

Appendix G - OPM's Job Analysis Methodology

Introduction

There are a number of valid approaches to job analysis. The method described below provides one model. You are free to choose any method, provided that it is consistent with the *Uniform Guidelines on Employee Selection Procedures* (see www.uniformguidelines.com).

OPM's Job Analysis Methodology

OPM has been conducting Governmentwide occupational analyses for more than 10 years. Through these studies, we have identified critical competencies for more than 200 Federal clerical, technical, professional, and administrative occupations. By the end of 2002, critical competencies will have been identified for a total of more than 400 Federal occupations, including trade and labor occupations.

Our methodology establishes a “common language” for analyzing and describing jobs at all levels within an occupational field, and provides a more realistic basis for matching persons with jobs.

For example, rather than focusing on narrow indicators, such as years of experience or number of credit hours of education, our methodology looks at the full range and quality of an applicant’s education and experience in terms of how well it prepared him or her to perform the job.

How competencies should be written

You should define competencies simply and clearly and make sure that they embody a single, readily identifiable characteristic. Avoid stating a competency in way that would confuse it with a task - as frequently happens when competency statements begin with a statement such as "Ability to (perform a task)." It is also good practice to make the competency definitions behaviorally based to the extent that an individual possessing that competency can be assessed through measurable behaviors. One way to do this is to incorporate action verbs into the competency definitions (except for definitions of knowledge areas).

Qualifiers such as "Thorough Knowledge, Considerable Skill, or Basic Understanding," are unnecessary. These qualifiers should not be part of the competency definition - they do not provide meaningful information to distinguish examples of performance clearly.

- See the MOSAIC Competencies, in [Appendix F](#), for OPM's competencies.

Task and competency linkages

According to the *Uniform Guidelines*, tasks should be rated on importance for job performance and on the time spent/frequency. Competencies should be rated on importance, need at entry, and distinguishing value (between superior and barely acceptable performance). Examples of additional scales that can be used in the job analysis process are at the end of this appendix.

The *Uniform Guidelines* also require that the tasks and competencies be linked to demonstrate the respective job-relatedness of competencies. The linkage also ensures that there is a clear relationship between the tasks performed on the job and the competencies required to perform those tasks.

OPM's Job Analysis Methodology

The following table provides an overview of OPM's job analysis methodology illustrated through an example of developing a crediting plan/rating schedule. (The crediting plan/rating schedule is just one of many assessment tools available.) As you conduct the following steps, you will need the worksheets (G-8 to G-13) found in this appendix.

| Step | Action |
|------|---|
| 1 | <p>Collect information about the job. A good place to start is by reviewing existing materials that describe the work that is performed on the job. Such materials include:</p> <ul style="list-style-type: none">• Position descriptions,• Classification standards,• Subject matter expert (SME) input,• Performance standards, and• Occupational studies. <p>The tasks and competencies, Appendix F, developed through OPM's Governmentwide occupational studies are also a good source of information. Since these studies are based on a comprehensive review of job information and are very broad in scope, you may not need to develop many additional tasks and competencies beyond those included in these studies.</p> |
| 2 | <p>Use the Job Analysis Worksheet for Tasks to list the tasks that are required to perform successfully on the job based on the information and/or SME input (along with the source of that information) collected in Step 1.</p> |

