



**HARRISON
ASSESSMENTS®**

**Harrison Assessments
Technical Manual
Section I**

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Optimize People!



Table of Contents

INTRODUCTION.....	4
Overview of the Harrison Assessment.....	4
Background to the Harrison Assessment.....	4
<i>Enjoyment-Performance Theory.....</i>	<i>5</i>
<i>Paradox Theory.....</i>	<i>6</i>
<i>Paradox Theory and the Harrison Assessment.....</i>	<i>10</i>
Scales.....	12
<i>Job Success Formula.....</i>	<i>12</i>
<i>Consistency Scale.....</i>	<i>15</i>
HARRISON ASSESSMENT REPORTS.....	16
Appropriate Use.....	16
<i>Selection.....</i>	<i>16</i>
<i>Development.....</i>	<i>17</i>
<i>Succession Planning.....</i>	<i>17</i>
<i>Team Building.....</i>	<i>17</i>
Administration of the Harrison Assessment.....	18
<i>Format.....</i>	<i>18</i>
<i>Time.....</i>	<i>18</i>
<i>Scoring.....</i>	<i>18</i>
<i>Reports.....</i>	<i>20</i>
EMPIRICAL EVALUATION OF THE HARRISON ASSESSMENT.....	20
<i>Summary of Empirical Evaluation.....</i>	<i>20</i>
Reliability.....	20
<i>Test-Retest Reliability.....</i>	<i>20</i>
<i>Technical Consistency.....</i>	<i>21</i>
Validity.....	22
<i>Content Validity.....</i>	<i>22</i>
<i>Construct Validity.....</i>	<i>23</i>
<i>Criterion-Related Validity.....</i>	<i>30</i>
<i>Face Validity.....</i>	<i>33</i>
Standardization and International Norms.....	34
<i>Translation Procedure.....</i>	<i>34</i>
<i>Normative Reference Groups.....</i>	<i>34</i>
<i>Group Comparisons.....</i>	<i>34</i>
Adverse Impact.....	36
<i>80% Rule.....</i>	<i>36</i>

APPENDICES..... 40

APPENDIX A 41

APPENDIX B 47

APPENDIX C 49

APPENDIX D 52

APPENDIX E 55

APPENDIX F..... 58

APPENDIX G 61

REFERENCES..... 65

Deployed by start-ups, the INC5000 and leading organizations across the globe to build successful organizations by optimizing their people decisions and productivity



INTRODUCTION

Overview of the Harrison Assessment

Harrison Assessments' Job Suitability Assessment is a job focused behavioral assessment. It measures various traits which are used to formulate a specific set of traits called Job Success Formulas (JSFs) that relate to success for specific jobs. The JSFs are based on Harrison Assessment research that focuses on the relationship between performance and a select group of Harrison Assessment traits. The JSFs are a formula of traits that are calculated to arrive at a "suitability score" for each respective JSF. If an applicant has a suitability score of 60 or greater, he/she is considered to be a possible fit for the position depending upon other factors such as experience, education, skills, training, aptitude, and/or performance at the interview. If the suitability score is 75 or greater, the suitability aspect is considered to be a probable fit.

The Harrison Assessment Suitability Questionnaire measures 175 suitability traits, 30-40 of which will apply to any one job function. The Harrison Assessment has JSFs that relate to more than 650 job titles, each of which offer up to four levels of experience and three levels of management. They are based on 20 years of performance research and thus accurately reflect the behavioral requirements and scoring. The suitability formulas can be easily customized according to the specific behavioral requirements of the job.

This manual provides the following information about the Harrison Assessment:

- Background and scale information
- Administration information
- Reliability and validity information
- Normative information
- Adverse impact data

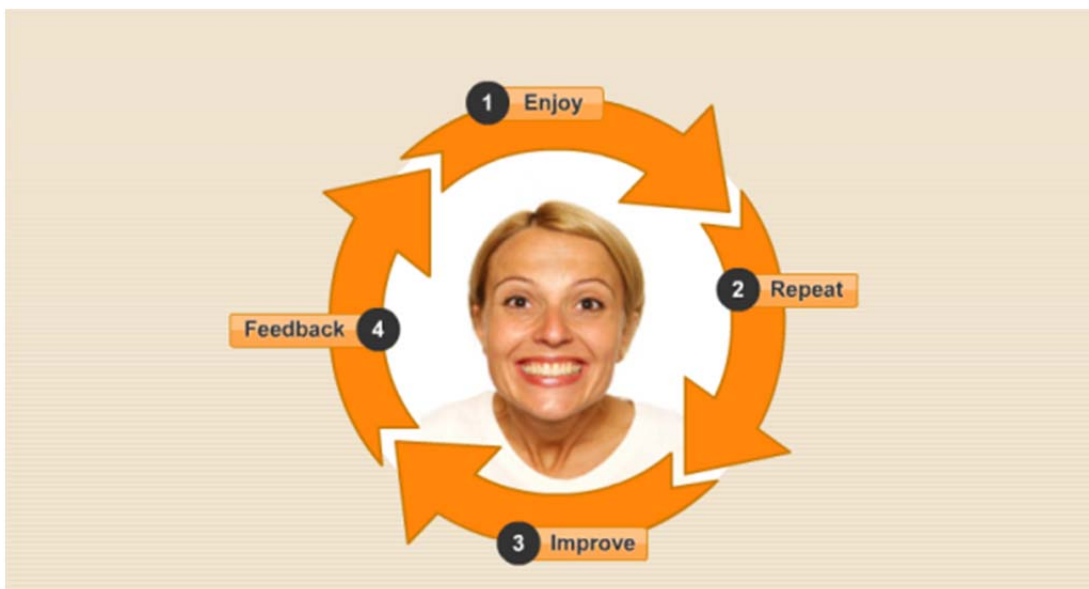
Background to the Harrison Assessment

Two underlying theories are integrated in the Harrison Assessment methodology. The first is called the Enjoyment-Performance Theory and is based upon Behavioral Theory. The second is called Paradox Theory and is an extension of the psychological opposites theories explained by Carl Jung.

Enjoyment-Performance Theory

Enjoyment-Performance Theory states that an individual will perform more effectively, be more engaged, and be more likely to be retained in a job if that individual (a) enjoys the tasks required by that job, (b) has interests that relate to the position, (c) has work environment preferences that correspond with the environment of the workplace, and (d) has employment expectations that can be met by the employer. In other words, assuming the person has the education and training necessary for a job, the enjoyment of all the various aspects of that job is a significant indication of a higher level of performance. Our research indicates that the enjoyment of these various aspects of a job is highly correlated with good performance.

Behavioral Theory explains that people tend to do the things that bring them enjoyment and avoid things that bring them displeasure. The enjoyment of a particular type of activity results in the tendency to engage more often in that type of activity. The Enjoyment-Performance Theory extends Behavioral Theory. The Enjoyment-Performance Theory asserts that when a person enjoys an activity, that person is more likely to engage in that activity. Further, the individual will tend to experience improved performance in the activity. Improved performance, in turn, reinforces enjoyment of the activity. Conversely, if a person dislikes a particular activity, that person will tend to engage less often in the activity. When a person engages less often in an activity, that person will be less likely to improve in the activity. Therefore, that person's dislike for the activity will tend to be reinforced. For example, if a person enjoys tasks that require a great deal of precision or exactness, then that person will tend to perform those tasks more often, thereby developing his/her patience and attention to detail. The increased skills related to *precision tasks* will tend to result in increased enjoyment of those types of tasks. Conversely, if a person dislikes tasks requiring a great deal of precision or exactness, then that person will tend to perform those tasks less often. As a result, the person will probably not develop patience and attention to detail. Thus, performance and enjoyment are linked: the level of enjoyment of a particular activity generates the quality of performance related to that activity and vice versa.



Paradox Theory

Paradox Theory is an application to psychology of Yin-Yang Theory, which Carl Jung extensively studied when developing his own theories. The ancient Chinese body of knowledge known as *Yin-Yang Theory* was one of the first systems to provide a framework of conceptual opposites. The Harrison Paradox Theory extends that principle to include complementary and paradoxical forces and applies it to specific traits. Harrison Paradox Theory includes a series of principles that can be applied to the individual psyche as well as to organizational dynamics.

