



Comprehensive Personality Analysis

C.P.A.

HR•Assessments®

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Administrator's Manual



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To ensure that you are obtaining the full benefits available to you from the use of HR•Assessments® products, please read all information contained in this manual carefully. By using this assessment product, you are acknowledging that you have read and understand the general guidelines provided in this manual, and that if you have any specific questions, you have referred them to a competent testing and/or legal expert for advice. The test developer and publisher do not assume liability for any unlawful use of this product.

The test developer and publisher do not assume any responsibility for the employer's use of this test or any decision the employer makes which may violate local, state or federal law. By selling this test, the publisher is not giving legal advice.

While HR•Assessments® are designed to help predict various aspects of human behavior, score results are presented in terms of probabilities. False Positives and False Negatives are expected. EDI and the test developer are not liable for test taker, applicant or employee behaviors.



HR•Assessments® Products: An Investment in Your Company's Future

The decision to use assessment products in the employment process is one that can be very beneficial to your company in many ways. A well-designed, properly validated assessment, when used in conjunction with other employment screening tools, can save your company from investing training resources in an applicant who is not suited to perform the job for which he or she was hired, and, as a consequence, can help protect your company from negligent-hiring lawsuits.

Each HR•Assessments product has been researched and developed by our staff of testing professionals, which includes experienced industrial psychologists.

Use of Assessment Products as “Tools”

Validity studies of the assessment products we offer have shown them to be predictive of job performance and therefore quite useful during the selection process. It is important to remember that assessments should be used in conjunction with other, equally important employment screening tools – such as criminal background checks, work histories and employer references – to present a balanced picture of the particular job candidate. Only when used in coordination with one another will you be able to truly determine a “fit” between the candidate and the particular job for which he or she is applying.

Employment assessments, as defined in this manual, can be of several varieties, including trustworthiness or integrity assessments, skills-oriented assessments and personality assessments. Each assessment can center on one of these elements, or may include several different components, assessing a variety of factors. Choosing the proper assessment product for your needs is a key factor in making your selection process more effective.

Legal Aspects of Assessment Use and Administration

Although employment assessments have been in use for more than 40 years, their use became more prevalent after the passage of the Employee Polygraph Protection Act (EPPA) of 1988, which made it illegal for most private employers to use polygraph examinations as a routine pre-employment screening tool. Employment assessments that are not prohibited by the EPPA are designed to give the employer a legal way to gauge an employee's job-related skills and personality traits as an alternative to the polygraph test. Whereas the polygraph test is designed to monitor an applicant's physiological reactions to certain questions, employment assessments seek to gain information on the job candidate through a series of questions designed to measure job-related attributes.

Today, the use of employment assessments continues to increase. Many of the country's largest corporations use such screening devices on a regular basis, and have found great success in using them to hire and promote the best candidates.



Assessment Products and “Adverse Impact”

A common misperception of these assessments is that they all tend to discriminate against certain classes of applicants, in violation of state and federal laws against discrimination in employment decisions. In fact, this is not the case. Although there is evidence of poorer performance by some members of protected classes on some skills tests that include language and mathematical components, the use of such tests is still justified, so long as the skills assessed by the test are essential for the successful performance of one or more of the job’s key functions. In addition, researchers have found no evidence that well-constructed personality assessments discriminate on any unlawful basis.

However, it is incumbent upon employers who use assessment products to continually monitor selection procedures to ensure that no “adverse impact” is occurring in the overall selection process. Adverse impact is defined as a situation in which there is a substantially different rate of selection in hiring, promoting or other employment decisions that works to the disadvantage of members of a race, sex or ethnic group. If adverse impact does occur, the employer needs to be able to demonstrate the job-relatedness of the selection process. For further guidance in this area, read the *Assessment Selection and Follow-Up Procedures* section of this manual.

Federal Laws

There are federal laws and regulations governing the use of “selection” tools, such as employment assessments, insofar as they have any “adverse impact” on the employment opportunities of protected classes of individuals. Some of the more subtle aspects of these laws as they apply to the selection process are discussed in the section of this manual titled, *Using Job Analysis to Justify Use of Assessment and Its Sections (Legal Implications)*.

Title VII

Title VII of the Civil Rights Act of 1964 (Title VII), covering employers with 15 or more employees, prohibits discrimination in employment decisions on the basis of race, sex, color, religion and national origin. Title VII authorizes the use of “any professionally developed ability test, provided that such test, its administration or action upon the results is not designed, intended or used to discriminate” on any unlawful basis. In 1971, the U.S. Supreme Court, in *Griggs v. Duke Power Co.* (401 U.S. 424), adopted the standard that employer practices that had an adverse impact on minorities and were not justified by a business necessity violated Title VII. Congress amended Title VII in 1972, adopting this legal standard.

As a result of these developments, the government sought to produce a unified governmental standard on the regulation of employee selection procedures because the separate government agencies had enforcement powers over private employers, and each used different standards. This resulted in the adoption of the Uniform Guidelines on Employee Selection Procedures (Guidelines), codified at 29 CFR Part 1607, which established a uniform federal position in prohibiting discrimination in employment practices on the grounds of race, color, religion, sex or national origin, and applies to all public and private employers covered by Title VII, Executive Order 11246, the State and Local Fiscal Assistance Act of 1972, the Omnibus Crime Control and Safe Streets Act of 1968, and the Intergovernmental Personnel Act of 1970.



Highlights of the Guidelines include:

Provision of a uniform set of principles governing use of the employee selection procedures that is consistent with applicable legal standards.

Setting out validation standards for employee selection procedures that are generally accepted by the psychological profession.

The Guidelines do not require a validation of the selection device unless evidence of adverse impact exists. It is important to note also that compliance with the Guidelines does not remove the affirmative action obligations for assessment users, including federal contractors and subcontractors.

The Americans with Disabilities Act

The Americans with Disabilities Act (ADA) provides that an employer “shall not conduct a medical examination or make inquiries of a job applicant as to whether such applicant is an individual with a disability or as to the nature or severity of such disability.”

(42 USC Sec. 12112(d)(2)(A); see also 29 CFR Sec. 1630.13.) Inquiries into a person’s disabilities are prohibited at the pre-offer employment stage, except in a very narrowly defined situation when the applicant has *voluntarily* disclosed a medical condition requiring accommodation. The ADA protects disabilities, not a characteristic an employer may consider to be a personal flaw or undesirable aspect of an applicant’s personality. The ADA does not prohibit inquiries into such personality attributes as propensity for honesty, ability to get along with others, organizational skills or management skills, to cite a few examples. No question or series of questions designed to elicit information about a person’s mental impairment (as defined by the ADA), or questions that even would tend to elicit such information, should appear on an assessment product. Each HR•Assessments product has been carefully reviewed under this standard to avoid any conflict with ADA guidelines.

Recordkeeping Requirements

Various federal laws require employers to retain tests and test results for at least one year from the date the test is administered or from the date of any personnel action relating to the testing, whichever is later.

State and Local Laws

Due to the wide variety, complexity and ever-changing nature of state laws, it is impossible to summarize each state’s requirements in this brief overview. If you are unfamiliar with the state and local laws governing the use of screening devices applicable in your locale, consult a qualified labor law attorney or testing specialist who may provide competent guidance on this topic.



Assessment Selection and Follow-Up Procedures

Selection

Generally, when selecting an assessment or any other selection tool, you should choose one that has been designed specifically to measure the skills or traits necessary for the position in question. It is recommended that a thorough job analysis be performed to determine the connections between job functions and the attributes the assessment product is designed to measure.

Monitoring

Monitor your selection process to ensure compliance with all applicable federal, state and local laws, checking your selection process for evidence of adverse impact. This should be conducted on a continual basis. HR•Assessments products include testing logs that can be used to record each assessment taker's scores, as well as other important data that can be used to compute your own norms and adverse-impact statistics.

Validation

Should your monitoring results indicate that adverse impact is occurring in the selection procedures, you should determine in which component of the selection process it is happening. If the use of a certain assessment product is found to be the cause, you will need to conduct a validation study of the assessment. Qualified testing professionals may be contacted to help in conducting a validity study. These professionals will be able to help determine whether the assessment is the cause of the adverse impact and whether the assessment is emphasizing a bona-fide occupational qualification for the job. In some instances, assessments that in some context may be considered discriminatory may be lawful to use in others, so long as the assessment is centered on a bona-fide occupational qualification.

Scoring

Cutoffs and suggested "pass" or "fail" scores are not provided with these assessments. Instead, norms and, in some instances, average assessment scores for various levels of job performance are provided. This information is provided for the elements the assessment is designed to measure. This information is a result of the testing universe used in the validation studies performed by HR•Assessments, and is for demonstrative purposes only. Assessment results always should be interpreted, along with other information gathered through your selection process, to ensure that you get a complete picture of the job candidate or employee. It is recommended that you administer the assessment to your current employees so you can develop your own company-specific norms for assessment performance. These norms then can be used as benchmarks during your assessing and selection process.



The Importance of Profiling Personalities

Matching the right personality to the right position or work group is critical to the success of your company. If the job calls for someone who can change duties easily on a regular basis, you need someone who is flexible to change. If a job calls for someone to work primarily alone, you would want a motivated self-starter. If the work group is in need of a strong leader, some of the qualities you may seek in an applicant are ambition, a positive attitude, good people skills, and the ability to make calculated risks when appropriate. Achieving the perfect fit between employee and job or work group is directly related to personality assessment.

