

TECHNICAL MANUAL & USER GUIDE

CTPI-R

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1. User Information and Applicability

This chapter provides a brief overview of the information needed to use the assessment and its main applications. The **CTPI-R** is administered online. Additional information about specific uses or modes of administration can be obtained from customer service.

1.1. Main areas of application

The **CTPI-R** is intended for HR professionals and is designed in a way that enables it to be used globally, irrespective of the country or culture. It is intended for HR professionals. It can be used throughout an employee's career, for different purposes and at different levels:

Individuals	Teams	Organisations
Recruitment	Analysis of training needs	Management audits
Career management	Team building	Succession planning
Personal development		Research
Workplace counselling		Corporate culture shift

It is particularly appropriate for the assessment of individuals holding a post-graduate diploma (Master's degree or higher) as well as for managers, although the content of the **CTPI-R** relates to personality characteristics that can be pertinent to various occupational fields.

However, due to the dimensions being measured, it is less suitable for the assessment of people with certain occupations (or who are being recruited for certain occupations), such as production line work or clerical positions. The main reason is that most of the personality dimensions included in the **CTPI-R** are meant to predict managerial performance (e.g. Control/Power or Developing others), which is not necessarily relevant to all types of occupations. The language level of some items can also be inappropriate in the assessment of people with a lower mastery of the English language.

Central Test offers other tools, such as the Professional Profile-R and the Big Five Profile, better suited to these types of occupational fields. Another assessment, the Sales Profile-R, was specifically designed for sales positions and customer service jobs.

At present, the **CTPI-R** is only available in normative form. The **CTPI-R** questions are presented under different formats: 6-point Likert scales and multiple-choice questions with 2, 3 or 4 options.

The questionnaire consists of 114 questions. There are 4 dimensions, under which there are 19 factors. Each factor includes 6 items.

In addition to the 19 factors, the **CTPI-R** questionnaire includes a social desirability scale. The social desirability items are integrated in the questionnaire with the items of other factors.

This method detects people's tendency to answer the questions in a way as to portray an overly positive image of themselves, providing the test-administrator with an indication of this tendency. However, scores obtained on this scale need to be interpreted carefully and considered together with the overall score pattern, as well as with other information about the person. It is important to

note that the **CTPI-R** questionnaire does not include answers that are scored on more than one scale, with the exception of the social desirability scale.

CTPI-R is available in English, French, Spanish, German, Brazilian and Portuguese and will soon be available in Arabic. For more information on availability in a particular language, please contact the *Central Test* consulting service (consulting@centraltest.com).

1.2. User qualification

The **CTPI-R** questionnaire uses business vocabulary and is meant to be used by Human Resources, training and executive development professionals and psychologists. Every person who uses the **CTPI-R** for a professional assessment has to follow a preliminary training.

Mode of Administration

The **CTPI-R** is designed to be administered online, however a PDF version of the questionnaire can also be made available for offline administration if conditions do not allow an online administration of the test. The reports can only be generated online, therefore, if the test has been administered offline, the test-administrator has to enter the candidate's responses in the online version of the questionnaire.

Being a personality questionnaire, the **CTPI-R** can be administered from a distance and without supervision.

Time Required for Administration

The table below gives an overview of the estimated time required for a complete administration of the test.

	Online	Offline
Preparation	A few seconds to send the standard e-mail with the instructions	10 minutes to prepare the materials and give the instructions
Administration	25-30 minutes	25-30 minutes
Scoring and profiling	A few seconds	15 minutes (responses need to be entered in the online version of the questionnaire to get the report)
Feedback	20 minutes to an hour depending on the field of application	20 minutes to an hour depending on the field of application

The test does not have a time restriction. However, candidates should be encouraged to answer the questions quickly, to avoid spending too much time thinking about each statement. It is always preferable to answer spontaneously to a personality questionnaire, as there is no right or wrong answer.

Computer-generated Reports

As with all other *Central Test* tools, the **CTPI-R** reports are flexible, customizable and available in several languages. Specific sections can be included into or excluded from the report depending on the needs of the administrator. There are two versions of the report, the company's version and the candidate's version, which can be configured separately.

1.3. Purchase, Conditions and Costs

The **CTPI-R**'s purchase, conditions and cost vary from country to country. However, the following points generally apply:

The **CTPI-R** was created for the following users: HR professionals, training managers, executive development professionals and psychologists. A preliminary training is compulsory. For more information on the training, please contact *Central Test*'s customer service or one of *Central Test*'s partners.

The **CTPI-R** can be ordered online after having followed the training or by contacting one of *Central Test*'s offices or one of *Central Test*'s partners worldwide.

This technical document is available and free to be downloaded for any *Central Test* registered user. The link is available from the documentation tab in your client account.

For information on the **CTPI-R** prices and related products and services, contact *Central Test*'s customer service or one of *Central test*'s partners.

2. Conceptual Framework and Development

This chapter describes the initial conceptual framework of the **CTPI-R** and its development. The **CTPI-R** is a revised version of the CTPI-Pro. It was developed on the basis of different theoretical and empirical models of personality at work, by considering the dimensions measured by existing personality questionnaires as well as the conceptual criteria used for other successful *Central Test* tools (namely the Professional Profile-R and the Occupational Interest Inventory).

2.1. Conceptual Framework of CTPI-R

The first phase of development took place between 2004 and 2006. The development of the conceptual framework for the CTPI-Pro started with a study that aimed to identify the key elements necessary for the development of a comprehensive work personality assessment tool. This led to the creation of an initial model of personality.

This initial model of personality was critically reviewed by a panel of experts on management. The first version was launched in 2009 for the English-speaking countries (and in 2010 for the French and Spanish speaking countries).

Key facts of the development of the conceptual framework – the operational phase

In order to determine the most important scales (or dimensions) to be measured in the questionnaire, an extensive literature review and different data analyses were undertaken. This phase of development took two years and involved the following:

- A review of all existing job-related personality models and questionnaires. This included the work of H. B. Cattell and H. Eysenck, and also covered personality questionnaires such as the California Personality Inventory (CPI), 16PF, 15FQ+, FIRO scales, the Myers-Briggs Type Indicator, the Kostick PAPI and the Ego state questionnaire based on Eric Bern's TA theory.
- A review of all the validation studies on the relationship between personality scales and job performance.
- A review of the documentation (job profiles, evaluation processes, list of skills required) from our H.R. client organizations to determine which aspects of personality are relevant to them.

