MS Excel Intermediate-Level Test

Proficiency Test

Technical Manual and User Guide

Publisher Information

Seliant Aps
Gammel Hasserisvej 123
9000 Aalborg
Denmark

Product Code: MSEXIL25

Version 1.0

For orders and inquiries:
Seliant Aps, Customer Service
Email: contact@seliant.com
Website: www.seliant.com

MS Excel Intermediate-Level Test

Proficiency Test

Technical Manual

This document serves as the official Technical Manual for the MS Excel Intermediate Test. It provides a complete overview of the test's purpose, design, and psychometric foundation, supported by empirical research and validation data. In addition, this manual includes practical guidance for test administration, scoring, and interpretation to ensure accurate and fair use of the assessment. The MS Excel Intermediate Test measures the more advanced spreadsheet skills required in roles involving data analysis, reporting, visualization, and structured information management. These abilities—such as working with conditional formulas, data validation, lookup functions, pivot-based analysis, and chart customization—are essential for employees who must handle data efficiently and produce meaningful insights in professional environments.

The test delivers an objective, reliable, and valid evaluation of intermediate-level Excel proficiency, enabling organizations to make informed, evidence-based decisions when selecting candidates or identifying employees who may require additional training or development. It is particularly valuable in recruitment processes for analytical, administrative, financial, and technical positions where Excel competency directly impacts job performance.

Beyond presenting the theoretical and empirical foundations of the assessment, this manual outlines best practices for integrating the test into organizational processes, ensuring fairness, compliance with professional testing standards, and consistent interpretation of results. Whether you are an HR practitioner, recruiter, manager, or organizational decision-maker, the MS Excel Intermediate Test Technical Manual provides essential guidance for the effective and responsible use of this assessment.

Contents

1. Introduction

The MS Excel Intermediate Test is designed to assess a candidate's ability to work with more advanced features of Microsoft Excel beyond the basic level. It focuses on practical, real-world skills such as data organization, formulas, functions, and visualization, which are commonly required in professional business environments.

The test contains 30 multiple-choice questions to be completed within a 25-minute time limit. It evaluates how effectively a candidate can apply intermediate Excel knowledge to solve workplace-relevant problems.

1.1 Purpose of the Test

- To identify candidates with the ability to handle more complex Excel tasks.
- To provide hiring managers with an objective measure of Excel proficiency beyond the entry level.
- To ensure that candidates can manage, analyze, and present data with accuracy and efficiency.

1.2 Intended Audience

The MS Excel Intermediate Test is suitable for roles such as:

- Analysts and coordinators
- Supervisors and team leads
- Financial and accounting staff
- Marketing and sales support professionals
- Other positions requiring frequent use of Excel for calculations, reporting, and data-driven decision-making.

1.3 How to Use This Manual

This manual is intended for HR professionals, recruiters, training specialists, and decision-makers who use the MS Excel Intermediate-Level Test as part of a selection or development process. Each chapter focuses on a specific aspect of the assessment, allowing readers to easily locate the information most relevant to their role.

- **Chapters 1–3** provide an overview of the test, its structure, and the skills it measures.
- **Chapters 4–6** contain practical information on administering, scoring, and interpreting results.

- **Chapter 7** presents the technical evidence supporting the reliability and validity of the test.
- **Chapter 8** outlines security and fair-use guidelines.
- **Appendices** include supplemental information such as sample items, score tables, and technical summaries.

Readers do not need to read the manual sequentially. You may move directly to the sections relevant to your responsibilities.

2. Test Specifications

- **Format**: Multiple-choice questions (MCQ)
- **Number of Questions**: 30
- **Time Limit**: 25 minutes
- **Answer Options**: 6 options per question, with one correct answer
- **Question Types**:
    - Primarily text-based questions
    - Some questions include images (e.g., screenshots of Excel sheets or menus)
- **Delivery Method**: Online, accessible via any modern browser (no software installation required)

The time allocation ensures that candidates have sufficient opportunity to demonstrate proficiency in handling more complex Excel tasks that require analysis and application of knowledge.