The HR•Assessments® Comprehensive Personality Analysis (C.P.A.) was designed specifically to help you match the best-suited employees to the job or work group. The C.P.A. identifies 7 primary personality dimensions and 21 subdimensions (3 subdimensions for each primary dimension):

1. Service Orientation

- Helping Disposition: enjoys helping others
- Cooperation: works well with others, is able to compromise
- Nonconfrontational: is not argumentative, not confrontational

2. Conscientiousness

- Organization: is organized, plans ahead
- Hard-Working: works hard to get ahead
- Dependable: can be relied upon to get the job done

3. Intellect

- Investigative: enjoys researching ideas, problems
- Problem Solving: enjoys solving problems
- Idea Generating: enjoys thinking “outside the box”

4. Ambition

- Competitiveness: is motivated by competition
- Leadership: enjoys being in a leadership role
- Risk Taking: enjoys taking calculated risks

5. Extroversion

- People-Oriented: enjoys being around other people
- Assertiveness: would rather take charge than be reserved
- Positive Attitude: always thinks the best

6. Openness

- Creativity: is an innovative thinker
- Wide Interests: willing to try new things
- Artistic: is artistically inclined

7. Adjustment

- Trusting: trusts the intentions of others
- Stress Management: handles work-related pressures well
- Self-Confidence: believes in self



The information gathered from the C.P.A. can be used in two beneficial ways:

- To select *applicants* who have personalities compatible to specific jobs or work groups.
- To identify *current employees'* profiles so their strengths can be maximized in their current jobs or during their career development.

Selecting Top Applicants

Once you have determined the essential personality dimensions necessary to perform the job, the C.P.A. can help you compare an applicant's disposition to the requirements of that job. You could also test your existing staff to determine a benchmark and then compare applicants to that benchmark. This would allow you to identify those individuals that would best "fit" into your work group. Doing this should significantly increase your chances of matching the right personality to the job or department.

The C.P.A. also can be used as a powerful interviewing tool. An applicant's responses to specific test questions can be used to generate follow-up interview questions that further assess the applicant's personality, helping you uncover hidden behavioral tendencies.

Determining Current Employee Personalities

In addition to achieving the perfect match between applicants and open positions, the C.P.A. also can be used to evaluate current employees. Using the C.P.A., managers have a better understanding of how to maximize strengths and minimize weaknesses. It can also help managers choose the managerial style that works best with each employee.

Research has shown that the better the match between a worker's personality and the personality dimensions required for the job, the greater the chances are for high productivity and job satisfaction. Incorporating the C.P.A. into your selection process should significantly increase the accuracy of your hiring decisions and assist you in determining the perfect match between applicant or employee and the job or work group.



Description of the C.P.A.

The C.P.A. provides a reliable measurement of seven personality dimensions (i.e., service orientation, conscientiousness, intellect, ambition, extroversion, openness, and adjustment) and their respective subdimensions (see page 8). The C.P.A. consists of 131 questions with a strongly agree/strongly disagree answer format – 126 questions are on assessing the 7 personality characteristics and 5 questions make up the Deception Scale. The Deception Scale is discussed in detail in the section of this manual titled *Deception Scale Score*. Although the test is untimed, most people complete it in less than 30 minutes.

The questions that assess each dimension were developed based on information gathered from an extensive review of the psychological literature on personality measurement. Each question was written specifically with the employment environment in mind, unlike most other “clinically based” personality assessment instruments. Applicants view tests designed specifically for the employment setting as more job-relevant (face valid) than those developed for clinical assessment and therefore are less likely to be questioned in terms of their relevance to the position being applied for.



Using Job Analysis to Justify Use of Assessment and Its Sections (Legal Implications)

From a legal standpoint, if a test is to be used for selection or promotion purposes, it is important that users of the test take the necessary steps to establish a clear linkage between the job tasks and the occupational environments measured by the test. This relevancy should exist to meet the principles outlined in the Uniform Guidelines on Employee Selection Procedures (1978) and other federal government, employment-related legislation, such as Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, and the American with Disabilities Act of 1990.

The tasks that are crucial or essential to the job in question should first be identified. Then, the abilities underlying each task can be determined. This process should reveal the traits that are relevant to the job in question and should be carefully documented to justify the appropriateness of the C.P.A. in the employee selection process.

The following are examples of job abilities similar to those measured by the C.P.A.

Task	Personality Scale
Handles incoming service-related customer calls.	Service Orientation
Performs all duties assigned in a timely and organized manner with little or no supervision.	Conscientiousness
Uses available resources effectively when problem solving.	Intellect
Directs and motivates department staff to achieve established goals and objectives.	Ambition
Obtains sales leads through interactions with conference attendees.	Extroversion
Creates unique and innovative advertising campaigns.	Openness
Handles multiple tasks effectively.	Adjustment

As a general guideline for compliance with federal discrimination and disability laws, test users should not subject test takers to any adverse employment decision based on a test result, unless the test result and other factors considered in the decision-making process reveal that the person does not possess qualifications that are crucial or essential to the job in question. To illustrate, if a test taker performs poorly on a test section designed to measure inspection skills, and inspection skills are not crucial or essential to the position for which the test taker is being considered, the test result should not serve as a basis for excluding the test taker from the position. Similarly, if a test result indicates that a test taker is unable to perform certain physical tasks that are not crucial or essential to the job position,



the test taker should not be excluded from that position on the basis of the test result.¹ Test users can avoid such a scenario altogether by carefully identifying the tasks that are essential to the job position at issue, and administering only those tests or test sections that are appropriate and relevant to the position's requirements.

Tests or test sections that measure proficiency in the English language also should be administered in accordance with these principles. Thus, if spelling, grammar, vocabulary or reading comprehension skills are not essential to a job position, a test taker should not be subjected to an adverse employment decision based on poor test results in those areas. Requiring employees or applicants to be fluent in English may constitute national origin discrimination in violation of Title VII of the Civil Rights Act if the requirement is not justified by business necessity or directly related to job performance. There are some limited exceptions to this rule for jobs involving dangerous work requiring a heightened understanding of written or verbal safety instructions in English, or service positions that require significant communication in English with the public. Test users should consult an attorney before subjecting any test taker to an adverse employment decision on the basis of English language deficiencies.

Administration Instructions Paper for Tests

Please read these instructions before administering the C.P.A.

- 1.** Before administering, you should be familiar with the assessment and its instructions. Be prepared to answer any questions that may be raised.
- 2.** The assessment should be administered in a quiet room, free from distractions and interruptions.
- 3.** Provide to each applicant/employee a ballpoint pen to ensure clear markings on the answer sheets.
- 4.** Distribute the assessment and have the applicant/employee complete the information on the front page (i.e., name, social security number and date).
- 5.** Introduce the assessment to the applicant/employee. Say, “This questionnaire is designed to assess your opinion of different work-related behaviors and attitudes. There are no right or wrong answers. Responses will vary depending on each individual’s personal work style.”
- 6.** Have the applicant/employee read the directions. You should say, “Read the directions on the front cover. Remember there are no right or wrong answers, so please be as honest as possible. Your unique style of thinking about or handling various work-related situations may be exactly what the job requires. Remember, your first response is often your most candid and honest one.”
- 7.** After the applicant/employee has read the assessment directions, ask, “Are there any questions?” If there are no questions, state, “There is no time limit, so please take your time and make sure you answer every question. Remember to think about the questions as they relate to your day-to-day working situations and not to situations outside of the working environment. You may begin.”

¹ If the test taker's ability to perform a particular physical task is essential to the job position at issue, the Americans with Disabilities Act may require the test user to provide certain accommodations to facilitate the test taker's performance of the task at issue. Test users should consult an attorney before making any adverse employment decision based upon a test taker's physical inability to perform a task measured by a test result.



Test users who are subject to the Americans with Disabilities Act of 1990 may be required to provide accommodations to disabled test takers who need assistance during the testing process. This may include, for example, relaxing the time limitations of timed tests, offering visual or audio assistance, or providing special lighting or seating arrangements. Test users who are uncertain of their obligations under the Americans with Disabilities Act should consult an attorney if an accommodation is requested in the testing process.

8. Once the applicant/employee completes the assessment, ask him/her to make sure he/she has answered every question. When the assessment is turned in, say, "Thank you. We appreciate you taking the time to complete this questionnaire."

Scoring Instructions for Paper Tests

1. Open the test and tear off the perforated tab on the right side of the test. Carefully separate the test cover from the answer key.
2. Notice that the key is separated into eight parts by horizontal lines. The first seven parts correspond to the seven major personality dimensions measured by the C.P.A. The last part corresponds to the Deception Scale.

For each of the seven major personality sections, there are three sub-dimension scores that can be calculated. Below are the item numbers that correspond to each C.P.A. major personality scale as well as their respective subdimensions.

Service Orientation

Helping Disposition: items 1-6
Cooperation: items 45-50
Nonconfrontational: items 89-94

Conscientiousness

Organization: items 7-12
Hard-Working: items 51-56
Dependable: items 95-100

Intellect

Investigative: 13-18
Problem Solving: 57-62
Idea Generating: 101-106

Ambition

Competitiveness: 19-24
Leadership: 63-68
Risk Taking: 107-112

Extroversion

People-Oriented: 25-30
Assertiveness: 69-74
Positive Attitude: 113-118



Openness

Creativity: 31-36
Wide Interests: 75-80
Artistic: 119-124

Adjustment

Trusting: 37-42
Stress Management: 81-86
Self-Confidence: 125-130

Deception Scale (Questions 43, 44, 87, 88 & 131)

The applicant's or employee's answers should appear as circles on the carbonless key. There are no "correct" or "incorrect" answers. The Scale scores are determined by adding up all the point values for the items that correspond to each personality scale or subdimension scale.

For example, to determine an individual's score on the Service Orientation scale, add the circled values to items 1-6 (Helping Disposition), 45-50 (Cooperation) and 89-94 (Nonconfrontational) and write these in the corresponding score boxes. Then add these scores together and write this sum in the box along the right side of the key titled Service Orientation. Use the same procedure to obtain the scores for each of the remaining six scales. See the *Deception Scale Score* section on page 14 for instructions on how to obtain and interpret this score. The total C.P.A. score is obtained by adding the following scores: Service Orientation + Conscientiousness + Intellect + Ambition + Extroversion + Openness + Adjustment. The Deception Scale Score is not included in the total C.P.A. score.