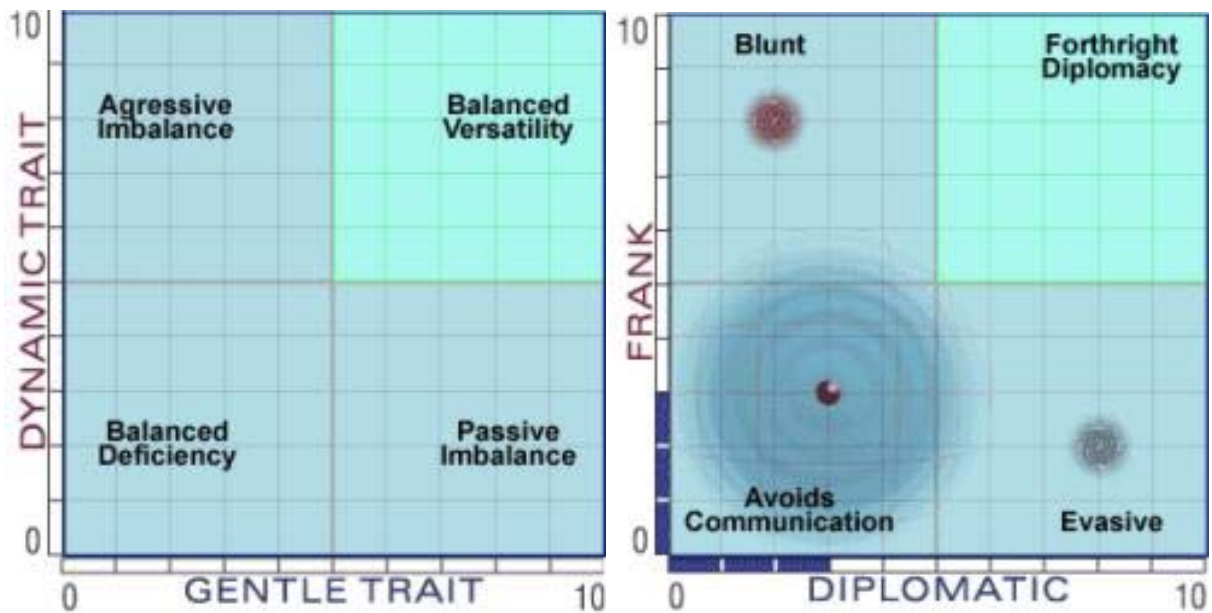
The term *paradox* is used because complementary traits often appear to be contradictory but, in fact, they are not. An example of a paradox used in the Harrison Assessment system is diplomacy and frankness. While these traits may initially appear to be in opposition to each other, they are both favorable (and arguably necessary) traits for success.

A person who embraces only one side of the paradox will consider the traits to be contradictory or opposite. For example, a person who tends to be frank but not diplomatic will consider frankness to be a virtue and diplomacy to be its opposite vice. In that case, frankness, which would normally be a positive trait, turns to bluntness which is typically counter-productive.

However, a person who is strong in both traits has psychologically resolved the paradox and will consider the pair of traits to be mutually compatible. Such a person will exhibit a greater range of behavior, resulting in a greater effectiveness and a greater sense of personal fulfillment. Therefore, paradoxical traits can be either constructive or destructive depending on the level of the complementary trait. This example is discussed in further detail below.

According to Paradox Theory, life involves managing such paradoxes. One must often demonstrate diplomacy to maintain relationships and progress agendas. At the same time, one must also be frank and truthful in order to achieve goals. As in the example provided, each paradox measured in the Harrison Assessment system is a relationship between two categories of traits: *gentle* (e.g., diplomacy) and *dynamic* (e.g., frankness). For each set of complementary (paradoxical) traits, if a person's range of behavior is able to extend to both the *gentle* and *dynamic* aspects of the paradox, then that person will have an exceptional capability and means of fulfillment for related aspects of his/her life. This is called *balanced versatility*. If the range of behavior extends only to the *dynamic* aspect of a paradox, it is called an *aggressive imbalance* and indicates a tendency to be overly aggressive. If the range of behavior extends only to the *gentle* aspect of a paradox, it is called a *passive imbalance* and indicates a tendency to be overly passive. In any case, an imbalanced paradox will indicate some counter-productive tendencies depending on the degree of imbalance. When imbalanced, the person may experience fewer fulfillments because these counter-productive tendencies inhibit progress and effectiveness. If the person's range of behavior extends to neither aspect of a paradox, it is called *balanced deficiency*. In that case, the person will also have some counter-productive tendencies and experience lack of fulfillment.

For example, *diplomatic* and *frank* is a paradoxical pair of traits included in the Harrison Assessment system. *Frank* is the *dynamic* aspect and *diplomatic* is the *gentle* aspect of communication. A person who is able to be both *frank* and *diplomatic* at the same time will be an effective communicator in resolving everyday work relationship issues (balanced versatility). On the other hand, a person who tends to be very *frank* but is lacking in *diplomacy* will be quite blunt (aggressive imbalance). A person who is very diplomatic and lacks frankness will tend to be evasive (passive imbalance). A person who lacks both diplomacy and frankness will tend to avoid communication altogether (balanced deficiency).



The Harrison Paradox model provides insight into the manner in which individuals manage each paradox. A wealth of understanding is gained about an individual's behavioral patterns that extend beyond the traditional bipolar system of measurement. Each of the tendencies mentioned above are explained in greater detail in the following sections.

Balanced Versatility

Each of the *gentle* traits has a synergistic effect when combined with a complementary *dynamic* trait. The two together create something more than just the sum of two unconnected qualities. Where behavior extends to both the complementary traits, the individual can be said to have an exceptional capability in that area. As such, the degree to which a person's personality is versatile corresponds to the degree to which the person is capable of responding appropriately to a variety of situations. A person may have traits that enable him/her to respond effectively to some situations; however, when the situation changes and complementary traits are needed, the person may or may not be able to respond effectively.

People are faced with a variety of decisions in day-to-day situations. People are often required to respond to situations decisively, making quick decisions with confidence. At other times, people may be required to make an extremely important decision requiring careful analysis, so they must use a much slower tempo and a careful attitude. Disaster is often the result if people apply a quick and decisive approach to such important decisions. Conversely, overall productivity would be greatly reduced if a person applies a careful and analytical mode to each everyday decision. Someone who has achieved balanced versatility is able to identify the requirement for the situation and change his/her behavior accordingly. Such a person would probably instinctively differentiate. This balanced versatility is the key to creative human potential. Determining an individual's greatest capability and appropriate organizational role can be achieved by examining the particular areas of balanced versatility.



For example, an individual who has strong traits in being both *frank* and *diplomatic* on the Harrison Assessment has an exceptional ability to communicate in the context of working through difficult issues in relationships. Such a person will tend to be frank when it is appropriate but will also be able to be diplomatic at the same time. That person will work effectively with others and will be able to work out problems when they arise. In Figure 1, the qualities are balanced and therefore the entire scale remains above the dotted line, which delineates productive traits from counter-productive traits.

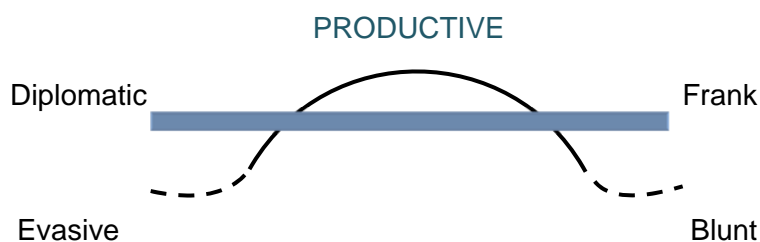


Figure 1: Balanced Versatility

Imbalance

Imbalance refers to when behavior extends only to one trait of a complementary pair. Imbalances can be observed by comparing the strengths of all the *dynamic* traits to the strengths of all the *gentle* traits. An aggressive imbalance would indicate that the *dynamic* traits are stronger overall than the *gentle* traits. A passive imbalance would indicate that the *gentle* traits are much stronger overall than the *dynamic* traits. When either a *gentle* or *dynamic* quality is much greater than its complementary partner, the strength of that positive quality ceases to be an asset and becomes counter-productive.

Aggressive imbalances in the interpersonal areas indicate a *roughness* in the personality. Passive imbalances in the interpersonal areas indicate a degree of suppression or lack of personal power. If extreme, passive imbalances can indicate a tendency toward passive-aggression. For example, a person who scores high on *frank* and low on *diplomatic* will be blunt. Hence what was potentially a useful attribute such as being very straightforward or forthright becomes a destructive attribute that interferes with productivity and harmonious co-existence. Human resource professionals and managers are able to determine an employee's degree of a negative quality by measuring the degree of difference between the two potentially positive traits when analyzing complementary traits in this manner.