3. Content Domains

The Intermediate Excel Test includes 30 questions distributed across seven content domains. Each domain reflects a critical area of Excel proficiency relevant for intermediate-level business tasks.

3.1 Database & Data Automation

Focuses on automating data validation, entry, and reporting tasks to increase efficiency and accuracy.

- Automating Data Validation in a Shared Spreadsheet
- Automating Report Generation with Macros
- Automating Data Entry with Dropdown Lists
- Dynamic Data Updates in Dashboards
- Using Named Ranges to Automate Data References

Coverage: 5 items

3.2 General Excel Knowledge

Covers general concepts, error handling, and best practices for effective spreadsheet management.

- Preventing Accidental Edits in a Shared File
- Handling Errors in Large Datasets
- Extracting a Specific Value from Text Data

Coverage: 3 items

3.3 Data Management & Cleaning

Assesses ability to prepare, validate, and clean data before analysis.

- Standardizing Text Capitalization with Proper Case
- Enforcing Consistent Data Entry for Product Codes
- Restricting Data Entry with Validation Rules
- Converting Text-Formatted Numbers to Numeric Values

Coverage: 4 items

3.4 Data Visualization

Measures ability to present and customize data effectively through visual elements.

- Enhancing Reports with Conditional Formatting
- Creating Interactive Dashboards
- Best Practices for Pie Charts
- Secondary Axis for Dual Metrics
- Advanced Chart Customization: Dynamic Axis Scaling

Coverage: 5 items

3.5 Essential Formulas & Functions

Evaluates knowledge of formulas and functions commonly used in intermediate-level analysis.

- Calculating Conditional Totals Across Categories
- Extracting Characters from the End of a Text String
- Summing Values Based on Category Criteria
- Extracting Characters from the Start of a Text String
- Interpreting Formula Results in a Dataset Context

Coverage: 5 items

3.6 Data Analysis & Reporting

Covers analytical tools and reporting techniques used to interpret and summarize data.

- Goal-Oriented Pricing Analysis
- Applying Conditional Formatting to Highlight Top Performers
- Using Pivot Table Calculated Fields for Data Insights
- Conditional Averaging Based on Multiple Criteria

Coverage: 4 items

3.7 Excel Shortcuts & Productivity

Assesses efficiency in navigation and task execution through shortcuts and productivity tools.

- Quick Data Selection for Large Datasets
- Instant Table Creation for Data Analysis
- Quickly Duplicating a Sheet in a Report Workbook
- Instantly Jumping to the Last Row or Column of a Dataset

Coverage: 4 items

3.8 Summary of Item Categories

Domain	Number of Items	% of Test
Database & Data Automation	5	17%
General Excel Knowledge	3	10%
Data Management & Cleaning	4	13%
Data Visualization	5	17%
Essential Formulas & Functions	5	17%
Data Analysis & Reporting	4	13%
Excel Shortcuts & Productivity	4	13%
Total	30	100%

4. Item Development

The Intermediate Excel Test consists of 30 multiple-choice questions (MCQs). Each item is designed to measure one specific Excel skill within the scope of the test's content domains.

4.1 Item Types

The test items are primarily:

- **Scenario-based questions** – presenting workplace situations that require selecting the correct Excel function, feature, or method.
- **Application-based questions** – asking candidates to interpret formulas, results, or data structures to choose the correct action.
- **Interpretive questions with visuals** – requiring candidates to analyze charts, dashboards, or PivotTables and determine the correct conclusion.

A mix of text-only items and items with screenshots is used to reflect real-world Excel tasks.

4.2 Answer Options

Each item provides six answer options, with one correct answer and three distractors.

- Distractors are based on typical mistakes at the intermediate level (e.g., confusing similar formulas, misapplying formatting, or selecting the wrong chart type).
- This design ensures that incorrect responses can highlight specific skill gaps.