The final questionnaire (**CTPI-R – 2012**) includes 114 questions measuring 19 factors organised under 4 dimensions. The dimensions and factors are summarized in the following table:

Cluster-1 People Management	Cluster-2 Perception Mode	Cluster-3 Self Management	Cluster-4 Change Management
1. Affiliation 2. Assertiveness 3. Control/Power 4. Developing others 5. Tactical 6. Trust	1. Conscientiousness 2. Rational 3. Rule conscientious	1. Commitment 2. Lively 3. Optimism 4. Self-confidence 5. Emotional stability 6. Surpassing	1. Action oriented 2. Adaptability 3. Experimental 4. Visionary

2.2. Descriptions of the dimensions

People Management

1. Affiliation

This dimension refers to the tendency to be kind, affectionate and open towards others at work.

Definition

Individuals with a high score on this dimension seek to create genuine bonds with their environment (colleagues, business partners, etc.), to listen to others and to express their feelings easily.

Individuals with a low score have a tendency to be rather distant and formal, and to share their views and impressions to a lesser extent.

(+) High score

Warm, amicable, pleasant.

(-) Low score

Distant, solitary, detached.

2. Assertiveness

This dimension refers to the tendency to express and defend one's opinions, rights and wishes in an open, yet correct manner.

Definition

People with a high score on this dimension do not hesitate to speak up and do not fear conflicts. They can make unpopular decisions when their assignments require them to.

People with a low score have a tendency to be compliant and to avoid conflicts. They may feel remorse for not doing a favour or for defending their choices when this goes against the interests of others.

(+) High score

Firm, categorical, assertive.

(-) Low score

Accommodating, conciliatory, easy to influence.

3. Control/Power

This dimension refers to the tendency to seek control over the course of events, to have one's own way of doing things accepted, and to gain power.

Definition

People with a high score on this dimension like managing others and having high-status positions so they can intervene effectively and with authority.

People with a low score tend to leave others to act as they wish, thus being rather indulgent or seemingly indifferent.

(+) High score

Intrusive, controlling, authoritative.

(-) Low score

Indulgent, laissez-faire, non-intrusive.

4. Developing others

This dimension refers to the tendency and desire to support, mentor and encourage others in order to help them reach their potential and become more efficient.

Definition

People with a high score on this dimension like spending time helping everyone develop their individual abilities for the benefit of the team. They firmly believe in the potential in everyone, with no exceptions.

On the other hand, individuals with a low score believe that everyone is capable of self-management and that offering too much support can lead to inefficiency. They prefer to spend more time with people whom they consider to be more talented than the others.

(+) High score

Provides support, encouragement, assistance.

(-) Low score

Favours autonomy and self-learning.

5. Tactical

This dimension refers to the tendency to be tactical and diplomatic when dealing with others.

Definition

People with a high score on this dimension tend to adapt their speech to the person they are talking to, in order to cajole them and win them over. They also tend to hide their real thoughts to prevent divulging personal information about themselves.

People with a low score tend to act spontaneously and to be straightforward, honest and candid, and this may work against them.

(+) High score	Strategic, tactical thinking, calculating.
(-) Low score	Spontaneous, authentic, ingenuous.

6. Trust

Definition	This dimension refers to the tendency to be trusting towards others.
	People with a high score on this dimension tend to believe that human beings are naturally good. They trust others as long as nothing conspicuous arises, and can lack vigilance.
	On the contrary, people with a low score tend to be constantly on the watch. Naturally suspicious, they often question the information they receive, and the motivations behind people's actions.
(+) High score	Trusts others easily.
(-) Low score	Alert, sceptical, suspicious.

Perception Mode

7. Conscientiousness

Definition	This dimension refers to the tendency to carry out tasks in a thorough, meticulous and organised way.
	People with a high score on this dimension need to produce very precise work and aim for perfection, which can reduce their productivity.
	People with a low score do not take the time to review everything in detail and they have a tendency to be carefree, spontaneous and sometimes inaccurate, but can work more quickly.
(+) High score	Meticulous, precise, conscientious.
(-) Low score	Distracted, spontaneous, seeks efficiency.

8. Rational

Definition	This dimension refers to the way information is perceived and judgments made.
	People with high rationality make judgments based on actions and tend to make decisions considering concrete facts and results.
	On the other hand, people with a low score on this dimension tend to base their decisions on their intuition and experience and to consider

the underlying human side of every situation.

(+) High score

Objective, factual, rational.

(-) Low score

Sensitive, pays attention to his/her feelings.

9. Rule conscientious

This dimension refers to the tendency to strictly follow the rules and moral standards established by society.

Definition

People with a high score on this dimension have a need for reference points and tend to follow established regulations. They may sometimes be rigid and too focused on procedure.

In contrast, people with a low score have a tendency to disregard certain rules when they hinder the successful completion of a project, thus thinking of the company's interests.

(+) High score

Respectful of values, laws and procedures.

(-) Low score

Permissive, tolerant, lenient.

Self Management

10. Commitment

This dimension refers to the tendency to draw satisfaction from being dedicated to one's job.

Definition

People with a high score on this dimension have the need to be completely devoted and committed to their company, to the point of developing a personal identity with it.

In contrast, people with a low score have the tendency to maintain a certain distance and try to keep their professional and private lives separate.

(+) High score

Involved, devoted, workaholic.

(-) Low score

Separates private and professional lives.

11. Lively

Definition

This dimension refers to the tendency to be energetic, outgoing and

full of life.

People with a high score on this dimension have a tendency to handle situations in an active and vivid manner, and may even appear to be too lively in the eyes of certain people.

On the other hand, people with a low score are reserved, calm, serious, and think things through.

(+) High score

Energetic, enthusiastic, light-hearted.

(-) Low score

Reserved, calm, composed.

12. Optimism

This dimension refers to the tendency to hold positive expectations and to easily recover from failures.

Definition

People with a high score on this dimension are optimistic by nature and tend to take responsibility for their own failures and accomplishments.

On the other hand, people with a low score are more critical and prefer to have negative expectations in order to avoid being disappointed.

(+) High score

Hopeful, positive, recovers easily from failures.