In Figure 2, *frank* significantly outweighs *diplomatic* and consequently the scale dips into the counter-productive region on the blunt side.

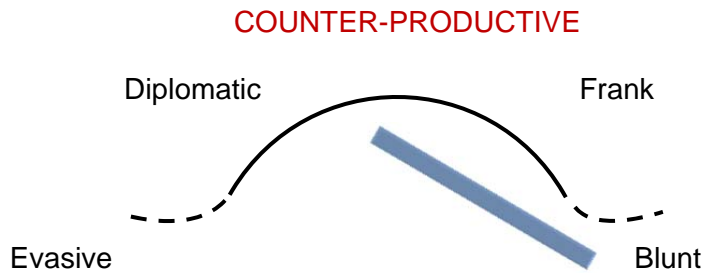


Figure 2: Aggressive Imbalance

Balanced Deficiency

A *balanced deficiency* refers to when both complementary items are weak. As shown in Figure 3, balanced deficiency indicates a lack of capability to respond effectively. For example, a person who lacks self-acceptance and lacks self-improvement will be self-critical, defensive, and afraid to deal with real issues that may need improvement.

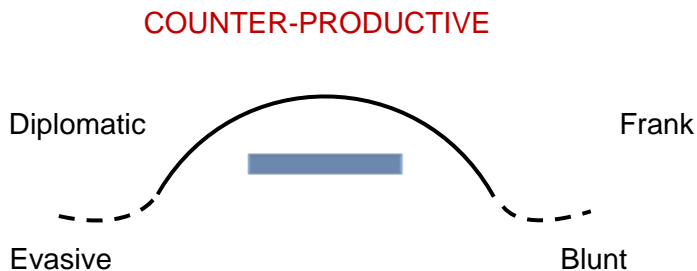


Figure 3: Balanced Deficiency

Moderators and Exacerbators

It is important to look at a whole series of traits to fully understand an individual. If an individual is blunt, human resource professionals and managers must then look for other traits (especially *gentle* traits) that may moderate that tendency. They must also look for other aggressive imbalances that may exacerbate that tendency. For example, if an individual is warm and empathetic, that person will maintain a greater affinity with others, even if they also tend to be blunt. That is, others might be offended by their bluntness less frequently. In this case, *warmth/empathy* serves to moderate *bluntness*. Conversely, difficulties experienced in relationships with others will increase if an individual is dogmatic, over-dominating, defensive, harsh, or authoritarian. In such cases, these other traits serve to exacerbate bluntness, making it more counter-productive.

Paradox Theory and the Harrison Assessment

Paradox Theory provides a means of understanding complex personality traits without the use of typecasting. Insights into the uniqueness of an individual overreach assumptions as a result of mapping behavioral patterns as mentioned above. The relative strength of various complementary traits are identified and viewed as an entire system rather than as independently operating factors. Harrison Assessment results indicate an overall pattern of preferences and behaviors that provides insight into the individual. The paradox principles are applied to the pattern formation to provide a clear and concise understanding of these patterns.

The 12 pairs of complementary (paradoxical) traits included in the Harrison Assessment are defined in the table below:

Paradox	Complementary Traits
Opinions	<p>Certain The tendency to feel confident in one's opinions</p> <p>Open/Reflective The tendency to reflect on many different viewpoints</p>
Decisions	<p>Analytical The tendency to logically examine facts and situations (not necessarily analytical ability)</p> <p>Intuitive The tendency to use hunches to help make decisions (not necessarily intuitive capabilities)</p>
Strategic Acumen	<p>Optimistic The tendency to believe the future will be positive</p> <p>Analyzes Pitfalls The tendency to scrutinize potential difficulties related to a plan or strategy</p>
Delegation	<p>Authoritative The desire for decision-making authority and the willingness to accept decision-making responsibility</p> <p>Collaborative The tendency to collaborate with others when making decisions</p>
Innovation	<p>Persistent The tendency to be tenacious despite encountering significant obstacles</p> <p>Experimenting The tendency to try new things and new ways of doing things</p>

Communication	<p>Frank The tendency to be straightforward, direct, to the point, and forthright</p> <p>Diplomatic The tendency to state things in a tactful manner</p>
Power	<p>Assertive The tendency to put forward personal wants and needs</p> <p>Helpful The tendency to respond to others' needs and assist others to achieve their goals</p>
Motivation	<p>Self-Motivated The drive to achieve including taking initiative, wanting challenge, and being enthusiastic about goals</p> <p>Stress Management The tendency to be relaxed and manage stress well when it occurs</p>
Self	<p>Self-Acceptance The tendency to like oneself ("I'm O.K. the way I am")</p> <p>Self-Improvement The tendency to attempt to develop or better oneself</p>
Driving	<p>Enforcing The tendency to insist upon necessary rules being followed</p> <p>Warmth/Empathy The tendency to express positive feelings and affinity toward others</p>
Organization	<p>Organized The tendency to place and maintain order in an environment or situation</p> <p>Flexible The tendency to easily adapt to change</p>
Strategic	<p>Risking The tendency to feel comfortable with business ventures that involve uncertainty</p> <p>Analyzes Pitfalls The tendency to scrutinize potential difficulties related to a plan or strategy</p>

Each trait is measured independently (not on a bipolar scale) and is conceptualized based on its relative position to various other characteristics evaluated by the Harrison Suitability Profile. Traits may be either productive or counter-productive based upon the following principles:

- If the individual has strong characteristics (high scores) on both items of a pair of complementary traits, it will indicate a particularly strong ability with regard to that dimension.
- If the individual has weak characteristics (low scores) on both items of a pair of complementary traits, it will indicate a significant weakness with regard to that dimension.
- If one item is significantly stronger than its complementary item of a (paradox) pair, the strength of that characteristic will become a weakness. We then speak of an “aggressive imbalance” or a “passive imbalance.” For example, a person who scores high on Frank and low on Diplomatic will be blunt (aggressive imbalance). Having diplomacy without frankness (passive imbalance) leads one to be evasive.

If these above-mentioned traits were used in a traditional bipolar method or measurement, an erroneously *either-or* relationship between frankness and diplomacy would be indicated. A bipolar approach fails to consider the option that the person could demonstrate a preference for neither characteristic, both characteristics, or independently varying degrees of each. A score toward the middle of the bipolar scale would not distinguish between a good communicator (*balanced versatility*) and a poor communicator (*balanced deficiency*). In the Harrison Assessment system, this relationship between independently varying complementary traits illuminates new dimensions of understanding of an individual’s behavioral patterns.

Scales

Job Success Formula

A Job Success Formula is a comprehensive set of question and answer options that reveals the likelihood of an individual's success for a specific job. Using a mathematical formula, the answers to the set of questions are evaluated to produce a total score indicating how closely the individual comes to having the ideal behavioral patterns for the job. Job Success Formulas includes two other assessment options which can be weighted in relationship to each other to reflect the overall assessment result. These other two sections include an assessment of qualifications or “eligibility” (i.e., experience, education, and skills) and a further assessment of job related behaviors during the interview. Other assessment sections may be added such as skill or aptitude assessments. Job Success Formulas can be customized. The aim is to provide an overall context so that individual assessment results are not interpreted out of context of the overall assessment. Job Success Formulas provide a comprehensive and systematic means of producing a total assessment score. Rather than trying to guess at how to interpret the results of different types of assessments, Job Success Formulas produce a single score that indicates the degree to which an individual compares to an ideal candidate. Because Job Success Formulas are comprehensive, they enable highly effective pre-assessment, which allows for focusing only on the most ideal candidates in the recruitment process. Job Success Formulas also provide a structure that creates consistency between interviewers by structuring the entire recruitment/assessment process to focus on key job related factors, thereby allowing each interviewer or recruiter to be more effective.



Eligibility Score

The eligibility component of each Job Success Formula evaluates how applicants compare to the ideal levels of education, experience, and skills. All factors are weighted and scored, producing an accurate overall measurement of eligibility. The eligibility component can be used as an online pre-assessment or during the interview process by scoring or re-scoring the results after further questioning and reference checks. This option allows for numerous complex factors to be accurately and consistently evaluated.

Eligibility consists of:

- Certifications
- Specific job skills
- Educational levels
- Educational subjects
- Educational achievements
- Specific types of experience
- Specific amounts of experience

Suitability Score

The suitability component of each Job Success Formula evaluates how each applicant compares to a complete set of suitability factors. It is important to find a work situation that provides opportunities to express or use one's greatest capabilities to achieve personal satisfaction through work. In addition, it is important to find a work situation that has a minimum need for one's weaker traits or areas of imbalance.