4.3 Item Writing Guidelines

Items are developed following the same principles as the Entry-Level test, with additional emphasis on intermediate complexity:

1. **Clarity** – Questions are written in clear, concise language without unnecessary technical jargon.
2. **Workplace Relevance** – All items represent Excel tasks commonly encountered in professional roles requiring data handling, reporting, or analysis.
3. **Balanced Coverage** – Items are distributed across all content domains to match the test blueprint.
4. **Appropriate Challenge** – Questions are designed to require deeper understanding, often involving multiple steps of reasoning.

5. **Device Compatibility** – Any screenshots or visuals are optimized for readability across different screen sizes and browsers.

4.4 Example Item

Domain: Data Analysis & Reporting
Skill: Using PivotTable Calculated Fields

Question:
A sales manager has created a PivotTable to analyze regional sales. She wants to calculate the profit margin percentage by dividing profit by sales within the PivotTable. Which feature should she use?

- A. Insert a new worksheet and enter the formula manually
- B. Use a Calculated Field in the PivotTable
- C. Apply Conditional Formatting to highlight profit margins
- D. Create a named range for profit and sales and use a formula outside the PivotTable

Correct Answer: B – Use a Calculated Field in the PivotTable.

Rationale:

- Option A is inefficient and not integrated with the PivotTable.
- Option C is a formatting tool, not a calculation feature.
- Option D requires work outside the PivotTable, defeating the purpose of in-table calculations.

4.5 Item Review and Quality Control

- Items are reviewed internally for accuracy, clarity, and alignment with intermediate-level skills.
- Questions undergo pilot testing and statistical monitoring (difficulty and discrimination).
- Items with poor performance are revised or replaced to maintain reliability.

5. Scoring & Interpretation

The Intermediate Excel Test is scored objectively. Each of the 30 multiple-choice questions has one correct answer.

5.1 Scoring Method

- **Correct response** = 1 point
- **Incorrect or unanswered response** = 0 points
- **Total score** = sum of all item scores (maximum = 30, minimum = 0)
- No penalty is applied for guessing

5.2 Score Reporting

Candidates receive a raw score (0–30) and a percentile rank.

Raw score: Number of correctly answered test items.
Percentile rank: A percentile rank indicates the percentage of test-takers who scored at or below a given score. For example, a score at the 75th percentile means the candidate performed as well as or better than 75% of the comparison group.

5.3 Interpretation of Scores

Advisory Score Ranges

Based on empirical performance patterns, candidate scores can be interpreted in the following advisory ranges:

Raw Score	*Percentile rank*	Interpretation
0 – 12	*0 – 30*	Very limited Excel knowledge; unlikely to meet expectations for intermediate-level tasks.
13 – 15	*32 – 43*	Basic understanding of Excel; may manage simple tasks but struggles with intermediate functions.

17 – 19	*50 - 65*	Competent at intermediate tasks; suitable for roles requiring regular Excel use with some analytical responsibilities.
20 – 22	*70 – 80*	Strong intermediate proficiency; capable of handling reporting, data analysis, and visualization with confidence.
23 - 30	*84 – 100*	Advanced Excel user; exceeds expectations for intermediate level and may approach advanced skill sets.

Percentile Norms

Percentile ranks provide additional context by showing how a candidate compares to the tested population (n = 715).

Percentile	Score (out of 30)	Interpretation
10th	10	Lower 10% of test-takers
25th	13	Lower quartile
50th (Median)	17	Typical intermediate-level performance
75th	20	Top quartile
90th	24	Excellent performance (top 10%)

Example interpretations:

- A score of **16** places a candidate at the **50th percentile** — the median performance.
- A score of **21** places a candidate in the **top 25%** of all test-takers.
- A score of **25** places a candidate among the **top 10%** of respondents.

5.4 Suggested Use of Scores

Employers may use advisory ranges or percentile rankings to guide hiring decisions, depending on the role requirements.

- For **general office roles**, scores in the **13–16 range** may be acceptable.
- For **analyst or reporting roles**, scores of **20+** are recommended.