If an applicant/employee circles two answers for the same question, count the answer with the lower value. If an answer choice is marked with an **X**, this indicates that the applicant/employee made a mistake and it should not be counted.



Administration Instructions for Web-based Tests

Please read the following instructions before administering this test.

To access the Online Testing website:

Make sure to be using Internet Explorer to access the site

1. Open your web browser and go to <http://www.gneiltesting.com>
2. Click **Administrator Login**
3. Enter the user name and password we've provided you via e-mail.

Step 1 – Create applicant(s)

It is important that you complete this step first as most of the other screens will not be functional until applicant names have been entered into the system.

In the Applicant Setup tab, fill out the form with the applicants information and click the **Save** button at the bottom left of the page. You should receive the message “You have successfully created a new applicant.” If you wish to create more applicants, click on the **Create New Applicant** button at the bottom of the page for a blank form and don’t forget to click the **Save** button after entering each applicant.

Step 2 – Assign a test to an applicant

Click the “Assign Test” tab and select the applicant you would like to assign a test to from the drop down list. Below you will see a list of tests that are available to the selected applicant. To the right of each test is a link to view their respective Administrator’s Manuals. Click the checkbox next to the test you wish to assign, then click the **Assign Test** button at the bottom of the page.

Step 3 – Administer a test

Please inform your applicants:

1. Take the test using **only** Internet Explorer.
2. Make sure pop-up blockers are inactivated as the system will open a new screen.
3. Do not use the back button on the task bar during the test, as this will kick the applicant out of the test.

Click the “Administer Test” tab. Select an applicant, with previously assigned tests, from the drop down list. Select the test that you want to administer. You may administer the test in one of three formats:

The **Begin Test Now** button will start the test immediately.

The **Send Email** button will e-mail an applicant the URL to our testing site along with a unique Session ID for them to enter to take the test.

The **Print Access Info** button will printout the URL to our testing site along with a unique Session ID, for the applicant, to enter to take the test.



Scoring Instructions for Web-based Tests

All web-based tests are scored automatically. Please read the following instructions to view the scores of a test.

View Test Results

Once a test has been completed, log in as an administrator and click the “Test Results” tab. You may view test results in one of two ways:

1. Select the applicant’s name from the “Applicant Name:” drop down list and click the **Show Tests for Applicant** button. This presents all tests taken by the selected applicant. Click on one of the tests to present its results.

-or-
2. Select the test from the “Test Name:” drop down list and click the **Show Applicants for Test** button. This presents all applicants who have taken the selected test. Click on the applicant’s name to present test results.

At any time in the future you may go back and view past applicants’ test results. They are saved in our system indefinitely.

Interpreting the Test Results

There are five tabs on a test’s results page:

Test Scores: Presents raw score, corresponding percentile with interpretive text and the average score for each test scale.

Test Score Graphs: Presents the same information as Test Scores along with the graphical view of the corresponding percentile score.

Interview Questions: Presents suggested follow-up questions to help you further evaluate the candidate’s responses to particular test items. If the test does not include this feature, clicking on this tab will result in the following message: “There are no follow-up interview questions for this test.”

Candidate Responses: Lists each test question along with the applicant’s response. If a test includes multiple scales, the test questions and applicants’ responses are separated by Scale.

Utilities: Allows you to change your online testing password and print the various test result sections.



Interpretation and Use of Scores

To help you hire the best individual for your organization or to assist you in identifying areas of strength and areas for development of your current staff, the C.P.A. scale scores should be used in conjunction with other applicant information (e.g., work history, references, skills assessments). A high scale score indicates that the applicant/employee is likely to demonstrate behaviors indicative of the personality dimensions the scale measures. A low scale score suggests the individual may be deficient in that particular area.

When interpreting scale scores, do so by examining all scores. Do not emphasize just one scale. For example, high scores on Extroversion, Conscientiousness and Ambition might be indicative of a highly motivated yet responsible salesperson. However, a high score on Extroversion and low scores on Adjustment and Conscientiousness may be associated with delinquent behavior. Therefore, all scale scores need to be examined together to see how they might interact so we might begin to predict behavior.

The definition of each C.P.A. scale is:

1. Service Orientation

Individuals who score highly on this scale enjoy helping others. Many times they will sacrifice themselves for the benefit of others. They tend to work cooperatively with others, compromising when necessary. They get along well with most people and are liked by many. They generally avoid arguments and are nonconfrontational. The extent to which these individuals climb the corporate ladder will depend partly on their Ambition scores. High Service Orientation and low Ambition may lead to a service-oriented manager who is unwilling to confront problem employees, nor take the necessary risks when appropriate.

Individuals who score poorly on Service Orientation tend to be competitive, cold and bossy. These individuals do well in occupations that involve rigid instruction (e.g., the military, law enforcement). Managers with lower scores on Service Orientation and high scores on Ambition tend to be very demanding and task-oriented. This management style may increase stress within the work group while frustrating and alienating employees.

2. Conscientiousness

Individuals with high Conscientiousness scores are organized, thoughtful, detail-oriented and plan ahead. They take work very seriously and are hard-working. They are dependable and can be counted on to get the job done. The extreme cases are workaholics who can be obsessed with cleanliness and organization. In some cases, high scorers also can lean toward being conservative, somewhat reserved and reluctant to change. Barrick and Mount (1991) and other researchers have found conscientiousness to be an excellent predictor of job success in a variety of jobs and situations.²

3. Intellect

The Intellect scale measures how much an individual enjoys solving complex problems, investigating things, researching ideas, and thinking outside the norm. High Intellect scores are associated with those who like to think of new and better ways of doing things (e.g., inventors, scientists, engineers, management).

Conversely, low scorers on Intellect are less curious, less imaginative, not requiring so much cognitive stimulation. Lower to mid-level jobs that require repetitive or basic tasks (e.g., data entry, assembler, maintenance personnel) are examples of jobs that may be satisfactory for those scoring low on Intellect.

² Barrick, M. R., & Mount, M. K. (1991). "The Big-Five personality dimensions in job performance: A meta analysis." *Personnel Psychology*, 44, 1-26.



4. Ambition

Individuals scoring highly on Ambition tend to be very competitive and achievement-oriented. Many enjoy being in a leadership role. They take calculated risks if it means getting ahead. Jobs with the opportunity for growth (both personal and financial) are ideal for ambitious people (e.g., management, sales). Need for achievement, or Ambition as defined here, has been found to predict managerial success.^{3,4}

Low scorers on the Ambition scale are less concerned with competition and achievement. They are easier to satisfy. Individuals who are satisfied being in blue-collar jobs with little opportunity for growth are generally those with average or low ambition.

5. Extroversion

High scores on the Extroversion scale translate to individuals who are outgoing, enjoy being around other people, are assertive, are generally positive and happy, are the “life of the party,” and thrive on being the center of attention. Effective salespeople tend to score highly on Extroversion. High Extroversion scores also have been found to be related to interests in social (e.g., teachers and therapists) and enterprising occupations (e.g., management jobs).⁵

Low scores on extroversion are associated with individuals who are shy, reserved and quiet. These individuals may feel more comfortable in jobs that involve less interaction with people. For example, researchers, librarians and engineers have low scores on Extroversion.

6. Openness

Those who score highly on Openness are generally creative, innovative thinkers. These are individuals who think outside the norm. They have a wide range of interests and are willing to try new things. In many cases, they are artistically inclined. Professions that are likely to attract people who score highly on Openness are actors, musicians, writers, inventors, product designers and management.

Low scorers on Openness are generally conservative thinkers, have few interests, are predictable in thought, and rarely stray from the norm. People with low Openness scores tend to be satisfied in jobs requiring little change, jobs that require the same tasks and responsibilities with little opportunity for diversion.

7. Adjustment

Individuals who score highly on this scale are generally well-adjusted, (meaning they are trusting), believe in themselves and are self-confident, stay calm during stressful situations, and are stable and steady. Researchers have suggested that scores on Adjustment serve as a moderator when it comes to career issues.⁶ Those who score highly on Adjustment tend to be more successful in their careers than one might expect given their other talents, but low Adjustment scores tend to bring down the performance of individuals who otherwise would be expected to do well.

³ Orpen, C. (1983). "The development and validation of an adjective check-list measure of managerial need for achievement." *Psychology: A Quarterly Journal of Human Behavior*, 20, 38-42.

⁴ Ghiselli, E. E. (1971). "Explorations in managerial talent." Pacific Palisades, CA: Goodyear.

⁵ Holland, J.L. (1985). "Making vocational choices: A theory of vocational choices and work environments" (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

⁶ Hogan, R. & Hogan, J. (1995). *Hogan Personality Inventory Manual*, 2nd Edition. Hogan Assessment Systems, Inc.



8. Total C.P.A. Score

In some situations (depending on the specific requirements of the job), the ideal candidate for a particular job will have relatively high scores on all dimensions measured by the C.P.A. For such situations, the overall C.P.A. score should be used as part of the evaluation process. However, even when the overall C.P.A. score is being used to compare applicants, it is highly recommended that each individual scale score also be examined. In theory, an applicant could score relatively poorly on one or more C.P.A. scales (suggesting he/she is “weak” in those areas) yet score so high on the remaining scales that his/her overall score could end up in the “average to high” range. For this reason, all scale scores always should be examined to ensure that areas of strength and weaknesses are identified across candidates, thus producing a comprehensive and thorough picture of each applicant.