When this compatibility is accompanied with the individual having interests that relate to the job, and work environment preferences that correspond to the environment of the workplace, the individual is much more likely to obtain job satisfaction as well as be fully engaged and retained. Consequently, it can be said that the individual has a high level of suitability for that position

If the suitability score is 75 or greater, the suitability aspect is considered to be a probable fit for the position depending upon the other factors such as experience, education, skills, training, aptitude, and/or performance at the interview.

The Harrison Assessments Suitability Questionnaire measures 175 suitability traits, 30-40 of which will apply to any one job function. Harrison Assessments has more than 6,500 suitability formulas related to a wide variety of job functions. They are based on 20 years of performance research and thus accurately reflect the behavioral requirements and scoring. The suitability formulas can easily be customized according to the specific behavioral requirements of the job.

Suitability factors consist of:

- Suitability
- Interests
- Work preferences
- Work values
- Interpersonal skills
- Attitudes
- Motivations
- Employment preferences

Consistency Scale

Any attempt to deceive the SmartQuestionnaire™ is detected by more than 8,000 cross-references that assess the consistency of the respondent's answers.

Each profile receives a consistency score from 0% to 100%. Scores of less than 80% indicate the assessment results are not sufficiently reliable. This threshold was determined when conducting performance research. By examining the relationship between performance scores and suitability scores, profiles with consistency scores of less than 80% showed a substantially lower correlation (often no correlation) when compared to profiles with consistency scores of 80% or above. Consequently, the data supports that assessments with low consistency are significantly less reliable. As jobs become more senior, the consistency threshold is increased, up to 90%. This threshold is connected to the job level of the Job Success Formulas. However, administrators can adjust the consistency threshold related to any Job Success Formula to be anywhere between 80% and 90%.



HARRISON ASSESSMENT REPORTS

Appropriate Use

The Harrison Assessment is a valuable resource that has a variety of organizational applications including for selection, development, succession and career planning, and team building.



Selection

The Harrison Assessments system provides a comprehensive assessment of the behavioral competencies required for a position. Integrated selection tools include performance-based interviewing questions, resources on how to attract the candidate, and the ability to calculate eligibility, suitability, and interview ratings for a composite ranking of candidates. The assessment is web-based and scored online with comprehensive results available immediately upon completion of the questionnaire.

Topic areas of the behavioral assessment include:

- Decision-making
- Communications
- Motivation
- Flexibility
- Conflict management
- Innovation

Development

The Harrison Suitability Profile identifies traits that will accelerate or hinder performance related to specific positions. The assessment reveals a person's work preferences and behavioral competencies, identifying developmental strategies to achieve or increase personal satisfaction and measurable job performance.

Succession Planning

Managing the talent pipeline is essential for effective talent management. The Harrison Assessment system ranks employees according to the eligibility and suitability for any position in the company. It can, in addition, include current job performance. Additional reports can be generated to provide job specific developmental plans to accelerate progress.

The Succession Planning system also includes a Career Planning system that offers an internal job board that enables employees to explore different jobs the company offers and express interest in specific jobs. It also includes reports related to career development and developing individual strengths. It identifies development plans and alternate career paths that leverage the talent pool and increase retention.

Team Building

Talent is not enough in today's specialized work environment. Talented people must effectively work together for the organization to succeed. Harrison Assessments Paradox Theory reveals team dynamics in a unique way, enabling individual team members to easily identify how their own behaviors contribute to or obstruct the team objectives. The group report also provides a step-by-step plan in which each team member can make adjustments to facilitate optimal team performance.

The Harrison team building tools are designed to produce the following results:

- Effective interactions between team members
- Individual and group discovery of strengths and challenges including team decision-making potential
- Identification of the best roles for each team member
- Identification of areas of potential cooperation and conflict
- Establish clear guidelines for effective interactions

Administration of the Harrison Assessment

Format

Harrison Assessments uses a computer based administration format and takes approximately 25-30 minutes to complete. The respondent is presented with a series of 8 statements and asked to rank order the statements in order of their preferences. Once an applicant performs the rank order of those statements, he/she is presented with another series to rank order. This process continues for 18 groups of questions enabling the measurement of 175 different traits.

Time

The Harrison Suitability Profile takes approximately 25-30 minutes to complete.

Scoring

Job specific suitability scores are automatically generated for the human resources administrator. Reports can be accessed and downloaded via the Harrison website.

Job Suitability Formulas

Each job has a Job Success Formula (JSF) within a job suitability category that identifies the type of trait, the importance of the trait related to the other traits, and how that trait should be scored in order to produce an overall score for job suitability. Job Suitability Formulas are included in the Harrison system based on previous research. The research is conducted using Harrison benchmarking technology, a software program that utilizes a proprietary algorithm to determine if any of the 175 suitability traits measured by the Harrison Assessment demonstrate a relationship with the overall performance score (see below for additional information).

Points are awarded or subtracted to each trait based on the relative importance of each trait to performance. Traits are categorized as essential traits, desirable traits, or traits to avoid. The algorithm generates a matrix which allocates points or subtracts points related to each level of each trait. The number of points added or subtracted is based on the relative importance of the traits and the impact each level of each trait has on performance. By analyzing these different types of relationships with job success, the computer modeling determines the exact mathematical model for the JSF that will best predict job success.

For any one job, there are only about 30-45 traits that relate to success. The other traits are ignored when considering suitability for that job. Generally, no one trait has more than a 10% impact on the overall suitability score. Existing JSF formulas based on previous research are available in the system, but can also be adjusted by the user to better reflect the specific key performance indicators related to the job. This customization is highly recommended since key performance indicators can significantly vary according to the company.

Individual Scoring

A Job Success Analysis Report is generated for each individual test taker. The Job Success Analysis Report shows the traits related to the job, the person's score for each trait, the impact of that score on job success, and an overall suitability score. Each of these factors is important in order to guide the user how to interpret the results and prevent misinterpretation or over-emphasis on any one trait when interpreting.

Overall individual suitability scores are derived based on how closely their responses align to the JSF. The overall score created by the JSF is a percentage based on the sum total of the points earned by the individual divided by the number of points possible in the JSF.

Individual scores for a given trait range from 2 to 10, 2 indicating an extremely weak trait and 10 indicating an extremely strong trait. A moderate or neutral score is 6. Some scores can be less than 2 in extreme circumstances in which other traits contribute to a further weakness of a trait. A score of 10, on the other hand, would indicate not just a strong preference but a need. Extreme scores are particularly relevant. Scoring for essential, desirable, and traits to avoid are subject to different principles of measurement and are described in greater detail below.

Essential Traits

The more the person has of an essential trait, the greater the performance. Essential traits have a direct correlation with performance. More points are given toward the overall score as the trait score is higher. The scores on essential traits have a positive number when the individual's score is a "10" and descend as the score goes down. Essential traits can have negative scores when the traits score is very low. In that case, not only does the individual lose the positive points toward the overall score, but further points are subtracted. Traits with the highest importance have the most positive points and thus the highest number of points offered for a particular trait reflects the importance of that trait compared to the other traits. For example, one essential trait could have a possible 150 points and another could have only a possible 75 points. In that case, the former trait would be given twice as much importance as the latter trait. The formula is designed to govern the number of points given for each level of each trait and thus the points added or subtracted can be controlled for every level of each trait.

Desirable Traits

Desirable traits are traits that do not necessarily help performance but the absence of the trait will hinder performance. Desirable traits do not have a strong correlation with performance; however, low scores or the absence of the trait will tend to be associated with poor performance. Consequently, moderate and high scores receive no points but as the trait becomes lower, more points are subtracted.

Traits to Avoid

Negative traits are traits that by nature are counter-productive to job success. For example, Blunt is a negative trait. Negative traits are given negative points. As the negative trait gets stronger (a higher score), it has a greater negative impact on success and thus more points are subtracted. Low scores and sometimes even moderate scores receive zero points.

Reports

Harrison Assessments offers numerous reports, each intended for a different purpose. For further details, please refer to the Basic Accreditation Manual.