- Percentiles are particularly helpful for understanding how rare or common a score is in the candidate pool.

5.5 Limitations

- Test scores reflect performance on a 25-minute multiple-choice assessment. They do not capture advanced Excel abilities such as macros, VBA programming, or Power Query.
- As with any test, results should not be used as the sole basis for hiring decisions but rather as one component in a broader selection process.

6. Test Administration

The MS Excel Intermediate Test is designed for online delivery and can be administered flexibly across a variety of environments. This chapter outlines requirements and best practices for administering the assessment.

6.1 Delivery Method

- The test is delivered online through a secure testing platform.
- No software installation is required.
- The test can be accessed through any modern browser (e.g., Chrome, Edge, Firefox, Safari).

6.2 Technical Requirements

To ensure a smooth testing experience, the following minimum requirements should be met:

- **Internet connection:** Stable broadband connection.
- **Device:** Laptop or desktop computer; while mobile devices are supported, they are not recommended for best usability.
- **Browser settings:** JavaScript and cookies enabled.
- **Screen size:** At least 13-inch display recommended for readability of tables and charts.
- **Pop-up blockers:** Disabled if they interfere with test navigation.

6.3 Test Environment

- Candidates should complete the test in a quiet environment free of interruptions.
- Use of Excel or other software tools is not permitted during the test.
- It is recommended that candidates close other applications and browser tabs to maximize performance and reduce distractions.

6.4 Candidate Instructions

Before starting the test, candidates should be informed of the following:

- The test consists of 30 multiple-choice questions.
- The time limit is 25 minutes.

- Each question has six answer options, only one of which is correct.
- Questions can be skipped and returned to later.
- Scores are based on the number of correct answers; there is no penalty for guessing.

6.5 Security Measures

- Candidates are asked to confirm their identity before the test can begin.
- Test sessions should be monitored if security is critical (e.g., proctored testing for recruitment).
- Candidate results are stored securely in compliance with data privacy regulations.

6.6 Sample Questions

Before the timed portion begins, candidates are presented with two sample questions. These items are:

- **Untimed** — they do not count toward the 25-minute limit.
- **Unscored** — responses do not contribute to the final test result.
- **Representative** — they illustrate the types of questions used in the test, including both text-based and screenshot-based items.

The purpose of the sample questions is to:

- Familiarize candidates with the test format and navigation.
- Allow candidates to practice selecting an answer before the test begins.
- Reduce anxiety and ensure smoother test-taking performance.

7. Validity & Reliability

The validity of the Intermediate Excel Test was examined through multiple sources of evidence, including face validity, construct validity, and statistical analyses. Together, these results support the conclusion that the test provides a reliable measure of intermediate-level Excel proficiency.

7.1 Sample

The validity analyses presented in this chapter are based on data collected from 715 individuals who completed the MS Excel Intermediate Test.

This sample size provides a solid foundation for evaluating the test's reliability and validity evidence.

7.2 Face Validity

Face validity refers to the extent to which a test appears to measure what it is intended to measure. After completing the test, candidates were asked whether the questions reflect real workplace Excel tasks.

- **71.1%** of respondents selected *Agree*.
- **23.7%** selected *I don't know*.
- **5.15%** selected *Disagree*.

These results indicate that a strong majority of respondents perceive the test as relevant and representative of Excel use in professional settings.

7.3 Construct Validity

Construct validity assesses whether the test accurately measures Excel proficiency, as intended.

Self-Reported Skill Level
Candidates rated their own Excel ability on a scale from *Novice (1)* to *Expert (5)*. Average test scores increased consistently across all self-reported levels:

- Novice: ~11 correct answers
- Basic: ~14 correct
- Intermediate: ~18 correct
- Proficient: ~21 correct

- Expert: ~23 correct

The Intermediate test shows a clear, linear progression from Novice to Expert.

Experts score almost twice as high as Novices, and each level shows a meaningful step up from the previous one. This pattern strongly supports the test's construct validity, confirming that higher-skilled users consistently outperform lower-skilled users in a predictable and interpretable way.