Deception Scale Score

Two issues that arise regarding measuring personality tendencies in applied settings such as those in the C.P.A. are (1) whether the test taker has the ability to improve his/her score, or “fake” results, and (2) whether trying to improve the outcome is an undesirable quality.

When a job candidate takes a personality inventory, a common critique is that he/she has the opportunity to answer in ways intended to enhance his/her score. In studies when test takers are instructed to try to enhance their scores, there is evidence that some people indeed can alter personality measures. Despite this fact, empirical evidence also shows that the base rate of faking during the actual employment screening process is rare and infrequent (Dunnette, McCartney, Carlson & Kirchner, 1962),⁷ (Hough, Barge, Houston, McGue, & Kamp, 1985).⁸

The fact that there are rare cases when some people can enhance personality scores raises the second issue: the question of whether self-enhancement tendencies are merely a function of most normal interaction. In a social context, people habitually participate in casting the best possible light on themselves, and, in fact, are judged positively when successful. Consequently, it may be viewed that the ability to improve a personality score is an index of social competence.

Although test faking is uncommon, and even when it does take place, changes criterion-related validities only slightly (Hough, Easton, Dunnette, Kamp, & McCloy, 1990),⁹ the C.P.A. takes extra precautions against attempted test faking.

As seen in the *Validity and Reliability* section of this manual, the C.P.A. is demonstrably valid for personnel selection regardless of any faking that may have occurred. Further, the C.P.A. includes a Deception Scale that detects test takers who attempt to present themselves in an overly favorable light, and alerts the employer to the apparent response distortion. This Deception Scale is designed to alert you about applicants who give answers that vary from the norm. This is not a polygraph or lie detector test, and its results should not be used as such.

The Deception Scale score can range from “0” to “5.” The higher the score, the likelier the applicant was trying to present him/herself in a favorable light. This suggests that some of their responses to the inventory may indicate how they want you to perceive them and not necessarily how they truly feel. The following is a general guideline that you can use when interpreting the Deception Scale. However, as you test more applicants and follow up with more targeted interview questions that offer more insight into the applicants’ responses, you may develop your own interpretation guidelines.

⁷ Dunnette, M.D., McCartney, J., Carlson, H.C., & Kirchner, W.K. (1962). “A study of faking behavior on a forced-choice, self-choice, and self-description checklist.” *Personnel Psychology*, 15, 13-24.

⁸ Hough, L.M., Eaton, N.K., Dunnette, M.D., Kamp, J.D., & McCloy, R.A. (1990). “Criterion-related validities of personality constructs and the effect of response distortion on those validities.” *Journal of Applied Psychology*, 75, 581-595.

⁹ Hough, L.M., Barge, B.N., Houston, J.S., McGue, M.K., & Kamp, J.D. (1985, August). “Problems, issues, and results in the development of temperament, biographical, and interest measures.” Paper presented at the 93rd Annual Meeting of the American Psychological Association, Los Angeles.



A score range of 0-1 suggests that there is a Low Likelihood that the applicant was attempting to “fake” his/her responses. The applicant’s responses are likely to be an accurate representation of his/her attitudes and behaviors.

A score range of 2-3 suggests that there is a Moderate Likelihood that the applicant attempted to “fake” some of his/her responses. Some of the applicant’s responses may not accurately represent his/her true attitudes. However, as mentioned above, it is normal for some applicants to attempt to present themselves in a favorable light during the interview/testing process. This score range is not likely to invalidate the test results.

A score range of 4-5 suggests that there is a High Likelihood that the applicant attempted to “fake” some of his/her responses. Some of the applicant’s responses may not accurately represent his/her true attitudes. Follow-up interview questions asking the applicant to give job- or work-related examples of some of his/her overly positive responses is recommended.

Norms

When evaluating applicants, norms provide a point of reference regarding the relative scale score of each applicant/employee. Norms are the average scores or distribution of scores obtained from the study sample. These score “patterns” can be compared to your applicants’ or employees’ scale scores to better define their personality characteristics.

Tables 1 through 30 on the following pages present the distribution of scores for each Scale and the associated percentile rank for the employees who have participated in C.P.A. validity and norm studies. The percentile rank is the percentage of applicants/employees in the sample who obtained lower scores than the corresponding test score. For example, when reviewing Table 1, it can be said that an applicant/employee obtaining a score of 26 scored in the 90th percentile. This means the applicant/employee scored higher than 90% of the applicants/employees in the norm sample.



Table 1
Helping Disposition

Test Score	Corresponding Percentile
29+	99
28	97
27	94
26	90
25	83
24	74
23	62
22	49
21	36
20	25
19	16
18	10
17	6
16	3
15	2
14 or less	1

Average Score 23
Standard Deviation 3.12
Number of Participants 5,362



Table 2
Cooperation

Test Score	Corresponding Percentile
30	99
29	97
28	93
27	87
26	78
25	67
24	53
23	34
22	21
21	13
20	8
19	5
18	3
17 or less	1

Average Score 24
Standard Deviation 2.78
Number of Participants 5,362



Table 3
Nonconfrontational

Test Score	Corresponding Percentile
30	99
29	97
28	94
27	88
26	82
25	75
24	66
23	53
22	41
21	30
20	22
19	15
18	10
17	6
16	3
15	2
14 or less	1

Average Score 23
Standard Deviation 3.50
Number of Participants 5,362



Table 4
Service Orientation

Test Score	Corresponding Percentile
86+	99
84-85	98
83	97
82	95
81	94
80	92
79	90
78	88
77	85
76	82
75	79
74	74
73	70
72	64
71	59
70	53
69	47
68	41
67	35
66	30
65	25
64	20
63	17
62	14
61	11
60	9
59	7
58	6
57	4
55-56	3
53-54	2
52 or less	1

Average Score 70
Standard Deviation 7.24
Number of Participants 5,362



Table 5
Organization

Test Score	Corresponding Percentile
30	99
29	98
28	93
27	86
26	76
25	65
24	53
23	41
22	29
21	19
20	13
19	7
18	5
17	2
16 or less	1

Average Score 24
Standard Deviation 312
Number of Participants 5,362



Table 6
Hard-working

Test Score	Corresponding Percentile
30	99
29	98
28	95
27	90
26	83
25	74
24	63
23	49
22	36
21	25
20	15
19	8
18	5
17	2
16 or less	1

Average Score 24
Standard Deviation 3.00
Number of Participants 5,362



Table 7
Dependability

Test Score	Corresponding Percentile
30	99
29	97
28	92
27	86
26	78
25	68
24	57
23	42
22	29
21	18
20	10
19	5
18	3
17 or less	1

Average Score 24
Standard Deviation 2.93
Number of Participants 5,362



Table 8
Conscientiousness

Test Score	Corresponding Percentile
87+	99
86	98
85	97
84	96
83	95
82	93
81	91
80	88
79	85
78	81
77	77
76	74
75	69
74	65
73	60
72	54
71	49
70	43
69	38
68	33
67	28
66	23
65	20
64	16
63	12
62	9
61	7
60	6
59	4
58	3
56-57	2
55 or less	1

Average Score 72
Standard Deviation 7.31
Number of Participants 5,362



Table 9
Investigative

Test Score	Corresponding Percentile
30	99
29	98
28	95
27	91
26	86
25	79
24	70
23	58
22	47
21	36
20	27
19	19
18	13
17	9
16	6
15	3
14	2
13 or less	1

Average Score 23
Standard Deviation 3.64
Number of Participants 5,362



Table 10
Problem Solving

Test Score	Corresponding Percentile
30	99
29	98
28	95
27	91
26	87
25	81
24	75
23	60
22	45
21	32
20	23
19	16
18	11
17	7
16	4
15	3
14 or less	1

Average Score 23
Standard Deviation 3.35
Number of Participants 5,361



Table 11
Idea Generating

Test Score	Corresponding Percentile
29+	99
28	98
27	97
26	95
25	93
24	91
23	84
22	77
21	67
20	57
19	46
18	36
17	26
16	19
15	12
14	8
13	4
12	3
11 or less	1

Average Score 20
Standard Deviation 3.78
Number of Participants 5,359



Table 12
Intellect

Test Score	Corresponding Percentile
84+	99
82-83	98
81	97
80	96
79	95
78	94
77	93
76	91
75	89
74	87
73	85
72	82
71	78
70	75
69	70
68	66
67	61
66	56
65	51
64	46
63	41
62	37
61	33
60	29
59	25
58	22
57	18
56	15
55	12
54	10
53	9
52	7
51	6
49-50	4
48	3
46-47	2
45 or less	1

Average Score 65
Standard Deviation 8.50
Number of Participants 5,362



Table 13
Competitiveness

Test Score	Corresponding Percentile
28+	99
27	98
26	96
25	92
24	87
23	79
22	69
21	56
20	45
19	33
18	23
17	15
16	10
15	6
14	3
13	2
12 or less	1

Average Score 21
Standard Deviation 3.32
Number of Participants 5,362



Table 14
Leadership

Test Score	Corresponding Percentile
30	99
29	98
28	96
27	93
26	89
25	82
24	74
23	63
22	50
21	37
20	27
19	18
18	13
17	8
16	5
15	3
14	2
13 or less	1

Average Score 22
Standard Deviation 3.44
Number of Participants 5,361



Table 15
Risk Taking

Test Score	Corresponding Percentile
29+	99
28	98
27	97
26	94
25	90
24	85
23	74
22	63
21	51
20	40
19	28
18	19
17	11
16	6
15	3
14	2
13 or less	1

Average Score 21
Standard Deviation 3.28
Number of Participants 5,361



Table 16
Ambition

Test Score	Corresponding Percentile
82+	99
80-81	98
79	97
78	96
77	95
76	94
75	92
74	90
73	88
72	85
71	82
70	78
69	74
68	70
67	65
66	60
65	55
64	49
63	44
62	39
61	34
60	29
59	24
58	21
57	17
56	14
55	11
54	9
53	7
52	6
51	4
50	3
48-49	2
47 or less	1