EMPIRICAL EVALUATION OF THE HARRISON ASSESSMENT

Summary of Empirical Evaluation

An empirical evaluation of the Harrison Assessment has been conducted in compliance with legal and professional guidelines including the Uniform Guidelines on Employee Selection Procedures (EEOC, 1978), The Standards for Educational and Psychological Testing (The Standards; APA, 1999), and The Principles for the Validation and Use of Personnel Selection Procedures (The Principles; SIOP, 2003). Extensive validation efforts have demonstrated evidence of reliability and content, construct, and criterion-related validity of the Harrison Assessment. These results indicate that it is appropriate for use in both development and selection applications for a wide range of positions. Results of reliability and validity analyses are provided in the following sections. A meta-analysis which is a method of showing that the validity results generalize across a large number of positions provides a key piece of validity evidence. However, a local validation study to ensure compliance of your organization is recommended where feasible.

In addition to validation, legal and professional guidelines were followed and best practice criteria were used to test for adverse impact. Adverse impact refers to a substantially different rate of selection in hiring, promotion, or other employment decision which works to the disadvantage of members of a legally protected group. A selection rate for any protected group which is less than four-fifths ($4/5$, or eighty percent) of the rate for the group with the highest rate will generally be regarded by the federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by federal enforcement agencies as evidence of adverse impact. Analyses conducted for adverse impact using the four-fifths rule yielded no significant differences in selection rates based on race and sex.

Reliability

Reliability is the extent to which a test yields consistent scores across different assessment occasions. Overall, the Harrison Assessment demonstrates acceptable test-retest reliability and technical consistency.

Test-Retest Reliability

Test-retest reliability is a measure of reliability obtained by administering the same test twice over a period of time to a group of individuals. The test-retest correlation coefficients for the 74 primary trait scales in the Harrison Suitability Assessment are between .80 and .94 (see Table 1 below). The period between administration and re-administration of the assessment was three months. Analysis of the test-retest reliability coefficients indicates that the degree of reliability meets expected industry standards.

Table 1. Test-Retest Reliabilities

Scale	Coefficient	Scale	Coefficient
1. Certain	.89	38. Goal enthusiastic	.82
2. Open	.88	39. Stress management	.80
3. Outgoing	.92	40. Analyses pitfalls	.80
4. Optimistic	.88	41. Wants Frankness	.83
5. Analyzing	.85	42. Wants stable career	.86
6. Intuitive	.90	43. Systematic	.86
7. Authoritative	.86	44. Enlists cooperation	.83
8. Collaborative	.83	45. Wants diplomacy	.91
9. Persistent	.92	46. Tolerance of Outdoors	.84
10. Creative	.91	47. Team	.84
11. Risking	.88	48. Tolerance of Pressure	.90
12. Tempo	.88	49. Tolerance of Sitting	.81
13. Frank	.86	50. Tolerance of Standing	.82
14. Diplomatic	.88	51. Tolerance of Repetition	.83
15. Influencing	.81	52. Tolerance of Public contact	.82
16. Tolerance of bluntness	.84	53. Tolerance of Noise	.83
17. Assertive	.93	54. Tolerance of Driving	.88
18. Helpful	.87	55. Artistic	.88
19. Takes initiative	.83	56. Building/making	.90
20. Wants capable leader	.88	57. Clerical work	.86
21. Wants Challenge	.85	58. Manual work	.91
22. Relaxed	.85	59. Mechanical work	.90
23. Wants high pay	.85	60. Numerical	.88
24. Cause motivated	.84	61. Physical work	.94
25. Self-acceptance	.84	62. Public speaking	.94
26. Self-improvement	.84	63. Researching	.90
27. Warmth/empathy	.85	64. Science	.85
28. Wants recognition	.88	65. Teaching	.87
29. Organized	.88	66. Writing	.88
30. Flexible	.88	67. Healthy lifestyle	.83
31. Precise	.86	68. Children	.88
32. Tolerance of structure	.79	69. Food	.89
33. Wants to lead	.82	70. Computers	.88
34. Planning	.79	71. Finance	.84
35. Comfort with conflict	.83	72. Sports	.89
36. Enforcing	.88	73. Travel	.86
37. Wants Autonomy	.85	74. Self-Motivated	.88

Technical Consistency

Psychometric methods are used to determine the reliability of the respondent’s answers. In addition, a technological mechanism exists within the Harrison Assessment that detects (a) levels of attention and understanding of the questions and (b) attempts to manipulate the answers. Respondents have the opportunity to retake the instrument when their scores are not reliable enough for interpretation.

Research on Harrison Assessments suggests that consistency scores correlate with both performance and employee turnover. In a study of 341 employees at a nationwide parcel delivery service, results suggested that those with invalid profiles (consistency scores below –65) were much

more likely to terminate before six months. In addition, those with invalid profiles were much more likely to be poor performers.

22% of the best performers scored below –65 on the consistency score

33% of the good performers scored below –65 on the consistency score

41% of the poor performers scored below –65 on the consistency score

38% of those who stayed less than six months scored below –65 on the consistency score

The minimum acceptable consistency score for this position was set at –65. This cut-off point was determined by examining the relationship between the performance scores and the suitability scores. The consistency scores below –65 showed little or no relationship between performance and suitability, whereas the consistency scores above –65 showed a relationship between suitability and performance. Profiles with consistency scores below –65 were considered to be invalid and were not used to develop the template.

Validity

Validity is the extent to which a test measures what it intends to measure. Validity can be demonstrated by providing different kinds of evidence including content validity, construct validity, and criterion-related validity. Evidence of face validity, a non-psychometric type of validity, can also be helpful to assess user acceptability. The Harrison Assessment demonstrates several forms of validity evidence.

Content Validity

Content validity refers to the extent to which a test appropriately covers all relevant areas or facets of the construct (e.g., job performance) being measured. According to the Uniform Guidelines, content validity evidence is demonstrated by data showing that content of a selection procedure is representative of important aspects of performance on the job.

The Harrison Assessments methodology contains 12 paradoxes. The traits and their complements were selected by subject matter experts on the basis of usefulness, through a process of trial, error, and gradual refinement. Usefulness was determined with the following objectives in mind:

- 1) To identify the requirements of a wide variety of work situations.
- 2) To identify a wide variety of character strengths and personal needs at work.
- 3) To relate to a wide variety of task requirements.
- 4) To identify areas for personal growth that would enhance work potential and facilitate team effectiveness.

The Harrison Assessments algorithms quantify the traits needed in a position prior to computing suitability. This quantification is done through the comparison of an individual's profile to job incumbents in terms of key factors of performance and derailment. The Harrison Assessments system has approximately 6,500 standard Job Success Formulas.

The formulas used in the Harrison Assessment were developed by subject matter experts in the field using the Dictionary of Occupational Titles (DOT), a comprehensive document produced by the US Department of Labor that groups jobs based upon their similarities and defines their structure and content (the DOT was a predecessor of O*NET, onetonline.org). These templates and formulas have

been refined and updated based on 20 years of performance research to accurately reflect the behavioral requirements of a particular position.

Construct Validity

Construct validity refers to the degree to which a measure assesses what it is purported to assess. According to the Uniform Guidelines, construct validity evidence is demonstrated by data showing that the selection procedure measures the degree to which candidates demonstrate characteristics that are identified as important for successful job performance.

A common method of demonstrating construct validity of a test is to show that the instrument's trait scores correlate with several trait measures with which it should correlate (first referred to as "convergent validation" by Campbell and Fiske in 1959). In addition, construct validity is also demonstrated by a lack of relationship with measures of other traits with which it should not correlate (i.e., discriminant validation; Campbell & Fiske, 1959). This construct validation approach entails a straightforward procedure of hypothesizing correlations between theoretically related (unrelated) constructs and verifying the existence of those correlations using data.

Convergent and Discriminant Validity

Personality

Independent studies have been conducted that compare Harrison Assessment test results to personality assessments such as the MBTI, 16PF and NEO-PI-R. Given the importance of personality in determining preferences for behavior, the Harrison Assessment should demonstrate significant correlations with personality assessments. Results show substantial relationships between test results, demonstrating convergent validity. Correlations ranging from .20 to .53 and statistically significant at the $p < .01$ level were semantically analyzed in the validation study. Almost all of the Harrison Assessment correlations with the 16PF and MBTI were shown to be meaningful, given the analysis of the definitions of the scales.

The results also provided evidence of discriminant validity evidenced by lack of a relationship between the Harrison Assessment and 16PF's B factor which measures "scholastic mental ability" as indicated by concrete thinking vs. abstract thinking, a construct that is not measured by the Harrison Assessment. Meaningful points of comparison are presented in Table 2 below.