| Step | Action |
|------|--|
| 3 | <p>On the Job Analysis Worksheet for Tasks:</p> <ul style="list-style-type: none"> a) Have the SMEs individually rate the tasks on the importance and frequency scales provided on the worksheet. (Note the scales shown on the worksheets are examples of scales that have been used in past job analyses. Alternative scales are provided at the end of this appendix); b) Eliminate tasks that were rated as “Not Performed” on either the importance or frequency scale by at least half of the SMEs. Of the tasks that remain, compute an average rating (excluding any “0=Not Performed” ratings from the average) across SMEs for each task on each scale; and c) Then identify which tasks are critical for the job. This involves determining cutoffs for both the importance and frequency scales. A recommended cutoff is 3.0 or above for both scales. (This will vary by the scale used, depending on the anchors associated with each scale rating). That is, tasks that, on average, were rated 3.0 or above on both importance and frequency are considered critical for the job. |
| 4 | <p>Use the Job Analysis Worksheet for Competencies to list competencies that are required to perform successfully in the job based on the job information collected and/or SME input, along with the source of that information (see Chapter 2, Section C, for how competencies should be stated).</p> |
| 5 | <p>On the Job Analysis Worksheet for Competencies:</p> <ul style="list-style-type: none"> a) Have the SMEs individually rate the competencies on the importance, need at entry, and distinguishing value scales. (Again, these scales are examples of scales used in past job analyses. Alternative scales are provided at the end of this appendix); b) Then average the SME ratings to produce an overall rating for each competency for each scale; and c) Once you have determined the SME average ratings, identify which competencies are critical for the job, based on importance and need at entry. This involves determining cutoffs for each of these scales. Recommended cutoffs for the scales shown on the worksheet are 3.0 or above for importance and 2.0 or below on need at entry. Competencies with average ratings that meet these cutoffs are considered critical for the job. Then, the ratings on the distinguishing value scale may be used to guide your decision on which of the critical competencies to include in the assessment process. A recommended cutoff on the distinguishing value scale shown on the worksheet is 3.0 or above. (Again, this will vary by the scale used, depending on the anchors associated with each scale rating). |

| Step | Action |
|------|--|
| 6 | <p>Use the Worksheet for Task and Competency Linkages to make the linkage ratings by:</p> <ol style="list-style-type: none"> In the Task No. column, write the numbers of the tasks that were identified as critical in Step 1; Write the competency numbers of the critical competencies, identified in Step 5, across the top row; Next, have each SME work independently to rate the extent to which each competency is important for effective task performance. Again, SME ratings should be averaged to come up with an overall rating for each task-competency linkage. It is recommended that a cutoff of 3.0 be used for this scale to determine which competencies are linked to each task. (Note: If any tasks/competencies are not linked, you should reconsider whether all critical tasks and competencies have been considered); and You and SMEs should then eliminate any tasks not linked to one or more competencies and only competencies that are not linked to at least one task. |
| 7 | Of the competencies remaining at the end of Step 6, eliminate competencies that cannot be reasonably assessed via a rating schedule. The resulting competencies will later on be considered for assessment. |
| 8 | <p>Determine which competencies will be used as selective and quality ranking factors (if any).</p> <p>Note: Selective factors must be documented. To document any selective factors, use a SF-39A, <i>Request and Justification for Selective and Quality Ranking Factors</i> (see Records Retention and Disposition Appendix C)</p> |
| 9 | <p>Use the Accomplishments Worksheet to record example accomplishments and SME level ratings.</p> <p>Potential sources of accomplishments include:</p> <ul style="list-style-type: none"> • SMEs, • Job information, and • Past applications. <p>Accomplishments may come from both work and nonwork related experiences.</p> |
| 10 | <p>On the Accomplishments Worksheet have:</p> <ol style="list-style-type: none"> SMEs rate the accomplishments as demonstrating a “high, medium, or low” level of the writing competency, which is typically done using a 1 to 3 rating. When making these ratings, SMEs should keep in mind that applicants should possess more in-depth, extensive, varied, and difficult experience at each successive level. Accomplishments incorporated in rating schedule items or benchmark descriptions should help differentiate these levels; and Then average the SME ratings to produce an overall level rating for each accomplishment. |
| 11 | <p>If the rating schedule is a closed-ended, automated format, use the Multiple Choice/Yes-No Worksheet to develop and record rating schedule items for each competency based on the accomplishments generated in Steps 9 and 10.</p> <p>If candidates provide written responses to open-ended questions that have to be manually scored, use the Rating Schedule Benchmark Worksheet to develop and record benchmark level descriptions and examples for each competency that will be assessed.</p> |