Average Score 65
Standard Deviation 7.71
Number of Participants 5,362



Table 17
People Orientation

Test Score	Corresponding Percentile
30	99
29	97
28	94
27	89
26	83
25	76
24	68
23	55
22	44
21	33
20	25
19	19
18	15
17	11
16	8
15	6
14	4
13	2
12 or less	1

Average Score 23
Standard Deviation 3.95
Number of Participants 5,362



Table 18
Assertiveness

Test Score	Corresponding Percentile
28+	99
27	98
26	97
25	95
24	92
23	87
22	80
21	70
20	59
19	48
18	38
17	27
16	19
15	12
14	8
13	4
12	2
11 or less	1

Average Score 20
Standard Deviation 3.55
Number of Participants 5,362



Table 19
Positive Attitude

Test Score	Corresponding Percentile
30	99
29	97
28	94
27	90
26	85
25	79
24	70
23	52
22	40
21	30
20	21
19	14
18	10
17	6
16	4
15	2
14 or less	1

Average Score 23
Standard Deviation 3.42
Number of Participants 5,362



Table 20
Extroversion

Test Score	Corresponding Percentile
83+	99
82	98
80-81	97
79	95
78	94
77	92
76	91
75	89
74	87
73	84
72	81
71	77
70	73
69	69
68	64
67	59
66	54
65	49
64	44
63	39
62	35
61	31
60	27
59	23
58	20
57	17
56	15
55	12
54	11
53	9
52	7
51	6
50	5
49	4
48	3
46-47	2
45 or less	1

Average Score 65
Standard Deviation 8.51
Number of Participants 5,362



Table 21
Creativity

Test Score	Corresponding Percentile
28+	99
27	98
26	96
25	93
24	89
23	82
22	72
21	61
20	50
19	41
18	33
17	26
16	21
15	16
14	12
13	8
12	5
11	2
10 or less	1

Average Score 20
Standard Deviation 4.01
Number of Participants 5,362



Table 22
Wide Interests

Test Score	Corresponding Percentile
28+	99
27	98
26	96
25	93
24	88
23	79
22	67
21	52
20	39
19	27
18	18
17	11
16	7
15	3
14	2
13 or less	1

Average Score 21
Standard Deviation 3.03
Number of Participants 5,362



Table 23
Artistic

Test Score	Corresponding Percentile
30	99
29	95
28	90
27	86
26	82
25	76
24	68
23	55
22	45
21	35
20	28
19	21
18	16
17	11
16	8
15	6
14	4
13	3
12	2
11 or less	1

Average Score 23
Standard Deviation 4.27
Number of Participants 5,362



Table 24
Openness

Test Score	Corresponding Percentile
82+	99
80-81	98
79	97
78	96
77	95
76	93
75	91
74	89
73	87
72	84
71	81
70	78
69	74
68	70
67	65
66	61
65	56
64	52
63	47
62	42
61	38
60	34
59	30
58	26
57	23
56	20
55	18
54	15
53	12
52	10
51	9
50	7
49	6
48	5
47	4
46	3
44-45	2
43 or less	1

Average Score 64
Standard Deviation 8.79
Number of Participants 5,362



Table 25
Trust

Test Score	Corresponding Percentile
29+	99
28	97
27	96
26	93
25	90
24	84
23	68
22	57
21	45
20	36
19	27
18	20
17	14
16	11
15	7
14	5
13	3
12	2
11 or less	1

Average Score 21
Standard Deviation 3.73
Number of Participants 5,361



Table 26
Stress Management

Test Score	Corresponding Percentile
30	99
29	97
28	95
27	91
26	86
25	80
24	71
23	57
22	45
21	30
20	20
19	13
18	8
17	5
16	3
15	2
14 or less	1

Average Score 23
Standard Deviation 3.25
Number of Participants 5,361



Table 27
Self-Confidence

Test Score	Corresponding Percentile
29+	99
28	97
27	95
26	92
25	88
24	82
23	70
22	59
21	46
20	36
19	26
18	19
17	13
16	9
15	6
14	4
13	2
12 or less	1

Average Score 22
Standard Deviation 3.61
Number of Participants 5,361



Table 28
Adjustment

Test Score	Corresponding Percentile
85+	99
83-84	98
81-82	97
80	96
79	95
78	94
77	93
76	91
75	89
74	87
73	84
72	82
71	77
70	73
69	68
68	62
67	57
66	52
65	47
64	42
63	37
62	32
61	28
60	24
59	20
58	17
57	14
56	12
55	10
54	8
53	6
52	5
51	4
49-50	3
47-48	2
46 or less	1

Average Score 66
Standard Deviation 8.18
Number of Participants 5,361



Table 29
C.P.A. Total

Test Score	Corresponding Percentile
561+	99
549-560	98
543-548	97
538-542	96
532-537	95
528-531	94
525-527	93
522-524	92
520-521	91
517-519	90
515-516	89
512-514	88
511	87
509-510	86
507-508	85
505-506	84
503-504	83
501-502	82
499-500	81
497-498	80
496	79
494-495	78
493	77
492	76
491	75
490	74
488-489	73
487	72
486	71
485	70
484	69
483	68
482	67
481	66
480	65
479	64
478	63
477	62
476	61
475	60
474	59
473	58
472	57

Continued on next page



Table 29 (continued)
C.P.A. Total

Test Score	Corresponding Percentile
471	56
470	55
469	54
468	53
467	52
466	51
465	49
464	48
463	47
462	46
461	45
460	44
459	43
458	41
457	40
456	39
454-455	38
453	37
452	36
451	35
450	34
449	33
448	32
447	31
446	30
445	29
444	28
443	27
442	26
440-441	25
439	24
437-438	23
436	22
435	21
434	20
432-433	19
431	18
429-430	17

Continued on next page



Table 29 (continued)
C.P.A. Total

Test Score	Corresponding Percentile
428	16
426-427	15
424-425	14
422-423	13
420-421	12
418-419	11
415-417	10
413-414	9
410-412	8
408-409	7
404-407	6
401-403	5
395-400	4
387-394	3
377-386	2
376 or less	1

Average Score 467
Standard Deviation 40.07
Number of Participants 5,362



Table 30
Deception

Test Score	Corresponding Percentile
5	99
4	86
3	64
2	41
1	21
0	6

Average Score 3
Standard Deviation 1.45
Number of Participants 5,438

Note: The higher the score on the Deception Scale, the likelier it is that the applicant/employee may be trying to "fake" the scale.



You can use the information in Tables 1 through 30 as a guide when evaluating job candidates; however, we strongly recommend that you collect and validate your own test data. The applicant/employee pool in your organization may differ from the study sample presented in this manual. Factors such as geographic location, business category and job responsibilities may have a significant effect on test scores.

One way to develop your own norms and benchmarks is to administer the C.P.A. to your current employees. This will allow you to compare the scores of your top performers with those of your less-productive employees. The information then can serve as a guide during your applicant evaluation process.

In addition, if you can establish and document that, in general, high scorers on specific Scales are also your better-performing employees, this can serve as an initial step in establishing the validity of the C.P.A. within your organization.

If you do administer the C.P.A. to your employees for establishing company-specific norms, make sure your employees understand that the results of your study will be used for norm development only and that their employment status will in no way be affected by their scores.

The EEOC and the Uniform Guidelines on Employee Selection Procedures recommend that for those selection tools causing adverse impact, a job analysis needs to be performed in conjunction with validation studies. This should be done to determine the job-relatedness of each test and other selection tools used throughout the hiring process. It is the employer's responsibility to periodically monitor its employment screening process to ensure that it is fair and valid.



Interviewing with the C.P.A.

In addition to providing an objective measure of seven personality characteristics, the C.P.A. scales also can serve as a useful tool during the interviewing process. Responses to the questions can be addressed during the interview, and the applicant may have the opportunity to explain his/her answers. This approach may reveal some interesting insights into the applicant's unique style or tendencies.

Appropriate Responses

As has been described previously in this manual, the essential functions of the job(s) for which the applicant is being evaluated should be identified through job analysis. The interview process can then be structured to focus on those personality characteristics or skill sets that are essential for effective job performance.

Before you interview the job applicant, carefully review his/her answers to the C.P.A. scale items. Select several questions that were answered appropriately relative to the requirements of the job. Follow up during the interview with reinforcing/positive questions to "break the ice" and establish rapport with the applicant.

Here is an example of a follow-up question to an appropriate response:

"You strongly agreed with the statement that said, 'Most successful people have planned for their success.' (Question #12). I agree with your response. Can you tell me specifically why you feel this way?"

Asking follow-up questions to positive responses helps ease some of the tension inherent in the interviewing process. Positive feedback encourages the applicant to open up and share more potentially critical information.

Inappropriate Responses

Questions answered inappropriately relative to the requirements of the job should also be analyzed. Inappropriate responses should be followed up with questions to clarify the reasons for the response. Clarification is important in helping to understand the applicant's thoughts and potential behaviors as they pertain to the "negative" answer.

Here is an example of a follow-up question to an inappropriate response:

"You agreed with the statement, 'I am not as trusting as most people' (Question #41). Can you elaborate on this? What specifically do you mean? Can you give me some examples?"

Follow-up questions to inappropriate responses can be used to better understand the opinions or thoughts of the applicant that may be contrary to those of the ideal employee. This information is extremely valuable in determining an individual's fit into the organization.



Discussing the Results of the C.P.A.

Your company should develop a procedure so that the applicant can be told what the next step in the hiring process is, regardless of his/her score on the C.P.A. or any other assessment tool. Emphasize that the C.P.A. is only one of the criteria used to determine whether the applicant is a good match for the position. Remind the applicant that many people are applying for the same position, and that each applicant will be considered based on how all of his/her qualifications and experience match the position's requirements.