(-) Low score

Pessimistic, realistic, easily discouraged.

13. Self-confidence

This dimension refers to the tendency to have self-confidence, to believe in one's potential.

Definition

People with high scores rarely question themselves, sometimes as a result of being overly confident. They lack concern for what others think of them.

On the other hand, people with low scores have self-doubt and are easily affected by criticism and have a greater need for recognition.

(+) High score

Confident, self-assured, audacious.

(-) Low score

Lacks confidence, self-doubting.

14. Emotional stability

	This dimension refers to the ability to recognize one's own emotions and to control emotional reactions.
Definition	People with a high score on this dimension often have a stable mood and are not easily affected by external factors such as stress or pressure. In extreme situations, that could be seen as indifference. People with a low score have less emotional control as portrayed by impulsive acts and passionate reactions.
(+) High score	Stable, imperturbable, self-controlled.
(-) Low score	Emotional, impulsive, passionate.

15. Surpassing

	This dimension refers to the tendency to be ambitious, driven and competitive.
Definition	People with a high score on this dimension like challenges and tend to set high goals for themselves. Moreover, they will do anything to reach and even surpass their goals. On the other hand, people with a low score tend to feel satisfied with their current situation and do not seek to surpass their objectives once they have reached them nor do they constantly set new goals for themselves.
(+) High score	Ambitious, competitive, desire for success.
(-) Low score	Satisfied with current situation.

Change Management

16. Action oriented

	This dimension refers to the tendency to take initiative, risks and choose action over reflection in order to make progress even if there is uncertainty.
Definition	People with a high score on this dimension do not hesitate to act and to take risks in order to reach their goals quickly and move forward. People with a low score have a tendency to progress slowly and with caution, to allow time for reflection.
(+) High score	Reacts to change with action.
(-) Low score	Reacts to change with reflection.

17. Adaptability

	This dimension refers to the ability to adapt to change and novelty.
Definition	People with a high score on this dimension are flexible and are able to modify their behaviour according to the context, without being attached to a particular routine or habit.
	People with a low score tend to resist change and have difficulty changing their habits.
(+) High score	Flexible, adapts well to change.
(-) Low score	Inflexible, resists change.

18. Experimental

	This dimension refers to the desire to explore and innovate, sometimes to the detriment of existent solutions.
Definition	People with high scores often try to test new methods and technology, to make day-to-day tasks easier, to find original solutions.
	People with low scores tend to be conventional and prefer to use proven methods. They value reliability when moving forward with projects.
(+) High score	Explorer, tests new methods.
(-) Low score	Traditional, follows established methods.

19. Visionary

	This dimension refers to the tendency to be a “visionary”, to understand trends and patterns and to anticipate future events, by taking into account all aspects of a project.
Definition	People with a high score have the need to make projections about future events, and to anticipate possible outcomes.
	On the other hand, people with a low score on this dimension have a tendency to enjoy living in the present and are hesitant, even sceptical, about wanting to make predictions too much.
(+) High score	Anticipative, turned towards the future.
(-) Low score	Factual, pragmatic, focused on the present.

3. Psychometric Properties

This chapter describes the process of transforming raw scores into standardized scores which was done during the development of the **CTPI-R**. A description of the norms will be included in the manual that will be published soon.

3.1. Scaling

The **CTPI-R** uses a continuous scale ranging from 0 to 10 to measure personality attributes. 0 implies a low level and 10 implies a high level on the corresponding personality trait. As stated above, each factor includes 6 items with a total of 20 to 36 response options.

A numeric value is attributed to every response option. To calculate the score on each dimension, the value of every chosen answer is added. A score higher than 8 or lower than 2 is considered to be an extreme score.

3.2. Sample Descriptives

The sample consisted of 12,367 English-speaking participants across 138 countries.

Table 1. Distribution Based on Gender.

Gender	Percentage (%)	N
Female	29.80	3691
Male	69.50	8593
Not Defined	0.70	83

Table 2. Distribution Based on Age Group.

Age group	Percentage (%)	N
Not Defined	2.20	267
18-25	11.80	1459
26-33	27.10	3348
34-41	32.80	4054
42-49	18.00	2221
50+	8.2	1018

Table 3. Distribution based on country of origin.

Country of Origin	Percentage (%)	N
India	41.90	5178
United Arab Emirates	9.50	1174
Mauritius	7.90	977
France	6.00	744
Uganda	5.90	724
Kenya	2.50	309
Syria	2.40	300
Nigeria	2.30	287
Mongolia	1.50	183
Others	20.10	2491

Note: Countries of Origin in the "Others" category have been grouped together as so as they correspond to a number that is not sufficient to be represented. The countries grouped as so are: The Åland Islands, Algeria, Angola, Antigua & Barbuda, Argentina, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belgium, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Côte d'Ivoire, Cambodia, Cameroon, Canada, Cape Verde, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, Gabon, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guyana, Heard & MacDonald Islands, Holy See, Hong Kong, Hungary, Iceland, Indonesia, Iran, Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kuwait, Latvia, Lebanon, Lithuania, Luxembourg, Macedonia, Malaysia, Maldives, Mali, Malta, Martinique, Mexico, Morocco, Namibia, Nepal, Netherlands, New Caledonia, New Zealand, Norway, Oman, Pakistan, Panama, Papua New Guinea, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, Romania, Russia, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Martin (Dutch), Saint Martin (French), Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, South Korea, South Sudan, Spain, Sri Lanka, State of Palestine, Sudan, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Tonga, Trinidad & Tobago, Tunisia, Turkey, Turks & Caicos Islands, Ukraine, United Kingdom, USA, Uzbekistan, Venezuela, Vietnam, Zambia and Zimbabwe.

Table 4. Distribution based on study level.

Study level	Percentage (%)	N
Level 1: Master's Degree, PhD, Engineering or Business School, MBA	41.70	5153
Level 2: Bachelor's Degree, First-year Masters	35.30	4368

Level 3: 2 years of Vocational or University Studies	4.00	490
Level 4: High School Diploma	4.50	562
Level 5: Trades Training, No High School Diploma	1.00	119
Level 6: Students	1.30	156
Not Defined	12.30	1519

3.3. Norms

Norms help us to compare an individual's score on a test with the scores of others who completed the same assessment, usually under similar conditions. These individuals who took the test at the same time are representative of the population for which an assessment is intended, and are therefore referred to as the norm group. The closer the match between the characteristics of the sample and the target population, the more accurate the distribution will be as a ranking guide. With norms, test developers and psychologists are able to establish comparisons between individuals and make more objective decisions. Norm groups enable us to attribute meaning to test scores and quantify an individual's performance, level of an attribute or trait relative to his/her peers.