Table 2. Harrison Assessment Trait Score Correlations with the 16PF and MBTI Scores

HA Traits	16PF Factor	<i>r</i>	MBTI Preference	<i>r</i>
01 Certain	Q1 radicalism	.241	E Extraversion	-0.201
	H boldness	.280		
	E dominance	.275		
02 Open/Reflective	Q2 self-sufficiency	.236	N Intuition	0.267
	M imaginativeness	.224	T Thinking	-0.229
	I dependence	.199		
03 Outgoing	H boldness	.560	E Extraversion	-0.528
	F surgency	.462		
	A outwardness	.327		
	Q2 self-sufficiency	-.253		
	H boldness	.251		
	F surgency	.250		
06 Intuitive	O guilt-proneness	.218	P Perception	0.210
	H boldness	-.209		
07 Authoritative	E dominance	.352	E Extraversion	-0.224
	H boldness	.339		
	A outwardness	.243		
	N shrewdness	-.199		
	C ego strength	.197		
08 Collaborative	Q2 self-sufficiency	-.251	S Sensing	-0.308
	E dominance	-.239		
	Q1 radicalism	-.230		
	O guilt-proneness	.196		
09 Persistent	N shrewdness	-.289	T Thinking	-0.223
	Q4 tension	-.266		
	H boldness	.239		
	C ego strength	.225		
	Q3 self-concept control	.217		
10 Creative Thinking			N Intuition	0.292
11 Risking			P Perception	0.195
13 Frank	E dominance	.280		
	F surgency	.197		

HA Traits	16PF Factor	<i>r</i>	MBTI Preference	<i>r</i>
14 Diplomatic	E dominance	-.219		
15 Influencing	A outwardness	.303		
	H boldness	.219		
17 Assertive	Q3 self-concept control	-.212		
18 Helpful	I dependence	.284	F Feeling	0.291
	E dominance	-.262		
20 Wants Capable Leader	F surgency	-.226		
23 Wants High Pay	M imaginativeness	-.195		
24 Cause Motivated			F Feeling	0.213
25 Self-Acceptance	C ego strength	.265		
	N shrewdness	-.250		
27 Warmth/Empathy	E dominance	-.303	F Feeling	0.333
	I dependence	.302		
	Q1 radicalism	-.220		
29 Organized	Q3 self-concept control	.360	J Judgment	-0.384
	G superego strength	.347	S Sensing	-0.202
	F surgency	-.200	F Feeling	0.204
31 Precise	G superego strength	.232	J Judgment	-0.253
	F surgency	-.227		
	A outwardness	-.218		
	N shrewdness	.201		
	C ego strength	-.200		
32 Tolerance of Structure	E dominance	-.303	I Introversion	0.204
	H boldness	-.279		
	O guilt-proneness	.241		
	C ego strength	-.201		
34 Planning	N shrewdness	-.287	T Thinking	-0.207

HA Traits	16PF Factor	<i>r</i>	MBTI Preference	<i>r</i>
	Q4 tension	-.228		
37 Analytical			N Intuition	0.219
38 Analyses Pitfalls	Q2 self-sufficiency	.197	T Thinking	-0.243
38 Analyses Pitfalls			I Introversion	0.249
39 Comfort with Conflict	N shrewdness	-.306		
	C ego strength	.289		
	Q4 tension	-.222		
40 Enlists Cooperation	Q2 self-sufficiency	-.211		
41 Enthusiastic	H boldness	.286	E Extraversion	-0.250
	F surgency	.208		
42 Manages Stress Well	C ego strength	.273		
	Q4 tension	-.222		
45 Systematic	F surgency	-.356	J Judgment	-0.398
	E dominance	-.339	S Sensing	-0.294
	G superego strength	.276		
	H boldness	-.260		
	A outwardness	-.210		
	N shrewdness	.210		
	Q3 self-concept control	.207		
46 Takes Initiative	N shrewdness	-.265		
	H boldness	.225		
47 Wants Autonomy	Q1 radicalism	.211		
48 Wants Challenge	N shrewdness	-.300	T Thinking	-0.200
	H boldness	.272		
	Q4 tension	-.266		
	Q3 self-concept control	.254		
	C ego strength	.253		
	Q1 radicalism	-.211		
51 Wants to Lead	H boldness	.397	E Extraversion	-0.254

HA Traits	16PF Factor	<i>r</i>		MBTI Preference	<i>r</i>
	E dominance	.385			
	N shrewdness	-.282			
	A outwardness	.239			
	C ego strength	.215			
52 Wants Stable Career	E dominance	-.250		S Sensing	-0.260
	F surgency	-.203			

*Note: Only Pearson *r* values of at least .20 ($p < .01$) are reported here.*

Assessment Centers

In addition, a study was conducted comparing the Harrison Assessment to results of an Assessment Center. An Assessment Center is a comprehensive, standardized procedure wherein multiple assessment techniques, such as situational exercises and job simulations, are used to evaluate individual employees for purposes such as (a) promotion and selection, (b) transfers, (c) training and development, and (d) career planning. Results showed that more than half of the Harrison Assessment traits measured correlated significantly with Assessment Center dimensions and skill clusters (see Table 3). Correlations were moderate in level, with correlation magnitudes ranging from .29-.58. More detailed information and comparisons are presented in Appendix A.

Table 3. Assessment Center Correlations

<u>Managerial Skills</u> Authoritative (+) Self critical (-) Rigidly meticulous (-) Rigidly organized (-)	<u>Extra Role Sensitivity</u> Helpful (+) Cause-motivated (+) Warmth/empathy (+)	<u>Personal Skills</u> Wants autonomy (+) Dogmatic (-)
<u>Planning & Organizing</u> Flexible (+) Rigidly meticulous (-) Rigidly organized (-)	<u>Analytical Skills</u> Rigidly meticulous (-) Rigidly organized (-)	<u>Stress Tolerance</u> Dogmatic (-)
<u>Management Control</u> Risking (+) Frank (+) Influencing (+) Rigidly meticulous (-) Rigidly organized (-)	<u>Judgment</u> Rigidly meticulous (-)	<u>Interpersonal Skills</u> Warmth/empathy (+) Dogmatic (-)
<u>Decisiveness</u> Helpful (+) Warmth/empathy (+) Handles conflict (+) Organizational compatibility (+) Judgment (+)	<u>Leadership</u> Warmth/empathy (+) Dogmatic (-) Self critical (-) Ego self-critical (-)	<u>Organizational Sensitivity</u> Authoritative (+) Rigidly meticulous (-) Rigidly organized (-)
<u>Communication Skills</u> Authoritative (+) Wants recognition (+) Self critical (-)	<u>Interpersonal Sensitivity</u> Influencing (+)	

Factor Analysis

Construct validity also can be demonstrated by showing that items on a tool designed to measure the same construct or trait group together statistically using factor analysis. Factor analysis is a statistical technique used to determine the number of components or “factors” in a data set. A profiling system such as the Harrison Assessment, which is intended to be non-culture specific (e.g., Eastern vs. Western culture), should demonstrate good fit with a theoretical framework of personality, such as the Big 5 Theory of Personality. Similar to the Harrison Assessment, the Big 5 Theory of Personality is reported to cut across cultural differences. They both point out the similarities in personality domains across cultures. Harrison Assessment trait scores of 873 individuals were analyzed, using an exploratory factor analysis method. This analysis explored the possibilities of five [5], six [6], seven [7], and eight [8] factors (groupings) of traits.

The most meaningful clusters among these four exploratory factor analyses were yielded by the analysis that set the number of factors to be analyzed at five factors. Table 4 presents the five factors that were generated in the rotated component matrix of the factor analysis using principal component analysis extraction method and using varimax rotation with Kaiser normalization. The rotation converged in 13 iterations and yielded these five factors. The researchers gave factor labels to the

clusters of traits that loaded significantly on each factor (cut-off factor loading for the report was set at .400; please refer to Appendix B).