Some interviewers may be tempted to look for a quick or easy reason to tell the applicant why he/she was not selected. "Blaming" an assessment may seem like a plausible reason, but it is no comfort to the rejected applicant and should not occur. The fact is, the reason to hire or not to hire never should be based solely on any single assessment score. It is the interviewer's responsibility to review all of the information gathered from the various tools used during the hiring process – such as the job application, the interview, reference checks and other assessments – to form the decision on the applicant's appropriateness for the position.

The issue is, and always should be, whether there is an appropriate job fit between position and applicant. Using the C.P.A. is only one part of the information you need to make a decision. The other important part is knowing what else is required and desired in the employee filling the position, and effectively using all the sources available to you to make the best decision. This will ensure an effective selection process that offers a more comprehensive view of the applicant and results in hiring the best employee for your organization.

The employer assumes full responsibility for the proper use of the C.P.A. as mentioned in this manual. This includes establishing its job-relatedness to the position in question. If you have any questions about the proper use of employment assessments, contact HR•Assessments or an employment testing specialist.



Development of the C.P.A.

The development of the C.P.A. was motivated by employers' needs to have a reliable, valid, relatively brief, comprehensive personality assessment instrument that measures personality dimensions important in the business setting. Many personality tests available today were not developed for the business population and therefore may not be appropriate for use within the business environment.

The first step in the development of the C.P.A. was to conduct an extensive review of the personality theory and assessment literature. The two theories or assessment methodologies most often cited and researched were the Five-Factor Model (McCrae & Costa, 1987)¹⁰ and Dr. Robert Hogan's seven-factor structure (Hogan & Hogan, 1995).¹¹

Based on extensive factor analytic research, the Five-Factor Model contends that we think about and describe one another in terms of five broad characteristics (i.e., neuroticism, extroversion, openness, agreeableness and conscientiousness). The definitions of these five characteristics are provided in Table 31.

Table 31
Five-Factor Model Scale Definitions

Factor	Definition
Neuroticism	The extent to which an individual experiences negative effects such as fear, anger, guilt, irrational ideas, is unable to control impulses or deal with stress.
Extroversion	The extent to which an individual is outgoing, sociable, assertive, talkative, and has a tendency toward excitement and stimulation.
Openness	The extent to which an individual has an active imagination, is attentive to inner feelings, is curious, and has independence of judgement.
Agreeableness	The extent to which an individual is sympathetic, altruistic, cooperative, and enjoys helping others.
Conscientious	The extent to which an individual is self-disciplined, purposeful, determined, thoughtful and organized.

¹⁰McCrae, R. R., & Costa, P.T., Jr. (1987). "Validation of the five-factor model of personality across instruments and observers." *Journal of Personality and Social Psychology*, 52, 81-90.

¹¹Hogan, R. & Hogan, J. (1995). *Hogan Personality Inventory Manual*, 2nd Edition. Hogan Assessment Systems, Inc.



Much like the Five-Factor Model, Dr. Hogan's factor analytic research of hundreds of personality items has produced a relatively small number of factors (7). These seven factors theoretically make up the underlying structure of an individual's personality. Table 32 shows Dr. Hogan's seven factors and their respective definitions. These definitions were taken directly from the Hogan Personality Inventory Manual (2nd edition).¹²

Table 32
Hogan's Seven-Factor Model Scale Definitions

Factor	Definition
Adjustment	The extent to which a person appears calm and self-accepting or, conversely, self-critical and tense.
Ambition	The extent to which a person seems socially self-confident, leader-like, competitive and energetic.
Sociability	The extent to which a person seems to need and/or enjoy interacting with others.
Likeability	The extent to which a person is seen as perceptive, tactful and socially sensitive.
Prudence	The extent to which a person seems conscientious, conforming and dependable.
Intellectance	The extent to which a person is perceived as bright, creative, and interested in intellectual matters.
School Success	The extent to which a person seems to enjoy academic activities and to value educational achievement for its own sake.

¹² Hogan, R. & Hogan, J. (1995). *Hogan Personality Inventory Manual*, 2nd Edition. Hogan Assessment Systems, Inc.



Both of these personality structure theories are well founded in scientific research and are both well respected in personality assessment. They are very similar yet have distinct differences. For example, Hogan's structure maintains that "Ambition" is a major personality factor, but the Five-Factor Model considers it a subdimension of "Conscientiousness" and thus, it does not carry so much weight as it does with the Hogan structure. Hogan's model includes a "School Success" factor; the Five-Factor Model does not. And Hogan's "Intellectance" factor is somewhat imbedded in the Five-Factor Model's "Openness" and "Conscientiousness" factors, again receiving less importance.

The development of the C.P.A. was undertaken with three major goals in mind:

The **first goal** was to produce a personality inventory that included personality dimensions identified by both the Five-Factor Model and Hogan's seven-factor model, yet restructure the dimensions so they address the business-related measurement needs of employers. To accomplish this goal, an examination of both the Five-Factor and the Hogan personality structure models was conducted. The following intuitive restructuring and renaming of the dimensions took place to create the structure of the C.P.A.

1. Consistent with Hogan, the Ambition dimension in the C.P.A. was treated as a major dimension rather than a subdimension as it appears in the Five-Factor Model. As the validation results presented in the *Validity and Reliability* section of this manual will show, Ambition is an important dimension for predicting job success, particularly within higher-level jobs (e.g., management), and therefore should be treated with importance.
2. Again consistent with Hogan, Intellect or "Intellectance" (as it appears in Hogan's literature) was viewed as a major personality dimension rather than as a subdimension as described by the Five-Factor Model. Intelligence often has been cited as one of the best predictors of job performance (if not the best).¹³ Given that the emphasis of the Intellect scale is to measure characteristics that should be related to intelligence, it is included as a major factor in the C.P.A.
3. Hogan's definition of Intellectance includes the Five-Factor Model's Openness factor. The Five-Factor Model also imbeds intellect within the Openness and Conscientiousness factors. The C.P.A. clearly separates Intellect from Openness – Intellect referring to tendencies to investigate things, problem solve and generate ideas, Openness referring more to creativity, having wide interests and/or artistic inclinations. These two dimensions, from an employer's standpoint, should be viewed as two distinctly different personality dimensions and therefore are presented as such in the C.P.A.
4. Hogan's School Success factor does not appear in the Five-Factor Model nor was it included in the C.P.A. The definition of the School Success factor appears too similar to that of Intellectance to warrant it being treated as a separate major factor.
5. With the exception that the C.P.A. items were written strictly with the business environment in mind, the remaining differences among the C.P.A., the Hogan Model and the Five-Factor Model in terms of the overall structure are based more on semantics than true differences. For example, the C.P.A.'s Adjustment dimension is equivalent to the Five-Factor Model's Neuroticism factor and Hogan's Adjustment factor; the C.P.A.'s Extroversion dimension is equivalent to the Five-Factor Model's Extroversion and Hogan's Sociability factors; the C.P.A.'s Service Orientation dimension is the same as the Five-Factor Model's Agreeableness factor and Hogan's Likeability factor; and the C.P.A.'s Conscientiousness dimension is similar to the Five-Factor Model's Conscientiousness factor and Hogan's Prudence factor.

¹³ Hunter, J. E., & Hunter, R. F. (1984). "Validity and Utility of Alternative Predictors of Job Performance." *Psychological Bulletin*, 96, 72-96.



Once the seven major C.P.A. dimensions were identified, three subdimensions in each major dimension were determined based again on a review of the personality testing literature (see page 8 for a listing of dimensions and subdimensions). The goal was to include subdimensions that were consistent with how the seven major dimensions were defined in the literature and by how they were defined by the Five-Factor's and Hogan's personality structure models. A total of 168 items were generated (24 for each of the seven major dimensions, 8 for each of the three subdimensions of major dimensions). After a series of item analyses, including internal consistency analysis, 126 items were retained (18 for each of the seven major dimensions, 6 for each of the three subdimensions of major dimensions). Table 33 shows the seven C.P.A. dimensions along with their respective definitions.

Table 33
C.P.A. Dimension Definitions

Dimension	Definition
Service Orientation	The extent to which an individual enjoys helping others, works well with others, is able to compromise, is nonconfrontational, is not argumentative.
Conscientiousness	The extent to which an individual is organized, plans ahead, works hard to get ahead, can be relied upon to get the job done.
Intellect	The extent to which an individual enjoys researching ideas, solving problems, enjoys thinking “outside the box.”
Ambition	The extent to which an individual is motivated by competition, enjoys being in a leadership role, enjoys taking calculated risks.
Extroversion	The extent to which an individual enjoys being around other people, would rather take charge than be reserved, always thinks the best.
Openness	The extent to which an individual is an innovative thinker, is willing to try new things, is artistically inclined.
Adjustment	The extent to which an individual trusts the intentions of others, handles work-related pressures well, believes in self.

The **second goal** during development of the C.P.A. was to produce a reliable inventory that demonstrates both construct and predictor validity. The *Validity and Reliability* section of this manual will show that this goal was in fact achieved. The C.P.A. scales have been found to have high internal consistency, as well as good construct and criterion-related validities.

Finally, the **third goal** in developing the C.P.A. was to produce a comprehensive yet brief personality assessment instrument. This goal also was met. The final item count for the C.P.A. was 131 items (126 personality assessment items and 5 deception scale items). For comparison purposes, the Five-Factor Model's assessment instrument (NEO-PIR) consists of 243 items, and the Hogan Personality Inventory is made up of 206 items. In addition, the C.P.A. can be completed in 30 minutes or less.



Validity and Reliability

Effective applicant/employee evaluation procedures need to be valid and reliable.