In the case of work-based assessments, norm groups help HR Managers, recruiters and coaches to:

- Determine a candidate's suitability for a role relative to the job specification.
- Evaluate a candidate's abilities across a range of desired competencies.
- Identify an employee's skill deficits and tailor training for development.
- Identify a candidate's potential team and organisational culture fit.
- Determine how a candidate is likely to respond to stress or changes in the work environment.
- Establish objective metrics of performance.

Table 5. Factor Score Norms for the Whole Sample.

Factor	Mean	SD	Median	Min	Max	Range	SE
Action oriented	4.49	1.78	4.40	0.00	10.00	10.00	0.02
Adaptability	4.93	1.93	5.00	0.00	10.00	10.00	0.02
Affiliation	5.67	1.87	5.80	0.00	10.00	10.00	0.02
Assertiveness	5.26	1.74	5.00	0.00	10.00	10.00	0.02
Commitment	6.14	1.64	6.40	0.00	10.00	10.00	0.01
Conscientiousness	5.03	2.04	5.00	0.00	10.00	10.00	0.02

Control/Power	4.48	2.07	4.20	0.00	10.00	10.00	0.02
Developing others	6.52	1.77	6.70	0.00	10.00	10.00	0.02
Emotional stability	5.69	2.09	5.80	0.00	10.00	10.00	0.02
Experimental	6.48	2.05	6.70	0.00	10.00	10.00	0.02
Lively	6.26	1.9	6.40	0.00	10.00	10.00	0.02
Optimism	6.66	1.65	6.70	0.30	10.00	9.70	0.01
Rational	5.49	2.02	5.60	0.00	10.60	10.60	0.02
Rule conscientious	5.99	1.72	6.10	0.00	10.00	10.00	0.02
Self-confidence	6.37	1.73	6.70	0.00	10.30	10.30	0.02
Social desirability	1.8	1.59	1.80	0.00	10.00	10.00	0.01
Surpassing	6.1	1.77	6.40	0.00	10.00	10.00	0.02
Tactical	4.59	1.92	4.70	0.00	10.00	10.00	0.02
Trust	5.58	2.25	5.60	0.00	10.00	10.00	0.02
Visionary	5.71	1.58	5.60	0.60	10.00	9.40	0.01

Table 6. Factor Score Norms based on Gender.

Factor	Mean	SD	Median	Min	Max	Range	SE
Females							
Action oriented	4.38	1.74	4.20	0.00	10.00	10.00	0.03
Adaptability	4.83	1.96	4.70	0.00	10.00	10.00	0.03
Affiliation	5.44	1.94	5.60	0.00	10.00	10.00	0.03
Assertiveness	5.3	1.80	5.30	0.00	10.00	10.00	0.03
Commitment	5.9	1.70	6.10	0.00	10.00	10.00	0.03
Conscientiousness	5.08	2.10	5.00	0.00	10.00	10.00	0.03

Control/Power	4.46	2.04	4.20	0.00	10.00	10.00	0.03
Developing others	6.44	1.81	6.70	0.00	10.00	10.00	0.03
Emotional stability	5.29	2.18	5.30	0.00	10.00	10.00	0.04
Experimental	6.01	2.12	6.10	0.00	10.00	10.00	0.03
Lively	6.43	1.99	6.70	0.00	10.00	10.00	0.03
Optimism	6.66	1.70	6.90	0.30	10.00	9.70	0.03
Rational	5.21	2.15	5.30	0.00	10.00	10.00	0.04
Rule conscientious	5.98	1.61	6.10	0.00	10.00	10.00	0.03
Self-confidence	6.06	1.88	6.40	0.00	10.00	10.00	0.03
Social desirability	1.61	1.53	0.90	0.00	10.00	10.00	0.03
Surpassing	5.72	1.80	5.80	0.30	10.00	9.70	0.03
Tactical	4.21	1.91	4.20	0.00	10.00	9.70	0.03
Trust	5.32	2.26	5.30	0.00	10.00	10.00	0.04
Visionary	5.52	1.61	5.60	0.60	10.00	9.40	0.03

Factor	Mean	SD	Median	Min	Max	Range	SE
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Males

Action-oriented	4.53	1.80	4.40	0.00	10.00	10.00	0.02
Adaptability	4.99	1.92	5.00	0.00	10.00	10.00	0.02
Affiliation	5.77	1.83	5.80	0.00	10.00	10.00	0.02
Assertiveness	5.24	1.71	5.00	0.00	10.00	10.00	0.02
Commitment	6.26	1.59	6.40	0.00	10.00	10.00	0.02
Conscientiousness	5.02	2.01	5.00	0.00	10.00	10.00	0.02
Control/Power	4.48	2.07	4.40	0.00	10.00	10.00	0.02

Developing others	6.57	1.75	6.70	0.00	10.00	10.00	0.02
Emotional stability	5.87	2.02	6.10	0.00	10.00	10.00	0.02
Experimental	6.68	1.98	6.90	0.00	10.00	10.00	0.02
Lively	6.18	1.85	6.40	0.00	10.00	10.00	0.02
Optimism	6.66	1.63	6.70	0.30	10.00	9.70	0.02
Rational	5.62	1.95	5.80	0.00	10.60	10.60	0.02
Rule conscientious	6.01	1.76	6.10	0.00	10.00	10.00	0.02
Self-confidence	6.51	1.63	6.70	0.30	10.30	10.00	0.02
Social desirability	1.89	1.61	1.80	0.00	9.10	9.10	0.02
Surpassing	6.27	1.72	6.40	0.00	10.00	10.00	0.02
Tactical	4.75	1.90	4.70	0.00	10.00	10.00	0.02
Trust	5.7	2.23	5.80	0.00	10.00	10.00	0.02
Visionary	5.79	1.56	5.80	0.60	10.00	9.40	0.02

Table 7. Factor Score Norms based on Age Group.