7.4 Criterion-Related Validity (Concurrent Evidence)

While direct job performance data were not available, self-reported skill levels served as a proxy criterion. Test scores showed a **moderate positive association** with self-reported Excel ability (Pearson r ≈ 0.42; Spearman r ≈ 0.42).

These correlations provide consistent evidence of criterion-related validity, showing that the tests align well with individuals' own evaluations of their proficiency. While self-ratings are an imperfect criterion, the pattern of results confirms that both tests measure meaningful variation in Excel ability.

7.5 Item and Test Performance

Although item-level statistics are documented in Appendices, key findings are:

- Items span an appropriate range of **difficulty**, with most falling between 30–80% correct.
- **Discrimination values** were generally strong (>0.30), meaning items effectively differentiate between high- and low-scoring candidates.

These results confirm that the test is functioning as intended at the item level.

7.6 Reliability Evidence

Reliability was measured using Cronbach's alpha across all 30 items.

- **Cronbach's alpha = 0.88**, which indicates excellent internal consistency.
- This means that the items collectively measure a coherent construct: intermediate Excel skills.

7.7 Summary of Validity Evidence

- **Face validity**: Strong — most test-takers agreed the test reflects real workplace Excel tasks.

- **Construct validity**: Strong — higher self-reported skill levels consistently correspond with higher test scores.
- **Criterion-related validity**: Supported by moderate correlations between scores and self-reported proficiency.
- **Reliability**: Excellent internal consistency (α = 0.88).

Taken together, these findings provide robust evidence that the Intermediate Excel Test is a valid and reliable instrument for assessing intermediate-level Excel skills in professional contexts.

8. Security & Fair Use

Maintaining the security and integrity of the Intermediate-Level Excel Test is essential to ensure valid results and fair treatment of all candidates. This chapter outlines measures taken to protect test content, guidelines for candidate conduct, and principles for responsible use of test scores.

8.1 Test Security

- **Session monitoring:** Employers may choose to use online proctoring, in-person supervision, or browser lockdown tools for high-stakes testing situations.
- **Data protection:** Candidate responses and scores are stored securely in compliance with data privacy regulations (e.g., GDPR).

8.2 Candidate Integrity

- Candidates are expected to complete the test individually without assistance.
- Use of external resources such as Excel, internet searches, or notes is not permitted.

8.3 Fair Use of Scores

- Test results should be used as one component of a broader hiring or development decision-making process.
- Scores should not be the sole basis for employment decisions. Instead, they should be combined with interviews, references, and job experience.
- Employers should ensure that score interpretation is job-related and consistent with the skills required for the role.
- Candidates should not be denied employment opportunities on the basis of test performance alone if Excel skills are not essential to the role.

8.4 Ethical Guidelines

- Employers must ensure that the test is administered in a non-discriminatory manner.
- Reasonable accommodations should be provided for candidates with documented needs.
- Test data must be handled with confidentiality and should not be shared outside the hiring process

9. Appendices

The following appendices provide supporting information and reference materials for the Intermediate-Level Excel Test.

Appendix A. Glossary of Key Excel Terms

- **Cell Reference:** The address of a cell in the worksheet, such as A1 or C5.
- **Formula:** An expression used to calculate values in Excel (e.g., =SUM(A1:A10)).
- **Function:** A predefined calculation in Excel (e.g., =VLOOKUP, =AVERAGE).
- **PivotTable:** A tool used to summarize and analyze large datasets.
- **Conditional Formatting:** A feature that applies formatting automatically based on rules (e.g., highlighting cells above a threshold).
- **Named Range:** A user-defined name assigned to a cell or range of cells.
- **Data Validation:** Rules applied to cells to control the type of data that can be entered.

Appendix B. Sample Item

Domain: Data Analysis & Reporting
Skill: Using PivotTable Calculated Fields

Question:
A sales manager has created a PivotTable to analyze regional sales. She wants to calculate the profit margin percentage by dividing profit by sales within the PivotTable. Which feature should she use?