Validity can be defined as the extent to which the instrument measures what it is supposed to measure. In other words, validity can be conceptualized as whether there is a relationship between test scores and actual personality characteristics that may impact an individual's behavior including job performance. Reliability refers to how consistent an instrument is at measuring what it is supposed to measure.

The research studies described next have been conducted to demonstrate the validity and reliability of the C.P.A.

The first type of validation design that follows is known as concurrent, criterion-related validation. A professionally conducted, concurrent, criterion-related validation study is an accepted means of test validation, as described by the federal government's Uniform Guidelines on Employee Selection Procedures. Essentially, this approach requires that the test be administered to current employees and, concurrently, data on the performance of these employees be gathered. If the test is valid for predicting job performance, one would expect a statistically significant correlation between individual test scores and performance. In other words, those employees scoring highly on the test would be those who also perform best on the job; those who do poorly on the test would also be those likely to receive poor performance evaluations.



Validity Study #1

The C.P.A. was administered to 39 managers and assistant managers employed in a property management company. The supervisors of these employees were asked to rate each on 10 work-related behaviors. The 10 work-related behaviors and associated rating scales are:

		Very Low Level	Average Level	Very High Level				
1. Service Orientation	Enjoys helping customers and/or coworkers, has a helping disposition, is cooperative and gets along well with people.	1	2	3	4	5	6	7
2. Conscientiousness	Can be counted on to get the job done. Requires little follow-up when assigned to a project or task. Is thoughtful and consistent. Is organized and hard-working.	1	2	3	4	5	6	7
3. Attendance and Punctuality	Has a good attendance and punctuality record.	1	2	3	4	5	6	7
4. Stress Management	Ability to stay calm under work-related pressure situations. Ability to handle multiple tasks effectively and efficiently.	1	2	3	4	5	6	7
5. Self-Confidence	Believes in self and in his/her actions. Not afraid to make decisions.	1	2	3	4	5	6	7
6. People Orientation	Enjoys working with people. Is outgoing and personable. Can be described as extroverted.	1	2	3	4	5	6	7
7. Creativity	Thoughts are original and innovative. Able to think "outside the box." A unique thinker.	1	2	3	4	5	6	7
8. Intellect	Enjoys investigating, and solving problems. Is intellectually competent. Is an idea generator.	1	2	3	4	5	6	7
9. Ambition	Is a competitive risk taker. Enjoys taking the lead on projects. Strives for success in all aspects of work.	1	2	3	4	5	6	7
10. Achievement of Sales Goals	Consistently meets or exceeds sales goals.	1	2	3	4	5	6	7



In addition to those 10 performance criteria, an overall performance rating was calculated by summing up the ratings for these 10 criteria.

The study participants' Scale scores then were compared statistically to the supervisors' performance ratings using correlation analysis. All correlations above .20 are presented in Table 34.

Table 34
Correlation Between C.P.A. Scale Scores and Work-Related Behaviors for Management Personnel

C.P.A. Scale	Work-Related Behavior	Validity Coefficient	Significance Level	N
Service Orientation	Service Orientation	.32	p<.06	38
	People Orientation	.24	p<.16	38
Conscientiousness	Self-Confidence	.28	p<.09	37
	People Orientation	.35	p<.04	37
	Creativity	.33	p<.05	37
	Intellect	.33	p<.05	37
	Ambition	.37	p<.03	37
	Overall Performance	.32	p<.06	37
Adjustment	Attendance	.27	p<.13	35
	Stress Management	.24	p<.18	35
	People Orientation	.21	p<.23	35
	Achievement of Sales Goals	.27	p<.13	35
	Overall Performance	.25	p<.15	35
Extroversion	Service Orientation	.31	p<.07	36
	Stress Management	.32	p<.06	36
	Self-Confidence	.51	p<.01	36
	People Orientation	.55	p<.01	36
	Creativity	.52	p<.01	36
	Intellect	.68	p<.01	36
	Ambition	.64	p<.01	36
	Achievement of Sales Goals	.38	p<.03	36
	Overall Performance	.62	p<.01	36

Note: N equals the number of participants in the analysis.

Continued on next page



Table 34 (continued)
Correlation Between C.P.A. Scale Scores and
Work-Related Behaviors for Management Personnel

C.P.A. Scale	Work-Related Behavior	Validity Coefficient	Significance Level	N
Openness	Self-Confidence	.24	p<.15	38
	People Orientation	.25	p<.13	38
	Creativity	.36	p<.03	38
	Intellect	.42	p<.01	38
	Ambition	.40	p<.02	38
	Achievement of Sales Goals	.41	p<.02	38
	Overall Performance	.37	p<.03	38
Intellect	Self-Confidence	.28	p<.09	36
	Creativity	.34	p<.05	36
	Intellect	.42	p<.01	36
	Ambition	.36	p<.03	36
	Achievement of Sales Goals	.29	p<.08	36
	Overall Performance	.33	p<.05	36
Ambition	Stress Management	.23	p<.18	36
	Self-Confidence	.39	p<.03	36
	People	.37	p<.03	36
	Creativity	.41	p<.02	36
	Intellect	.50	p<.01	36
	Ambition	.49	p<.01	36
	Overall Job Performance	.46	p<.01	36

Note: N equals the number of participants in the analysis.

A review of Table 34 reveals that the personality dimensions measured by the C.P.A. were highly correlated with the job performance of the managers and assistant managers in the study sample. These correlations indicated that, in general, those individuals who scored highly on the C.P.A. scales demonstrated numerous work-related behaviors important for job success.

Most notably is the relatively high correlation found between the Extroversion Scale and the various job performance ratings, particularly overall job performance. The strong relationship between extroversion and management performance found here is consistent with the findings of Costa, McCrae, & Holland (1994).¹⁴ These authors found that measures of extroversion are highly correlated with interest in managerial occupations.

It is also important to note that, of the remaining scales, those measuring personality characteristics most often associated with higher-level occupations (e.g., openness, intellect, ambition) were the ones with the higher validity coefficients.

¹⁴Costa, P. T., Jr., McCrae, R. R., & Holland, J. L. (1984). "Personality and vocational interests in an adult sample." *Journal of Applied Psychology*, 69, 390-400.



Validity Study #2

In another concurrent, criterion-related validation study, the C.P.A. was administered to 34 maintenance workers employed in a property management company and 30 plant operators employed in an electronics factory. Both of these categories required similar duties and responsibilities and therefore were combined for this analysis. The supervisors of these employees were asked to rate each on the same work-related behaviors rated in Validity Study #1.

Validity coefficients between scale scores and the supervisory ratings then were calculated. All coefficients above .20 are presented in Table 35.

Table 35
Correlation Between C.P.A. Scale Scores and Work-Related Behaviors for Maintenance Personnel

C.P.A. Scale	Work-Related Behavior	Validity Coefficient	Significance Level	N
Service Orientation	Service Orientation	.27	p<.04	62
	Conscientiousness	.25	p<.05	62
	Stress Management	.21	p<.11	62
	People Orientation	.28	p<.03	62
	Overall Performance	.21	p<.11	60
Conscientiousness	Service Orientation	.24	p<.07	59
	Stress Management	.28	p<.04	59
	People Orientation	.27	p<.04	59
	Overall Performance	.22	p<.11	58
Adjustment	Service Orientation	.36	p<.01	64
	Conscientiousness	.34	p<.01	64
	Stress Management	.40	p<.01	64
	People Orientation	.29	p<.02	64
	Creativity	.28	p<.03	64
	Intellect	.27	p<.04	64
	Ambition	.30	p<.02	64
	Overall Performance	.40	p<.01	63

Note: N equals the number of participants in the analysis.

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Table 35 (continued)
Correlation Between C.P.A. Scale Scores and
Work-Related Behaviors for Maintenance Personnel

C.P.A. Scale	Work-Related Behavior	Validity Coefficient	Significance Level	N
Extroversion	Service Orientation	.24	p<.07	61
	Stress Management	.37	p<.01	61
	People Orientation	.27	p<.02	61
	Creativity	.31	p<.10	61
	Intellect	.22	p<.03	61
	Ambition	.28	p<.22	61
	Overall Performance	.34	p<.34	59
Openness	Ambition	.23	p<.07	63
Intellect	Stress Management	.22	p<.10	62
	Self-Confidence	.27	p<.04	62
	Intellect	.20	p<.11	62
	Ambition	.23	p<.08	62
	Overall Performance	.33	p<.05	36
Ambition	Stress Management	.26	p<.05	60

Note: N equals the number of participants in the analysis.

Table 35 reveals that, though all of the C.P.A. personality scales were positively correlated with the work behaviors of maintenance personnel, the Adjustment scale had the highest correlations, followed by the Extroversion scale. As suspected, the Openness, Intellect and Ambition scale scores were more predictive of managers' performance (see Validity Study #1) than that of the performance of maintenance workers. These personality characteristics are more often associated with higher-level positions (e.g., managers) than they are lower-level, labor-intensive jobs.



Validity Study #3

In yet another concurrent, criterion-related validation study, the C.P.A. was administered to 15 cashiers in a retail establishment and 8 customer service representatives of a property management company. Given the similarities in these two job categories in terms of personality requirements (e.g., both jobs require interaction with customers, multitasking, and similar stress management and problem solving), both jobs were combined for validation purposes. Again, the supervisors of the study participants were asked to rate each employee in terms of the 10 work-related behaviors rated in Validity Studies #1 and #2.

Validity coefficients were computed between the C.P.A. scale scores and the supervisory ratings. All coefficients above .20 are presented in Table 36.