Factor	Mean	SD	Median	Min	Max	Range	SE
18 - 25							
Action oriented	4.47	1.72	4.40	0.00	9.70	9.70	0.05
Adaptability	4.43	1.86	4.40	0.00	10.00	10.00	0.05
Affiliation	6.26	1.92	6.40	0.00	10.00	10.00	0.05
Assertiveness	5.14	1.89	5.00	0.00	10.00	10.00	0.05
Commitment	5.66	1.76	5.80	0.00	10.00	10.00	0.05
Conscientiousness	5.04	2.16	5.00	0.00	10.00	10.00	0.06
Control/Power	4.94	2.02	4.70	0.00	10.00	10.00	0.05

Developing others	6.08	1.86	6.10	0.00	10.00	10.00	0.05
Emotional stability	4.68	2.17	4.70	0.00	10.00	10.00	0.06
Experimental	6.04	2.38	6.10	0.00	10.00	10.00	0.06
Lively	6.43	2.07	6.70	0.00	10.00	10.00	0.05
Optimism	6.52	1.68	6.70	0.80	10.00	9.20	0.04
Rational	4.64	2.23	4.70	0.00	10.00	10.00	0.06
Rule conscientious	4.98	1.67	5.00	0.00	10.00	10.00	0.04
Self-confidence	5.54	2.04	5.80	0.00	10.00	10.00	0.05
Social desirability	1.34	1.33	0.90	0.00	8.20	8.20	0.03
Surpassing	5.8	1.82	5.80	0.30	9.70	9.40	0.05
Tactical	5.31	1.93	5.30	0.00	10.00	9.70	0.05
Trust	4.84	2.19	4.70	0.00	10.00	10.00	0.06
Visionary	5.55	1.58	5.60	1.10	9.70	8.60	0.04

Factor	Mean	SD	Median	Min	Max	Range	SE
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26 - 33

Action oriented	4.37	1.72	4.20	0.00	10.00	10.00	0.03
Adaptability	4.86	1.88	4.70	0.00	10.00	10.00	0.03
Affiliation	5.57	1.90	5.60	0.00	10.00	10.00	0.03
Assertiveness	5.13	1.70	5.00	0.00	10.00	10.00	0.03
Commitment	6.11	1.62	6.40	0.00	10.00	10.00	0.03
Conscientiousness	5.25	2.01	5.30	0.00	10.00	10.00	0.03
Control/Power	4.43	2.02	4.20	0.00	10.00	10.00	0.03
Developing others	6.59	1.77	6.70	0.00	10.00	10.00	0.03

Emotional stability	5.72	2.06	5.80	0.00	10.00	10.00	0.04
Experimental	6.58	2.00	6.70	0.00	10.00	10.00	0.03
Lively	6.31	1.88	6.40	0.30	10.00	9.70	0.03
Optimism	6.65	1.62	6.70	0.30	10.00	9.70	0.03
Rational	5.48	1.97	5.60	0.00	10.00	10.00	0.03
Rule conscientious	5.81	1.70	5.80	0.30	10.00	9.70	0.03
Self-confidence	6.36	1.70	6.70	0.30	10.00	9.70	0.03
Social desirability	1.81	1.64	1.80	0.00	10.00	10.00	0.03
Surpassing	6.18	1.73	6.40	0.30	10.00	9.70	0.03
Tactical	4.71	1.89	4.70	0.00	10.00	10.00	0.03
Trust	5.24	2.20	5.30	0.00	10.00	10.00	0.04
Visionary	5.67	1.58	5.60	0.80	10.00	9.20	0.03

Factor	Mean	SD	Median	Min	Max	Range	SE
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34 - 41

Action oriented	4.49	1.80	4.40	0.00	10.00	10.00	0.03
Adaptability	5.00	1.92	5.00	0.00	10.00	10.00	0.03
Affiliation	5.62	1.82	5.80	0.00	10.00	10.00	0.03
Assertiveness	5.34	1.70	5.30	0.00	10.00	10.00	0.03
Commitment	6.19	1.63	6.40	0.00	10.00	10.00	0.03
Conscientiousness	5.06	2.01	5.00	0.00	10.00	10.00	0.03
Control/Power	4.36	2.04	4.20	0.00	10.00	10.00	0.03
Developing others	6.61	1.72	6.70	0.00	10.00	10.00	0.03
Emotional stability	5.92	2.01	6.10	0.00	10.00	10.00	0.03

Experimental	6.58	1.98	6.70	0.00	10.00	10.00	0.03
Lively	6.26	1.83	6.40	0.00	10.00	10.00	0.03
Optimism	6.76	1.61	6.90	0.60	10.00	9.40	0.03
Rational	5.70	1.91	5.80	0.00	10.00	10.00	0.03
Rule conscientious	6.21	1.64	6.40	0.00	10.00	10.00	0.03
Self-confidence	6.53	1.62	6.70	0.60	10.00	9.40	0.03
Social desirability	1.88	1.60	1.80	0.00	9.10	9.10	0.03
Surpassing	6.21	1.74	6.40	0.00	10.00	10.00	0.03
Tactical	4.55	1.87	4.70	0.00	10.00	10.00	0.03
Trust	5.69	2.24	5.80	0.00	10.00	10.00	0.04
Visionary	5.74	1.56	5.80	0.60	10.00	9.40	0.02

Factor	Mean	SD	Median	Min	Max	Range	SE
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42 - 49

Action oriented	4.62	1.85	4.40	0.00	10.00	10.00	0.04
Adaptability	5.18	1.98	5.00	0.00	10.00	10.00	0.04
Affiliation	5.57	1.89	5.60	0.00	10.00	10.00	0.04
Assertiveness	5.35	1.74	5.30	0.30	10.00	9.70	0.04
Commitment	6.3	1.57	6.40	0.00	9.70	9.70	0.03
Conscientiousness	4.83	1.98	4.70	0.30	10.00	9.70	0.04
Control/Power	4.43	2.11	4.20	0.00	10.00	10.00	0.04
Developing others	6.54	1.77	6.70	0.30	10.00	9.70	0.04
Emotional stability	5.89	2.03	6.10	0.00	10.00	10.00	0.04
Experimental	6.55	1.96	6.70	0.30	10.00	9.70	0.04