| Step | Action |
|------|---|
| 12 | <p>After the rating schedule is developed, the maximum number of points an applicant may receive for each response must be determined.</p> <p>The SME high/medium/low ratings can be used to help determine the number of points associated with each item/benchmark level.</p> <p>Example: You may assign 5 points for a “high” response, 3 points for a “medium” response, and 1 point for a “low” response. If there are five competencies and the maximum number of points that can be awarded for each competency is 5, the maximum number of points an applicant can receive is 25. Therefore, 25 points transmute to a rating of 100).</p> <p>Note: Appendix H provides a variety of different transmutation tables for your use. Determine the raw score and then transmute the raw score to a score that falls within 70 to 100 (see CFR 337). Appropriate veterans preference points are then added to those candidates who meet qualification requirements.</p> |

Special note

The following sample worksheets are provided to help you fill-out the worksheets needed to complete the job analysis.

[Sample Job Analysis Worksheet for Tasks](#)

[Sample Job Analysis Worksheet for Competencies](#)

[Sample Job Analysis For Task and Competency Linkage](#)

[Sample Accomplishments Worksheet](#)

[Sample Multiple Choice/Yes-No Rating Schedule Worksheet](#)

[Sample Rating Schedule Benchmark Worksheet](#)

[Occupational Analysis Scales](#)

Job Analysis Worksheet for Tasks

| Task | Source | Importance | Frequency |
|------|--------|------------|-----------|
| | | | |
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| Importance Scale | Frequency |
|--|------------------------------------|
| How important is this task to the job? | How often is the task performed? |
| 0 = Not Performed | 0 = Not Performed |
| 1 = Not Important | 1 = Every few months to yearly |
| 2 = Somewhat Important | 2 = Every few weeks to monthly |
| 3 = Important | 3 = Every few days to weekly |
| 4 = Very Important | 4 = Every few hours to daily |
| 5 = Extremely Important | 5 = Hourly to many times each hour |

Signature: _____

Title: _____

Date: _____

Job Analysis Worksheet for Competencies

| Competency | Source | Importance | Need at Entry | Distinguishing Value |
|------------|--------|------------|---------------|----------------------|
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| Importance Scale | Need At Entry Scale | Distinguishing Value Scale |
|---|---|---|
| How important is this competency for effective job performance? | When is this competency needed for effective job performance? | How valuable is this competency for distinguishing superior from barely acceptable employees? |
| 1 = Not Important | 1 = Needed the first day | 1 = Not Valuable |
| 2 = Somewhat Important | 2 = Must be acquired within the first 3 months | 2 = Somewhat Valuable |
| 3 = Important | 3 = Must be acquired within the first 4-6 months | 3 = Valuable |
| 4 = Very Important | 4 = Must be acquired after the first 6 months | 4 = Very Valuable |
| 5 = Extremely Important | | 5 = Extremely Valuable |

Signature: _____

Title: _____

Date: _____

Job Analysis Worksheet For Task And Competency Linkage

Linkage Scale

How important is this competency for effective task performance?

- 1 = Not Important
- 2 = Somewhat Important
- 3 = Important
- 4 = Very Important
- 5 = Extremely Important

| Competency Number | | | | | | | | | | | | | | |
|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Task Number | | | | | | | | | | | | | | |
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Signature: _____

Title: _____

Date: _____

Accomplishments Worksheet

Competency Title/Definition:

| Accomplishments | Level Rating (High, Medium, Low) |
|-----------------|-------------------------------------|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |

Signature:_____Signature:_____

Title:_____Title:_____

Date:_____Date:_____

Multiple Choice/Yes-No Rating Schedule Worksheet

| |
|-----------------------------|
| Competency Title/Definition |
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |
| 6. |
| 7. |
| 8. |
| 9. |
| 10. |

Signature: _____ Signature: _____

Title: _____ Title: _____

Date: _____ Date: _____

Rating Schedule Benchmark Worksheet

Competency Title/Definition:

HIGH

Description:

Examples:

MEDIUM

Description:

Examples:

LOW

Description:

Examples:

Signature: _____ Signature: _____

Title: _____ Title: _____

Date: _____ Date: _____

Sample Job Analysis Worksheet For Tasks

| Task | Source | Importance | Frequency |
|---|-------------------------|------------|-----------|
| 1. Contacts others orally to obtain information. | OPM'S MOSAIC Study | | |
| 2. Reads and understands nontechnical materials (e.g., letters, memoranda, electronic mail, simple instructions. | OPM'S MOSAIC Study | | |
| 3. Serves as primary point of contact for a specific subject area. | OPM'S MOSAIC Study | | |
| 4. Interprets and applies laws, regulations, policies, standards, or procedures to specific issues. | Position Description | | |
| 5. Promotes or develops and maintains good working relationships with key individuals or groups. | Position Description | | |
| 6. Acquires and maintains a working knowledge of relevant laws, regulations, policies, standards, or procedures. | Position Description | | |
| 7. Provides technical advice in subject matter area to others. | Classification Standard | | |
| 8. Collaborates with others or works on teams to accomplish work-related activities. | Classification Standard | | |
| 9. Uses computer systems or applications to access, create, edit, print, send, retrieve, or manipulate data, files, or other information. | Classification Standard | | |
| 10. Discusses results, problems, plans, suggestions, terms, or conditions with others. | Subject Matter Experts | | |
| 11. Uses addition, subtraction, division, or multiplication. | Subject Matter Experts | | |
| 12. Enters data or other information into computer. | Subject Matter Experts | | |

| Importance Scale | Frequency |
|--|------------------------------------|
| How important is this task to the job? | How often is the task performed? |
| 0 = Not Performed | 0 = Not Performed |
| 1 = Not Important | 1 = Every few months to yearly |
| 2 = Somewhat Important | 2 = Every few weeks to monthly |
| 3 = Important | 3 = Every few days to weekly |
| 4 = Very Important | 4 = Every few hours to daily |
| 5 = Extremely Important | 5 = Hourly to many times each hour |

Signature: _____

Title: _____

Date: _____

Sample Job Analysis Worksheet For Competencies

| Competency | Source | Importance | Need At Entry | Distinguishing Value |
|-----------------------------------|-------------------------|------------|---------------|----------------------|
| 1. Reading | OPM'S Mosaic Study | | | |
| 2. Writing | OPM'S Mosaic Study | | | |
| 3. Interpersonal Skills | Position Description | | | |
| 4. Oral Communication | Position Description | | | |
| 5. Reasoning | Classification Standard | | | |
| 6. Decision Making | Classification Standard | | | |
| 7. Customer Service | Classification Standard | | | |
| 8. Arithmetic | Subject Matter Experts | | | |
| 9. Mathematical Reasoning | Subject Matter Experts | | | |
| 10. Personnel and Human Resources | Subject Matter Experts | | | |

| Importance Scale | Need At Entry Scale | Distinguishing Value Scale |
|---|---|---|
| How important is this competency for effective job performance? | When is this competency needed for effective job performance? | How valuable is this competency for distinguishing superior from barely acceptable employees? |
| 1 = Not Important | 1 = Needed the first day | 1 = Not Valuable |
| 2 = Somewhat Important | 2 = Must be acquired within the first 3 months | 2 = Somewhat Valuable |
| 3 = Important | 3 = Must be acquired within the first 4-6 months | 3 = Valuable |
| 4 = Very Important | 4 = Must be acquired after the first 6 months | 4 = Very Valuable |
| 5 = Extremely Important | | 5 = Extremely Valuable |

Signature: _____

Title: _____

Date: _____

Sample Job Analysis For Task And Competency Linkage

Linkage Scale

How important is this competency for effective task performance?

