will open a dataset with three columns: 'ID', 'bookValue', and 'auditValue'. The 'ID' column represents the identification number of the items in the population. The 'bookValue' column shows the recorded values of the items, while the 'auditValue' column displays the true values. The 'auditValue' column is included for illustrative purposes, as auditors typically know the true values only for the audited sample, not for all items in the population.

| | ID | bookValue | auditValue |
|----|-------|-----------|------------|
| 1 | 82884 | 242.61 | 242.61 |
| 2 | 25064 | 642.99 | 642.99 |
| 3 | 81235 | 628.53 | 628.53 |
| 4 | 71769 | 431.87 | 431.87 |
| 5 | 55080 | 620.88 | 620.88 |
| 6 | 93224 | 501.76 | 501.76 |
| 7 | 24331 | 466.01 | 466.01 |
| 8 | 81460 | 295.2 | 295.2 |
| 9 | 14608 | 216.48 | 216.48 |
| 10 | 79064 | 243.43 | 243.43 |
| 11 | 6227 | 296.26 | 296.26 |
| 12 | 59109 | 341.64 | 341.64 |
| 13 | 81527 | 203.02 | 203.02 |
| 14 | 27240 | 520.5 | 520.5 |
| 15 | 76073 | 469.93 | 469.93 |
| 16 | 83056 | 543.04 | 543.04 |
| 17 | 46163 | 511.62 | 511.62 |
| 18 | 85963 | 364.09 | 364.09 |
| 19 | 92464 | 76.76 | 76.76 |
| 20 | 15611 | 450.56 | 450.56 |
| 21 | 76619 | 582.6 | 582.6 |
| 22 | 91370 | 232.67 | 232.67 |
| 23 | 56015 | 266.26 | 266.26 |
| 24 | 91470 | 307.29 | 122.92 |

The auditor can start the sampling workflow by clicking on the Audit module icon and then selection 'Sampling Workflow'. Upon clicking this analysis, the following interface appears. In this interface, the auditor will need to fill in the options for the statistical analysis.

Sampling Workflow

▼ 1. Planning

auditValue
critical
selected

Item ID (required) 1
ID

Book Value (optional)
bookValue

Sampling Objectives 2

☒ Performance materiality

☒ Relative 3.000 %

☐ Absolute

☐ Minimum precision

Confidence 95.0 %

Expected Misstatements 3

☐ Relative

☒ Absolute 1

Audit Risk Model 4

Inherent risk High 100 %

Control risk High 100 %

Analytical risk High 100 %

Display

☒ Explanatory text

► Report

► Advanced

Download Report

To Selection 5

The first step is to fill in the variable indicating the identification numbers of the items in the corresponding box (indicated with a 1). Optionally, if the auditor has access to the book values of the items, they can fill in this variable as well.

In order for the Audit module to know what audit question is currently being investigated, you will first be asked to formulate your sampling objectives (indicated with

a 2). Enable the ‘Performance materiality’ objective if you want to test whether the total misstatement in the population exceeds a certain limit (i.e., the performance materiality). This approach allows you to plan a sample such that, when the sample meets your expectations, the maximum error is said to be below performance materiality. Enable the ‘Minimum precision’ objective if you want to obtain a required minimum precision when estimating the total misstatement in the population. This approach allows you to plan a sample such that, when the sample meets expectations, the uncertainty of your estimate is within a tolerable percentage. In the example, we choose a performance materiality of 3.5%.

Next, you need to indicate how many misstatements are tolerable in the sample (indicated with a 3). In the example, we choose to tolerate one full misstatement in the sample.

Furthermore, you need to indicate the risks of material misstatement via the audit risk model (indicated with a 4). According to the Audit Risk Model, the audit risk as a whole can be divided into three constituents: inherent risk, control risk, and detection risk. Inherent risk is the risk posed by an error in a financial statement due to a factor other than a failure of internal controls. Control risk is defined as the probability that a material misstatement is not prevented or detected by the internal control systems of the company (e.g., computer-managed databases). Both these risks are commonly assessed by the auditor on a 3-point scale consisting of the categories low, medium, and high. Detection risk is the probability that an auditor will fail to find material misstatements that exist in an organization’s financial statements. For a given level of audit risk, the tolerable level of detection risk bears an inverse relationship to the other two assessed risks. Intuitively, a greater risk of material misstatement should require a lower tolerable detection risk and, accordingly, more persuasive audit evidence. Here, we choose to set all risks to ‘High’.

Finally, you can progress to the selection stage by clicking the button ‘To Selection’ (indicated with a 5).

Chapter 2

Planning

Chapter 3

Selection

Chapter 4

Evaluation

Part II

Data Auditing

Chapter 5

Benford's Law

Chapter 6

Number Bunching

Part III

Algorithm Auditing

Chapter 7

Fairness

This is the user manual for **JASP for Audit**, which is a module for the free and open-source statistical software program **JASP** that integrates the functionality of the **jfa** package and offers a user-friendly graphical interface that caters specifically to statistical auditing (<https://jasp-stats.org>).