Lively	6.16	1.88	6.10	0.60	10.00	9.40	0.04
Optimism	6.66	1.7	6.90	0.80	10.00	9.20	0.04
Rational	5.63	1.98	5.80	0.00	10.00	10.00	0.04
Rule conscientious	6.38	1.62	6.70	0.60	10.00	9.40	0.03
Self-confidence	6.6	1.58	6.70	0.30	10.30	10.00	0.03
Social desirability	1.97	1.62	1.80	0.00	8.20	8.20	0.03
Surpassing	6.12	1.76	6.40	0.80	10.00	9.20	0.04
Tactical	4.24	1.88	4.20	0.00	10.00	10.00	0.04
Trust	6.15	2.17	6.40	0.00	10.00	10.00	0.05
Visionary	5.8	1.59	5.80	0.60	10.00	9.40	0.03

Factor	Mean	SD	Median	Min	Max	Range	SE
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50+

Action oriented	4.59	1.82	4.40	0.00	9.40	9.40	0.06
Adaptability	5.25	2.01	5.30	0.00	10.00	10.00	0.06
Affiliation	5.61	1.75	5.60	0.00	9.70	9.70	0.05
Assertiveness	5.32	1.8	5.00	0.30	10.00	9.70	0.06
Commitment	6.46	1.51	6.70	0.60	10.00	9.40	0.05
Conscientiousness	4.66	2.09	4.70	0.00	10.00	10.00	0.07
Control/Power	4.45	2.16	4.20	0.00	10.00	10.00	0.07
Developing others	6.67	1.73	6.70	0.30	10.00	9.70	0.05
Emotional stability	5.82	2.07	5.80	0.00	10.00	10.00	0.06
Experimental	6.28	1.98	6.70	0.00	10.00	10.00	0.06
Lively	6.06	1.89	6.10	0.00	10.00	10.00	0.06

Optimism	6.47	1.73	6.70	0.30	10.00	9.70	0.05
Rational	5.61	2.07	5.80	0.00	10.00	10.00	0.06
Rule conscientious	6.45	1.61	6.70	0.30	10.00	9.70	0.05
Self-confidence	6.56	1.62	6.70	0.60	10.00	9.40	0.05
Social desirability	1.85	1.6	1.80	0.00	9.10	9.10	0.05
Surpassing	5.86	1.79	5.80	0.30	10.00	9.70	0.06
Tactical	4.03	1.88	3.90	0.00	8.60	8.60	0.06
Trust	6.19	2.21	6.40	0.30	10.00	9.70	0.07
Visionary	5.74	1.65	5.80	0.60	10.00	9.40	0.05

Table 8. Factor Score Norms based on Country of Origin.

Factor	Mean	SD	Median	Min	Max	Range	SE
India							
Action oriented	4.34	1.79	4.20	0.00	10.00	10.00	0.02
Adaptability	4.81	1.89	4.70	0.00	10.00	10.00	0.03
Affiliation	5.62	1.84	5.70	0.00	10.00	10.00	0.03
Assertiveness	5.05	1.65	5.00	0.00	10.00	10.00	0.02
Commitment	6.09	1.59	6.10	0.00	10.00	10.00	0.02
Conscientiousness	5.13	1.93	5.00	0.00	10.00	10.00	0.03
Control/Power	4.12	1.98	3.90	0.00	10.00	10.00	0.03
Developing others	6.44	1.73	6.40	0.00	10.00	10.00	0.02
Emotional stability	5.81	2.09	5.80	0.00	10.00	10.00	0.03
Experimental	6.88	1.9	6.90	0.00	10.00	10.00	0.03
Lively	6.35	1.79	6.40	0.00	10.00	10.00	0.02
Optimism	6.69	1.61	6.90	0.80	10.00	9.20	0.02

Rational	5.44	1.92	5.60	0.00	10.00	10.00	0.03
Rule conscientious	6.03	1.73	6.10	0.30	10.00	9.70	0.02
Self-confidence	6.49	1.64	6.70	0.00	10.00	10.00	0.02
Social desirability	1.88	1.61	1.80	0.00	9.10	9.10	0.02
Surpassing	6.22	1.77	6.40	0.00	10.00	10.00	0.02
Tactical	4.63	1.91	4.70	0.00	10.00	10.00	0.03
Trust	5.99	2.17	6.10	0.00	10.00	10.00	0.03
Visionary	5.48	1.5	5.60	0.60	10.00	9.40	0.02

Factor	Mean	SD	Median	Min	Max	Range	SE
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United Arab Emirates

Action oriented	4.20	1.77	4.20	0.00	10.00	10.00	0.05
Adaptability	4.96	1.89	5.00	0.30	10.00	9.70	0.06
Affiliation	5.36	1.82	5.30	0.00	10.00	10.00	0.05
Assertiveness	5.5	1.81	5.30	0.30	10.00	9.70	0.05
Commitment	6.08	1.56	6.40	0.00	9.40	9.40	0.05
Conscientiousness	5.25	2.00	5.30	0.00	10.00	10.00	0.06
Control/Power	4.52	2.04	4.40	0.00	10.00	10.00	0.06
Developing others	6.51	1.79	6.70	0.60	10.00	9.40	0.05
Emotional stability	6.18	1.98	6.40	0.30	10.00	9.70	0.06
Experimental	6.29	1.97	6.40	0.30	10.00	9.70	0.06
Lively	6.41	1.73	6.40	0.60	10.00	9.40	0.05
Optimism	6.77	1.60	6.90	0.80	10.00	9.20	0.05
Rational	5.83	1.99	5.95	0.00	10.00	10.00	0.06
Rule conscientious	6.34	1.60	6.40	0.80	10.00	9.20	0.05

Self-confidence	6.88	1.53	6.90	1.40	10.30	8.90	0.04
Social desirability	2.11	1.71	1.80	0.00	8.20	8.20	0.05
Surpassing	6.00	1.77	6.10	0.60	10.00	9.40	0.05
Tactical	4.64	1.93	4.70	0.00	10.00	10.00	0.06
Trust	5.58	2.11	5.60	0.00	10.00	10.00	0.06
Visionary	5.56	1.61	5.60	0.60	10.00	9.40	0.05

Factor	Mean	SD	Median	Min	Max	Range	SE
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Mauritius