- 1 = Not Important
- 2 = Somewhat Important
- 3 = Important
- 4 = Very Important
- 5 = Extremely Important

| Competency Number | | | | | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|----|--|--|--|--|--|--|
| Task Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 10 | | | | | | |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |

Signature: _____

Title: _____

Date: _____

Sample Accomplishments Worksheet

Competency Title/Definition: Writing

Recognizes or uses correct English grammar, punctuation, and spelling; communicates information (for example, facts, ideas, or messages) in a succinct and organized manner; produces written information, which may include technical material, that is appropriate for the intended audience.

| Accomplishments | Level Rating (High, Medium, Low) |
|--|---|
| 1. I wrote a resource booklet explaining the rules and regulations on reinstatement after retirement. I received a lot of positive feedback from customers on the booklet. | High |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |

Signature:_____ Signature:_____

Title:_____ Title:_____

Date:_____ Date:_____

Sample Multiple Choice/Yes-No Rating Schedule Worksheet

Competency Title/Definition: Writing

Recognizes or uses correct English grammar, punctuation, and spelling; communicates information (for example, facts, ideas, or messages) in a succinct and organized manner; produces written information, which may include technical material that is appropriate for the intended audience.

1. Have you successfully done work that involved translating technical or complex language (e.g., laws, regulations) into language that was more easily understood?

2.

3.

4.

5.

6.

7.

8.

9.

10.

Signature: _____ Signature: _____

Title: _____ Title: _____

Date: _____ Date: _____

Sample Rating Schedule Benchmark Worksheet

Competency Title/Definition: Writing

Recognizes or uses correct English grammar, punctuation, and spelling; communicates information (for example, facts, ideas or messages) in a succinct and organized manner; produces written information, which may include technical material, that is appropriate for the intended audience.

HIGH

Description: Composes documents or correspondence involving complex or technical information, and adapts writing to the audience's level of knowledge. Proofreads or edits complex or technical writing of others.

Examples

- Composes complex correspondence or other written work
- Explains, in writing, the application of laws, regulations, precedents, and practices
- Writes and publishes articles on program direction and content

MEDIUM

Description:

Examples:

LOW

Description:

Examples:

Signature: _____ Signature: _____

Title: _____ Title: _____

Date: _____ Date: _____

Occupational Analysis Scales

(We developed these scales for use in our MOSAIC surveys. They are available for you to use in your job analysis process).

Task Scales

| Importance Scale | Frequency | Frequency |
|--|------------------------------------|---|
| How important is this task to the job? | How often is the task performed? | Compared to all other tasks you perform, how much time do you spend performing this task? |
| 0 = Not Performed | 0 = Not Performed | 0 = Not Performed |
| 1 = Not Important | 1 = Every few months to yearly | 1 = Considerably Less Than Most Tasks |
| 2 = Somewhat Important | 2 = Every few weeks to monthly | 2 = Somewhat Less Than Most Tasks |
| 3 = Important | 3 = Every few days to weekly | 3 = Same As Most Tasks |
| 4 = Very Important | 4 = Every few hours to daily | 4 = Somewhat More Than Most Tasks |
| 5 = Extremely Important | 5 = Hourly to many times each hour | 5 = Considerably More Than Most Tasks |

Competency Scales

| Importance Scale | Distinguishing Value Scale |
|---|---|
| How important is this competency for effective job performance? | How valuable is this competency for distinguishing superior from barely acceptable employees? |
| 1 = Not Important | 1 = Not Valuable |
| 2 = Somewhat Important | 2 = Somewhat Valuable |
| 3 = Important | 3 = Valuable |
| 4 = Very Important | 4 = Very Valuable |
| 5 = Extremely Important | 5 = Extremely Valuable |

| Need At Entry Scale | Need At Entry Scale |
|---|---|
| When is this competency needed for effective job performance? | To what extent is it necessary that the employee possess this competency when entering the job? |
| 1 = Needed the first day | 1 = Essential at Entry because those who do not possess it will not acquire it through training or experience |
| 2 = Must be acquired within the first 3 months | 2 = Desirable at Entry because those who possess it develop competence more readily |
| 3 = Must be acquired within the first 4-6 months | 3 = Not Need at Entry because it is acquired through training or experience |
| 4 = Must be acquired after the first 6 months | |