- A. Insert a new worksheet and enter the formula manually
- B. Use a Calculated Field in the PivotTable
- C. Apply Conditional Formatting to highlight profit margins
- D. Create a named range for profit and sales and use a formula outside the PivotTable

Correct Answer: B – Use a Calculated Field in the PivotTable.

Rationale:

- Option A is inefficient and not integrated with the PivotTable.
- Option C is a formatting tool, not a calculation feature.
- Option D requires work outside the PivotTable, defeating the purpose of in-table calculations.

Appendix C. Technical Requirements Checklist

- Device: Desktop or laptop computer
- Internet: Stable broadband connection
- Browser: Chrome, Edge, Firefox, or Safari (latest versions recommended)
- Screen size: 13-inch or larger recommended
- Browser settings: JavaScript and cookies enabled
- Optional: Headphones or quiet testing environment

Appendix D. Score Interpretation Tables

Advisory Score Ranges

Raw Score	*Percentile rank*	Interpretation
0 – 12	*0 – 30*	Very limited Excel knowledge; unlikely to meet expectations for intermediate-level tasks.
13 – 15	*32 – 43*	Basic understanding of Excel; may manage simple tasks but struggles with intermediate functions.
17 – 19	*50 - 65*	Competent at intermediate tasks; suitable for roles requiring regular Excel use with some analytical responsibilities.
20 – 22	*70 – 80*	Strong intermediate proficiency; capable of handling reporting, data analysis, and visualization with confidence.
23 - 30	*84 – 100*	Advanced Excel user; exceeds expectations for intermediate level and may approach advanced skill sets.

Appendix E. Percentile Norm Ranges

Percentile Norms (n = 715)

Raw Score	N	Percentile
1	1	0
2	2	0
3	5	1
4	7	2
5	14	4
6	10	5
7	19	8
8	25	12
9	17	14
10	37	19
11	24	23
12	23	26
13	27	30
14	19	32
15	36	37
16	43	43
17	47	50
18	38	55
19	32	60
20	36	65
21	40	70
22	41	76
23	28	80
24	27	84
25	32	88
26	30	92
27	17	95
28	11	96
29	12	99
30	8	100

Appendix F. Item Statistics

Item Number	Difficulty	Discrimination
1	0.70	0.44
2	0.85	0.35
3	0.79	0.36
4	0.70	0.40
5	0.76	0.47
6	0.71	0.35
7	0.67	0.47
8	0.67	0.41
9	0.64	0.46
10	0.64	0.45
11	0.66	0.51
12	0.63	0.40
13	0.62	0.39
14	0.54	0.53
15	0.57	0.40
16	0.53	0.60
17	0.63	0.46
18	0.65	0.55
19	0.52	0.43
20	0.47	0.31
21	0.53	0.40
22	0.33	0.49
23	0.27	0.27
24	0.46	0.49
25	0.39	0.43
26	0.38	0.41
27	0.18	0.20
28	0.37	0.35
29	0.34	0.37
30	0.15	0.32

Appendix G. Norm Group: Age Distribution

Age	Percentage
18 – 25	24.5%
26 – 35	34.7%
36 – 45	19.2%
46 – 60	19.2%
61+	3.2%

Appendix H. Norm Group: Country Distribution

Country	Percentage
United States	40.4
India	13.0
Canada	9.1
United Kingdom	5.0
Phillippines	4.6
Australia	3.9
New Zealand	2.7
South Africa	2.0
Malaysia	1.1
Singapore	0.9

Appendix I. Norm Group: Occupational Group

Occupational Group	Percentage
Admin and Clerical	24.0
Banking and Finance	20.6
Other	13.3
Management	6.7
Human Resources	5.3
Customer Service	5.3
Information Technology	5.0
Sales and Marketing	4.7
Engineering	3.4
Health Care	2.3
Manufacturing	2.1
Pharmaceutical	2.0