Action oriented	4.58	1.72	4.40	0.30	9.20	8.90	0.05
Adaptability	5.14	1.88	5.00	0.60	9.70	9.10	0.06
Affiliation	5.26	1.95	5.30	0.30	10.00	9.70	0.06
Assertiveness	5.55	1.78	5.60	0.30	10.00	9.70	0.06
Commitment	5.95	1.61	6.10	0.00	9.40	9.40	0.05
Conscientiousness	5.43	2.08	5.60	0.30	10.00	9.70	0.07
Control/Power	4.96	2.17	4.70	0.00	10.00	10.00	0.07
Developing others	6.7	1.74	6.70	1.10	10.00	8.90	0.06
Emotional stability	5.67	1.99	5.80	0.00	10.00	10.00	0.06
Experimental	6.11	1.98	6.10	0.30	10.00	9.70	0.06
Lively	6.18	1.98	6.10	0.80	10.00	9.20	0.06
Optimism	6.59	1.64	6.70	1.40	10.00	8.60	0.05
Rational	5.5	2.08	5.80	0.30	10.00	9.70	0.07
Rule conscientious	6.03	1.62	6.10	0.60	10.00	9.40	0.05
Self-confidence	6.47	1.66	6.70	0.80	9.70	8.90	0.05
Social desirability	1.77	1.63	1.80	0.00	9.10	9.10	0.05

Surpassing	6.05	1.77	6.10	1.10	10.00	8.90	0.06
Tactical	3.96	1.93	3.90	0.00	10.00	10.00	0.06
Trust	4.79	2.17	4.70	0.00	10.00	10.00	0.07
Visionary	5.69	1.59	5.60	1.10	10.00	8.90	0.05

Factor	Mean	SD	Median	Min	Max	Range	SE
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France

Action oriented	4.74	1.78	4.70	0.30	9.70	9.40	0.07
Adaptability	4.60	2.04	4.40	0.30	10.00	9.70	0.07
Affiliation	6.57	1.99	6.80	0.60	10.00	9.40	0.07
Assertiveness	5.36	1.98	5.30	0.30	9.70	9.40	0.07
Commitment	5.41	1.97	5.60	0.00	9.40	9.40	0.07
Conscientiousness	4.64	2.30	4.40	0.00	10.00	10.00	0.08
Control/Power	4.98	2.12	5.00	0.30	10.00	9.70	0.08
Developing others	5.84	1.86	5.80	0.30	10.00	9.70	0.07
Emotional stability	4.30	2.13	4.20	0.00	10.00	10.00	0.08
Experimental	5.30	2.48	5.30	0.00	10.00	10.00	0.09
Lively	6.33	2.30	6.70	0.00	10.00	10.00	0.08
Optimism	6.61	1.73	6.70	0.60	10.00	9.40	0.06
Rational	4.62	2.44	4.70	0.00	10.00	10.00	0.09
Rule conscientious	4.86	1.61	5.00	0.30	10.00	9.70	0.06
Self-confidence	5.20	2.10	5.30	0.00	10.00	10.00	0.08
Social desirability	1.16	1.25	0.90	0.00	8.20	8.20	0.05
Surpassing	5.71	1.81	5.80	0.60	9.70	9.10	0.07
Tactical	5.26	2.03	5.30	0.00	10.00	10.00	0.07

Trust	4.98	2.28	5.30	0.00	10.00	10.00	0.08
Visionary	5.51	1.65	5.60	1.10	9.40	8.30	0.06

Factor	Mean	SD	Median	Min	Max	Range	SE
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Uganda

Action oriented	4.84	1.76	4.70	0.00	10.00	10.00	0.07
Adaptability	5.51	1.8	5.60	0.30	10.00	9.70	0.07
Affiliation	6.18	1.52	6.40	1.70	10.00	8.30	0.06
Assertiveness	5.24	1.46	5.30	1.10	10.00	8.90	0.05
Commitment	6.8	1.32	6.90	1.40	9.70	8.30	0.05
Conscientiousness	5.15	1.87	5.00	0.30	10.00	9.70	0.07
Control/Power	5.01	2.06	5.00	0.00	10.00	10.00	0.08
Developing others	7.46	1.54	7.80	0.80	10.00	9.20	0.06
Emotional stability	5.94	1.91	6.10	0.60	10.00	9.40	0.07
Experimental	6.82	1.80	6.70	1.40	10.00	8.60	0.07
Lively	5.93	1.78	5.80	1.40	10.00	8.60	0.07
Optimism	6.58	1.75	6.70	0.80	10.00	9.20	0.06
Rational	5.36	1.7	5.30	0.00	10.00	10.00	0.06
Rule conscientious	6.54	1.5	6.70	1.70	10.00	8.30	0.06
Self-confidence	6.28	1.41	6.40	2.20	9.70	7.50	0.05
Social desirability	2.12	1.60	1.80	0.00	7.30	7.30	0.06
Surpassing	6.35	1.55	6.40	1.90	10.00	8.10	0.06
Tactical	4.24	1.73	4.20	0.00	9.40	9.40	0.06
Trust	4.49	2.3	4.20	0.00	10.00	10.00	0.09
Visionary	6.34	1.47	6.10	2.20	10.00	7.80	0.05

Factor	Mean	SD	Median	Min	Max	Range	SE
<i>Kenya</i>							
Action oriented	4.75	1.86	5.00	0.00	9.40	9.40	0.11
Adaptability	4.90	2.37	5.00	0.00	10.00	10.00	0.13
Affiliation	5.23	1.82	5.30	0.00	9.70	9.70	0.10
Assertiveness	5.00	1.84	5.00	0.00	10.00	10.00	0.10
Commitment	6.35	1.69	6.70	0.00	10.00	10.00	0.10
Conscientiousness	5.14	2.20	5.30	0.00	10.00	10.00	0.12
Control/Power	4.33	2.27	3.90	0.00	10.00	10.00	0.13
Developing others	6.97	1.78	7.20	1.70	10.00	8.30	0.10
Emotional stability	5.13	2.20	5.30	0.30	10.00	9.70	0.13
Experimental	6.01	2.14	6.10	0.00	10.00	10.00	0.12
Lively	5.82	2.22	6.10	0.00	10.00	10.00	0.13
Optimism	5.95	1.90	6.10	0.30	9.40	9.10	0.11
Rational	5.57	1.96	5.80	0.30	10.00	9.70	0.11
Rule conscientious	6.15	1.61	6.40	0.30	10.00	9.70	0.09
Self-confidence	5.90	1.88	6.10	0.60	10.00	9.40	0.11
Social desirability	1.67	1.46	1.80	0.00	7.30	7.30	0.08
Surpassing	5.88	1.75	6.10	0.60	10.00	9.40	0.10
Tactical	4.07	1.97	3.90	0.00	9.70	9.70	0.11
Trust	5.3	2.36	5.30	0.00	10.00	10.00	0.13
Visionary	6.29	1.69	6.40	1.40	10.00	8.60	0.10
Factor	Mean	SD	Median	Min	Max	Range	SE