Table 4. Harrison Assessments Factor Analysis Results

Factor Loadings of Harrison Assessments Traits		NEO-PI-R Facets per Domain		
FACTOR 1	ACHIEVEMENT ORIENTATION			CONSCIENTIOUSNESS
0.733	Wants To Lead			Competence
0.640	Planning			Order
0.606	Takes Initiative			Dutifulness
0.572	Authoritative			Achievement-Striving
0.555	Analytical			Self-Discipline
0.512	Analyzes Pitfalls			Deliberation
-0.475	Relaxed			
0.426	Wants Challenge			
-0.425	Wants Diplomacy			
-0.419	Tolerance Of Structure			
-0.418	Wants Stable Career			
FACTOR 2	OTHER-ORIENTEDNESS			AGREEABLENESS
0.753	Helpful			Trust
0.721	Warmth/empathy			Straightforwardness
0.630	Cause Motivated			Altruism
0.542	Diplomatic			Compliance
0.497	Enlists Cooperation			Modesty
0.437	Collaborative			Tender-Mindedness
-0.411	Wants High Pay			
FACTOR 3	SELF-CONFIDENCE			EXTRAVERSION
0.610	Frank			Warmth
0.573	Assertive			Gregariousness
-0.508	Precise			Assertiveness
-0.490	Organized			Activity
0.477	Certain			Excitement-Seeking
0.399	Outgoing			Positive Emotions
FACTOR 4	STRESS MANAGEMENT			NEUROTICISM
0.570	Manages Stress Well			Anxiety
0.548	Comfort With Conflict			Angry Hostility
0.514	Optimistic			Depression
0.415	Persistent			Self-Consciousness
0.404	Enthusiastic			Impulsiveness
				Vulnerability to Stress

Factor Loadings of Harrison Assessments Traits		NEO-PI-R Facets per Domain	
FACTOR 5	CREATIVITY	OPENNESS TO EXPERIENCE	
0.639	Open/reflective		Fantasy
0.637	Creative Thinking		Aesthetics
0.528	Flexible		Actions
0.520	Intuitive		Ideas
			Feelings
			Values

Total variance explained by the five factors that emerged is 33%. These five are shown to be conceptually related to the five domains of the NEO-PI-R. This alignment found in the factor structure supports the hypothesis initially posed, which predicted a fit between the internal structure of the Harrison Assessment and the NEO-PI-R.

Criterion-Related Validity

Criterion-related validity refers to how well a test predicts an outcome or criterion, such as job performance and turnover. According to the Uniform Guidelines, criterion-related validity evidence is demonstrated by empirical data showing the selection procedure is predictive of, or significantly correlated with, important elements of work behavior.

Numerous local validation studies have been conducted and have demonstrated statistically significant correlations of suitability with employee performance for a wide variety of jobs. Correlation coefficients between the Harrison Assessment and job performance are greater than .3 without controlling for eligibility or considering interview results. When eligibility is controlled and interview results are included, correlations are substantially higher.

Turnover and Performance

Research supports the relationship between Harrison Assessment results and performance and turnover. A total of 341 employees at a nationwide parcel delivery service in the inside manual position were included in this study. Each employee completed the Harrison Assessment and results were compared against a customized job template for the position. Performance was rated by managers using a 1 (poor performers) to 6 (best performers) scale. The total performance score was derived by averaging these four scores. Performance criteria included: Attendance, Performance (pieces per hour), Service (quality of delivery), and Safety.

Results suggested the following:

- Of the employees predicted to have probable success using Harrison Assessments, 91% were successful.
- Of the employees predicted to fail using Harrison Assessments, 75% were poor performers or did not complete 6 months in the job.
- Of the employees falling in the gray area (71-74 suitability), 60% were within 10 points of the successful performance score and thus could be considered to be reasonably accurate. The gray

area indicates that the suitability is questionable and thus performance could be affected by other factors. However, by examining the proximity of the suitability score to the performance score (within 10 points), a general accuracy level can be assessed.

	Employee turnover rate (under 6 months)	Employee turnover rate (projected annually)
Best performers	2%	4%
Average to good performers	5%	10%
Poor performers	24%	48%

Meta-Analysis of Harrison Assessment and Performance

In order to combine the results of the local validation studies and estimate effect sizes across studies, we conducted a meta-analysis. The application of meta-analysis to local validation studies is known as validity generalization. The Standards (APA, 1999) and the Principles (SIOP, 2003) endorse validity generalization as evidence of the validity of employment assessments. A meta analysis for generalization purposes is generally regarded as stronger evidence than an individual study or a set of independent studies because it provides an average estimate of effect or relationship across individual studies, allowing for greater diversity among jobs and subjects. It also provides greater power to detect effects to do a larger N size than individual studies.

We identified 31 independent validation studies that used concurrent designs to include in the analysis using techniques specified by Hunter and Schmidt (1990). The studies included in the meta-analysis spanned a variety of industries and countries. Information pertaining to the studies included in the analysis is displayed in Table 5. Several local validation studies have been provided in Appendices C through G.



Table 5. Included Study Information

Citation	r	N	Study Location (Country)	Study Year
Real Estate Sales Managers	0.3456	261	USA	2014
Air Pilots - Major Airline	0.689	55	Hong Kong	2014
Consumer Bank Management Trainees	0.79	27	Malaysia	2014
Network Hardware Company Salespersons	0.553	95	Various	2014
Thailand Commercial Bank Credit Risk Trainees	0.704	36	Thailand	2014
Thailand Commercial Bank IT Management Trainees	0.644	27	Thailand	2014
USA Bank Directors of Operations	0.671	28	USA	2014
Wholesale Food Supplier Salespersons	0.477	93	Indonesia	2013
Storage Company Duty Managers	0.633	53	USA	2014
Financial Representatives	0.599	236	USA	2012
Investment Bank Management Trainees	0.55	50	Malaysia	2014
Wholesale Food Supplier Brand Managers	0.732	32	Indonesia	2013
Wholesale Food Supplier Product Specialists	0.673	39	Indonesia	2013
Wholesale Food Supplier Sales Managers	0.675	60	Indonesia	2013
International Paint Company Sales Executives	0.447	131	Malaysia	2014
International Paint Company Sales Managers	0.596	65	Malaysia	2014
Telecom Company Researchers	0.3526	523	Portugal	2014
Aerospace Engineering	0.673	33	USA	2014
Construction Materials Manufacturing Superintendents	0.667	29	USA	2013/2014
Diversified Business Group Management Trainees	0.669	23	Hong Kong	2011/2014
Education Company Admissions Agents	0.747	49	USA	2010
Financial Services Company Training Managers	0.775	43	USA	2014
International Bank Customer Care	0.667	59	United Kingdom	2009
International Bank Over The Counter Customer Service	0.827	32	United Kingdom	2010
International Beverage Company Sales Supervisors	0.327	258	China	2014/2015
International Beverages Company Sales Representatives	0.186	694	China	2014/2015
International Beverages Company Sales Representatives	0.633	73	China	2014/2015

Citation	r	N	Study Location (Country)	Study Year
International Beverages Company Sales Representatives (3rd Party)	0.559	65	China	2014/2015
International Credit Card Company Help Line Support	0.548	81	USA	2010
USA Energy Company Office Coordinators	0.711	27	USA	2008
Financial Services Payroll Services Salespersons	0.714	42	USA	2011

As shown in Table 6, the mean weighted relationship between the Harrison Assessment and job performance across jobs is estimated to be .459 for the fixed effects model and .607 for the random effects model ($p=.000$). These coefficients indicate good predictive ability.

Table 6. Meta-Analytic Results

Model	N	Estimate	Effect Size and 95% Confidence Interval		Significance
			Lower Limit	Upper Limit	
Fixed	31	.459	.431	.486	.000
Random	31	.607	.541	.667	.000

Face Validity

Face validity refers to the perceived relevance of the items on the test to the job, as judged by respondents and test users. Face validity includes the test taker's and test user's subjective judgment as to whether the questionnaire items and dimensions measured sufficiently relate to the job requirements and job activities.

The Harrison Suitability Assessment uses a unique questionnaire methodology called the SmartQuestionnaire™. The SmartQuestionnaire™ requires the assessee to rank order self-descriptive sentences. Only questions that relate to a specific job are considered when calculating the suitability score for that job. However, respondents are presented with both job-related and non job-related questions. The other non job-related questions about broad interests, for example, serve the purpose of enabling the ranking process to be more effective. Consequently, the trait scores as determined by the Harrison Suitability Assessment can be considered to be derived through an ipsative process due to the ranking system used.

Undesirable workplace behaviors are accurately identified using Paradox Technology™. All the ranked statements are positive. No negative questions exist in the questionnaire. However, potentially counter-productive behaviors are determined by analyzing the ranked relationships between the positive items. The respondent is unaware of those relationships (e.g., low level of face validity with regard to counterproductive behaviors). For this reason the SmartQuestionnaire™ could be called a 'blind self-assessment'.