Table 36
Correlation Between C.P.A. Scale Scores and Work-Related Behaviors for Customer Service Personnel

C.P.A. Scale	Work-Related Behavior	Validity Coefficient	Significance Level	N
Service Orientation	Service Orientation	.60	p<.04	22
	Conscientiousness	.42	p<.05	22
	Attendance	.38	p<.05	22
	Stress Management	.34	p<.11	22
	Self-Confidence	.20	p<.05	22
	People Orientation	.58	p<.03	22
	Creativity	.54	p<.05	22
	Intellect	.44	p<.05	22
	Ambition	.26	p<.05	22
	Overall Performance	.60	p<.11	21
Conscientiousness	Service Orientation	.47	p<.03	21
	Conscientiousness	.58	p<.01	22
	Attendance	.61	p<.01	22
	People Orientation	.47	p<.03	22
	Creativity	.62	p<.01	22
	Intellect	.63	p<.01	22
	Ambition	.43	p<.05	22
	Overall Performance	.64	p<.01	21
Adjustment	Service Orientation	.52	p<.03	18
	Conscientiousness	.40	p<.10	19
	Attendance	.23	p<.35	19
	Stress Management	.41	p<.08	19
	Self-Confidence	.28	p<.25	19
	People Orientation	.63	p<.01	19
	Creativity	.65	p<.01	19
	Intellect	.54	p<.02	19
	Ambition	.31	p<.21	19
	Overall Performance	.55	p<.02	18

Note: N equals the number of participants in the analysis.

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Table 36 (continued)
Correlation Between C.P.A. Scale Scores and
Work-Related Behaviors for Customer Service Personnel

C.P.A. Scale	Work-Related Behavior	Validity Coefficient	Significance Level	N
Extroversion	Service Orientation	.59	p<.01	21
	Conscientiousness	.33	p<.15	21
	Attendance	.33	p<.16	21
	Stress Management	.37	p<.10	21
	People Orientation	.62	p<.01	21
	Creativity	.75	p<.01	21
	Intellect	.66	p<.01	21
	Ambition	.38	p<.10	21
	Overall Performance	.61	p<.61	21
Openness	Service Orientation	.55	p<.01	21
	Conscientiousness	.26	p<.25	21
	Attendance	.38	p<.10	21
	Stress Management	.28	p<.21	21
	People Orientation	.62	p<.01	21
	Creativity	.69	p<.01	21
	Intellect	.61	p<.01	21
	Ambition	.30	p<.19	21
	Overall Performance	.55	p<.55	21
Intellect	Service Orientation	.55	p<.01	22
	Conscientiousness	.26	p<.24	23
	Stress Management	.53	p<.01	23
	Self-Confidence	.50	p<.02	23
	People Orientation	.58	p<.01	23
	Creativity	.56	p<.01	23
	Intellect	.49	p<.02	23
	Ambition	.22	p<.32	23
	Overall Performance	.68	p<.01	22
Ambition	Service Orientation	.26	p<.27	62
	Conscientiousness	.37	p<.10	62
	Attendance	.35	p<.12	62
	Stress Management	.33	p<.14	62
	Self-Confidence	.38	p<.11	62
	People Orientation	.32	p<.16	62
	Creativity	.45	p<.05	62
	Intellect	.36	p<.12	62
	Ambition	.31	p<.18	62
	Overall Performance	.40	p<.09	60

Note: N equals the number of participants in the analysis.



A review of Table 36 again shows that all of the C.P.A. personality scales are positively related with work behaviors. Although, in general, the correlations are extremely high, it is important to recognize that the data presented here are based on only 22 employees. It is possible that these correlations would drop a bit in magnitude if more data were added to the study sample. Nonetheless, the C.P.A. was extremely predictive of performance for the employees who participated in this study.

Validity Study #4

To see the relationship between college GPA (grade point average) and the personality scale scores of the C.P.A., 90 college students (19 males, 71 females) enrolled in various psychology courses completed the C.P.A. In addition, these students provided their collegiate GPA. Correlation analysis then was performed to determine the extent to which the C.P.A. scales were predictive of GPA. Only the Openness scale was related to GPA. Table 37 shows the validity coefficients obtained for the Openness scale by gender, as well as both genders combined.

Table 37
Correlation Between the Openness Scale and College GPA

Gender	Validity Coefficient	Significance Level	N
Males	.38	.13	19
Females	.32	.01	71
Both Combined	.30	.01	90

Note: N equals the number of participants in the analysis.

Correlation analysis, looking at the relationship between C.P.A. scales and GPA, revealed that the Openness scale was positively related to GPA. That is, the higher a student scored on the Openness scale, the higher his/her GPA was likely to be. These findings are consistent with what the scale measures. The Openness scale measures the extent to which an individual is open to new experiences, therefore is eager to learn and take on new challenges, much as is necessary to succeed in a school environment. The other C.P.A. scales were not correlated to GPA.



Validity Study #5

In addition to the criterion-related validity studies discussed above, a construct validation study was conducted. Construct validation attempts to answer two questions: (1) What is the psychological construct the test is attempting to measure? and (2) How good is the test at measuring that construct?

During the administration of the C.P.A. in Validity Study #4, study participants also were asked to complete NEO-PIR (NEO). The NEO is a respected personality assessment tool developed for and used primarily in the clinical environment. The NEO measures the five personality dimensions that make up the Five-Factor Model discussed in the *Development of the C.P.A.* section of this manual. Correlation analysis then was performed comparing the seven personality dimensions assessed by the C.P.A. to their corresponding dimensions assessed by the NEO. Table 38 presents the results of these analyses.

Table 38
Correlation Between the C.P.A. Scale and the NEO Scale

C.P.A. Scale	NEO Scale	Validity Coefficient	Significance Level	N
Service Orientation	Agreeableness	.69	p<.001	86
Conscientiousness	Conscientiousness	.56	p<.001	86
Adjustment	Neuroticism	-.66*	p<.001	87
Extroversion	Extroversion	.63	p<.001	88
Openness	Openness	.63	p<.001	90
Intellect	Ideas	.74	p<.001	90
Ambition	Assertiveness	.64	p<.001	92

Note: N equals the number of participants in the analysis.

*The negative correlation here indicates that the higher the score on the C.P.A. Adjustment Scale, the lower the score on the NEO PI-R Neuroticism Scale.

A review of Table 38 shows that the five C.P.A. scales intended to measure similar constructs as the five NEO scales are in fact highly correlated with their respective counterpart. In addition, the two C.P.A. scales not treated as “major” personality constructs by the Five-Factor Model (i.e., Ambition and Intellect) were found to be highly correlated with two NEO subscales (Assertiveness and Ideas, respectively). The NEO model defines the Assertiveness dimension as someone who is aggressive, not shy, confident, enthusiastic and forceful. The NEO defines its Ideas dimension as someone who is inventive, original, insightful and imaginative.

Although the correlations presented here are relatively high and statistically significant ($p<.001$), they are not in the .80 to .90 range that might be expected when comparing equivalent forms. One reason for this might be that the C.P.A. was developed with the business setting in mind. It includes many items that were written in a business context. The NEO’s items are not specific to the work environment. Changing the context in which test questions are written tends to affect responses and therefore could be responsible for some of the differences observed between the C.P.A. and the NEO scale scores. Regardless of these differences, the statistically significant correlations between the two instruments suggest they are measuring similar constructs.



Reliability

In addition to validity research, internal consistency analyses have been conducted to determine the reliability of the seven personality scales that make up the C.P.A.; that is, to what degree do the items in the scale measure the same thing? Reliability coefficients for each scale are presented in Table 39. These coefficients were calculated using a sample that consisted of 100 collegiate students and 165 employed personnel.

Table 39
Reliability Coefficients
for the C.P.A. Scales

C.P.A. Scale	Reliability Coefficients
Service Orientation	.80
Conscientiousness	.81
Adjustment	.85
Extroversion	.84
Openness	.87
Intellect	.82
Ambition	.84

The magnitude of these reliability coefficients suggests that the C.P.A. scales are highly reliable and consistent in measuring the constructs they portray to measure.



Adverse Impact

To determine whether the C.P.A. could have an adverse effect on members of a protected class (e.g., minorities), the average scores for each of the seven scales for 117 white and 31 African American study participants was statistically compared using t-tests.

The results of these comparisons revealed that there were three scales with mean score differences that were statistically significant or approached significance. However, there were no significant differences between the overall C.P.A. score means for the two groups. The scale means by ethnic group with their respective significance levels are presented in Table 40.

Table 40
C.P.A. Scale Means by Ethnic Group

C.P.A. Scale	White	African American	Sig. Level
Service Orientation	85	85	p<.95
Conscientiousness	62	58	p<.02
Intellect	81	79	p<.31
Ambition	81	80	p<.51
Extroverted	79	78	p<.56
Openness	82	78	p<.05
Adjustment	78	74	p<.03
Overall C.P.A. Score	547	532	p<.12

The relatively small C.P.A. mean differences between white and African American study participants suggest that, if the C.P.A. were to be used in conjunction with the applicant's or employee's job interview, reference checks, work history and other job-relevant sources of information, it is not likely that adverse impact would occur.

Even though these results suggest that the use of the C.P.A. would not likely have an adverse effect on the hiring rates of minorities versus nonminorities, we always recommend that you periodically monitor your selection process to ensure that it continues to be fair and valid.

The results obtained in the criterion validity studies #1-4, the construct validity study (Validity Study #5), and the reliability and adverse impact analyses offer strong evidence that the C.P.A. is a valid, reliable and fair predictor of seven work-related personality dimensions.

Based on all of the validity, reliability and adverse-impact research presented in this manual, it appears that, in addition to providing a sound, reliable and job-related basis for making employment decisions, the C.P.A. also can enhance equal employment opportunities by increasing the objectivity, standardization and job-relatedness of the selection process.

While HR•Assessments were designed to help predict various aspects of human behavior, score results are presented in terms of probabilities. False Positives and False Negatives are expected. EDI and the test developer are not liable for test taker, applicant or employee behaviors.

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