Standardization and International Norms

Translation Procedure

The questionnaire translation begins with a translation followed by a blind back translation. The items that don't match are analyzed and discussed with the translators to determine if the translation or back translation is at fault. Items are retranslated as necessary. Once there is confidence related to the translation, data is collected related to questionnaire completion in the new language. Questionnaire results are then compared to the English questionnaire results for the same country. If the norms are significantly different, the questionnaire items are reanalyzed to determine the deficiency. This process is repeated until the norms are very similar between the new language and English.

The Harrison Assessments Suitability Assessment questionnaire is currently available in the following languages: Arabic, Chinese (Simplified), Chinese (Traditional), Croatian, Danish, Dutch, English (Australia, UK), English (US), Finnish, French, French (Canada), German, Indonesian, Italian, Japanese, Korean, Malay, Norwegian, Polish, Portuguese, Portuguese (Brazil), Romanian, Russian, Serbian, Spanish, Spanish (Latin America), Swedish, Thai, Turkish and Vietnamese.

Harrison Assessment reports are available in the following languages: Arabic, Chinese (Simplified), Chinese (Traditional), English (Australia, UK), English (US), German, Indonesian, Japanese, Korean, Malay, Polish, Portuguese, Portuguese (Brazil), Romanian, Serbian, Spanish (Latin America), Swedish and Vietnamese.

Normative Reference Groups

The following tables provide group specific mean suitability scores by job type for age, sex and racial groups. The norms listed are based on data obtained from the United States, but norms from other countries are available upon request.

Group Comparisons

Job Type Overall

Administration	Customer Service	Management Middle	Management Upper	Sales	Supervisory	Technical
56.2	68.8	73.5	70.9	71.6	74.7	70.2

N= 330141

Sex by Job Type

Sex	N	Job Type Grouping						
		Administration	Customer Service	Management Middle	Management Upper	Sales	Supervisory	Technical
Male	140473	53.1	67.9	75.2	73.5	72.6	75.1	69.8
Female	92101	61.4	70.9	71.7	67.9	69.9	74.3	70.7

Race by Job Type

Race	N	Job Type Grouping						
		Administration	Customer Service	Management Middle	Management Upper	Sales	Supervisory	Technical
African American	13935	61.2	69.7	73.5	71.1	71.0	74.0	72.2
Asian	26590	57.9	65.9	71.0	68.6	71.1	73.7	72.4
Caucasian	132958	55.3	70.3	75.4	73.3	72.9	75.8	69.9
Hispanic	12214	60.8	67.7	71.5	68.2	70.4	73.4	72.1

Age by Job Type

Age	N	Job Type Grouping						
		Administration	Customer Service	Management Middle	Management Upper	Sales	Supervisory	Technical
< 18	112	53.1	59.7	54.1	48.2	62.5	64.1	66.1
19 - 20	1372	57.1	70.3	71.7	69.1	72.3	73.7	69.2
21 - 23	4855	57.5	72.5	72.1	69.9	72.3	74.0	69.8
24 - 26	3593	58.4	71.8	71.6	68.6	71.6	73.6	70.8
27 - 29	2563	56.9	71.3	72.7	69.6	71.6	74.0	70.3
30 - 34	3010	55.5	69.6	73.7	70.8	71.5	74.6	69.8
35 - 39	1823	53.4	67.7	74.5	71.9	72.0	74.5	69.1

Age	N	Job Type Grouping						
		Administration	Customer Service	Management Middle	Management Upper	Sales	Supervisory	Technical
40 - 44	1686	52.1	69.4	75.7	72.6	72.0	75.6	68.1
45 - 50	1825	51.0	68.4	76.6	73.9	72.4	76.4	67.6
> 50	2229	50.4	68.0	76.4	73.6	71.7	76.9	67.4

Adverse Impact

The U.S. Equal Employment Opportunity Commission (EEOC) is responsible for enforcing federal laws that make it illegal to discriminate against a job applicant or an employee based on protected group status (race, color, religion, sex, national origin), age (40 or older), and disability. The Uniform Guidelines (1978) are a set of principles designed to guide compliance with federal law prohibiting discrimination. According to the guidelines, the use of any selection procedure that has an adverse impact on the hiring, promotion, or other employment or membership opportunities for members of any race, sex, or ethnic group is considered to be discriminatory and inconsistent with these guidelines, unless the procedure has been validated in accordance with these guidelines.

Adverse impact occurs when the rate of selection in hiring, promotion, or other employment decisions with respect to members of a particular group is substantially different from the rate for other groups, and when this substantially different rate works to the disadvantage of members of a protected class (e.g., race, age, gender, etc.). To test for adverse impact, the Adverse Impact Ratio (AIR) was calculated and the 4/5ths Rule, also known as the 80% Rule, was applied to the Harrison Assessment. This rule, supported by the Uniform Guidelines for Employee Selection Procedures (1978), is used as a guideline to compare the selection rates for various groups. Results demonstrated no adverse impact across gender and racial groups.

80% Rule

A selection rate that is less than 4/5ths (80%) of the rate for the group with the highest selection rate will generally be regarded as evidence of adverse impact, while a greater than 4/5ths rate will not be regarded as adverse impact. Using this criterion, data from the Harrison Assessment system shows no adverse impact based on race or sex. The data show that selection ratios are very similar for various genders and racial groups. In addition, each job category meets the EEOC guidelines for equal opportunity.

Pass Rate = number passing/respondents

Adverse Impact Ratio = passing rate of group with smallest pass rate/passing rate of group with highest pass rate

Results for Racial Groups

The percentage of persons “passing” the Harrison Assessment Suitability Assessment for each position category was calculated for four racial groups: African Americans (N=509), Caucasians (N=459), Asians (N=495), and Hispanics (N=529). The results of the analyses are presented in Table 7 on the following page.

Table 7. Adverse Impact Ratio Results Based on Racial Group

Industry		Pass Rate	Adverse Impact Ratio (AIR)			
			African American	Asian	Caucasian	Hispanic
Administration						
	African American	61%				
	Asian	52%	0.85			
	Caucasian	52%	0.85	1.00		
	Hispanic	64%	0.95	0.81	0.81	
Customer Service						
	African American	68%				
	Asian	74%	0.92			
	Caucasian	72%	0.94	0.97		
	Hispanic	80%	0.85	0.93	0.90	
Management						
	African American	94%				
	Asian	88%	0.94			
	Caucasian	92%	0.98	0.96		
	Hispanic	94%	1.00	0.94	0.98	
Professional						
	African American	82%				
	Asian	82%	1.00			
	Caucasian	80%	0.98	0.98		
	Hispanic	87%	0.94	0.94	0.92	
Sales						
	African American	94%				
	Asian	90%	0.96			
	Caucasian	94%	1.00	0.96		
	Hispanic	91%	0.97	0.99	0.97	
Supervisory						
	African American	94%				
	Asian	80%	0.85			
	Caucasian	79%	0.84	0.99		
	Hispanic	86%	0.91	0.93	0.92	
Technical						
	African American	95%				
	Asian	89%	0.94			
	Caucasian	86%	0.91	0.97		
	Hispanic	85%	0.89	0.96	0.99	

Results for Sex

The percentage of persons passing the Harrison Assessment Suitability Assessment for each position category was calculated for men (N = 369,134.0) and women (N = 320,533.0). The results of the analyses are presented in Table 8.

Table 8. Adverse Impact Ratio Results Based on Sex

Industry		Pass Rate	Adverse Impact Ratio (AIR)
Administration	Men	23%	.85
	Women	27%	
Customer Service	Men	75%	1.0
	Women	75%	
Management	Men	91%	1.0
	Women	91%	
Professional	Men	79%	.98
	Women	81%	
Sales	Men	92%	.98
	Women	90%	
Supervisory	Men	80%	1.0
	Women	80%	
Technical	Men	87%	.99
	Women	86%	

Summary

This manual details the job relevant test construction, reliability, and validity evidence of the tool. Extensive evidence in accordance with legal and professional guidelines has been established, strongly supporting the use of Harrison Assessments for selection or hiring purposes.

In particular, the meta-analytic results provided demonstrate the robustness of the tool in predicting job performance across a number of roles (representative sample studies are provided in the Appendix). In addition, the Harrison Assessment demonstrated no adverse impact across racial or gender groups, indicating that individuals in these legally protected groups would have been disproportionately affected by employment decisions made with the tool.

While local validation studies are always recommended, the validity evidence in this manual is sufficiently generalized to support the use of the tool based on a job analysis and mapping of the traits in cases where a local validation study is not feasible.