Syria

Action oriented	4.40	1.62	4.40	0.00	9.40	9.40	0.09
Adaptability	4.93	1.66	5.00	0.00	9.20	9.20	0.10
Affiliation	5.23	1.79	5.30	0.00	9.40	9.40	0.10
Assertiveness	5.70	1.65	5.80	1.10	9.70	8.60	0.10
Commitment	6.75	1.47	6.90	0.30	9.70	9.40	0.08
Conscientiousness	5.32	1.87	5.30	0.80	9.70	8.90	0.11
Control/Power	4.80	2.02	4.70	0.30	9.70	9.40	0.12
Developing others	6.32	1.72	6.70	1.40	9.40	8.00	0.10
Emotional stability	5.04	1.93	5.00	0.30	9.20	8.90	0.11
Experimental	5.92	1.94	6.10	0.60	10.00	9.40	0.11
Lively	6.98	1.86	7.20	0.60	10.00	9.40	0.11
Optimism	6.67	1.60	6.90	2.20	9.70	7.50	0.09
Rational	6.72	1.93	7.05	0.60	10.60	10.00	0.11
Rule conscientious	5.87	1.65	5.80	0.60	10.00	9.40	0.10
Self-confidence	6.14	1.64	6.40	0.30	9.40	9.10	0.09
Social desirability	1.59	1.47	0.90	0.00	8.20	8.20	0.09
Surpassing	6.32	1.76	6.70	1.40	9.70	8.30	0.10
Tactical	4.81	1.65	4.85	0.30	9.40	9.10	0.10
Trust	4.66	2.07	4.40	0.80	10.00	9.20	0.12
Visionary	5.78	1.50	5.80	1.90	9.20	7.30	0.09

Factor**Mean****SD****Median****Min****Max****Range****SE**

Nigeria

Action oriented	4.70	1.63	4.70	1.40	8.90	7.50	0.10
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Adaptability	5.01	1.87	5.00	0.30	9.20	8.90	0.11
Affiliation	5.88	1.72	6.10	0.30	10.00	9.70	0.10
Assertiveness	4.95	1.69	4.70	0.00	9.40	9.40	0.10
Commitment	6.72	1.30	6.90	0.00	10.00	10.00	0.08
Conscientiousness	5.73	2.07	6.10	0.60	10.00	9.40	0.12
Control/Power	4.26	1.67	4.20	0.60	8.60	8.00	0.10
Developing others	6.68	1.79	6.90	1.70	10.00	8.30	0.11
Emotional stability	5.70	1.91	5.80	0.30	9.70	9.40	0.11
Experimental	6.94	1.89	7.20	1.70	10.00	8.30	0.11
Lively	6.07	1.84	6.10	0.60	10.00	9.40	0.11
Optimism	7.05	1.50	7.20	1.90	10.00	8.10	0.09
Rational	5.33	1.83	5.60	0.30	9.70	9.40	0.11
Rule conscientious	5.97	1.55	6.10	0.60	10.00	9.40	0.09
Self-confidence	5.96	1.66	6.10	0.80	9.70	8.90	0.10
Social desirability	1.96	1.63	1.80	0.00	8.20	8.20	0.10
Surpassing	6.51	1.51	6.70	2.50	9.40	6.90	0.09
Tactical	4.96	1.77	5.00	0.00	10.00	10.00	0.10
Trust	5.49	2.31	5.30	0.00	10.00	10.00	0.14
Visionary	6.46	1.36	6.70	2.20	10.00	7.80	0.08

Factor	Mean	SD	Median	Min	Max	Range	SE
<i>Mongolia</i>							
Action oriented	3.94	1.64	3.60	0.00	8.60	8.60	0.12
Adaptability	3.89	1.71	3.90	0.00	9.20	9.20	0.13
Affiliation	5.98	1.61	5.80	1.10	9.70	8.60	0.12

Assertiveness	4.87	1.72	5.00	0.00	10.00	10.00	0.13
Commitment	6.19	1.58	6.10	0.80	9.70	8.90	0.12
Conscientiousness	4.94	2.02	5.00	0.80	10.00	9.20	0.15
Control/Power	4.88	1.95	4.70	0.00	9.40	9.40	0.14
Developing others	5.98	1.62	6.10	1.70	9.70	8.00	0.12
Emotional stability	5.81	1.91	6.10	1.10	10.00	8.90	0.14
Experimental	6.40	2.04	6.40	1.10	10.00	8.90	0.15
Lively	5.48	2.07	5.60	0.30	9.70	9.40	0.15
Optimism	6.50	1.45	6.40	2.50	10.00	7.50	0.11
Rational	6.19	2.06	6.70	0.00	10.00	10.00	0.15
Rule conscientious	5.20	1.81	5.60	0.00	9.20	9.20	0.13
Self-confidence	5.75	1.47	5.80	0.80	9.70	8.90	0.11
Social desirability	1.98	1.49	1.80	0.00	7.30	7.30	0.11
Surpassing	5.77	1.75	6.10	0.60	9.20	8.60	0.13
Tactical	5.29	1.65	5.30	1.10	8.60	7.50	0.12
Trust	5.33	1.8	5.60	0.60	10.00	9.40	0.13
Visionary	6.20	1.63	6.40	1.70	10.00	8.30	0.12

Factor	Mean	SD	Median	Min	Max	Range	SE
Others							
Action oriented	4.70	1.76	4.70	0.00	10.00	10.00	0.04
Adaptability	5.11	2.00	5.00	0.00	10.00	10.00	0.04
Affiliation	5.73	1.89	5.80	0.00	10.00	10.00	0.04
Assertiveness	5.48	1.82	5.30	0.00	10.00	10.00	0.04
Commitment	6.23	1.68	6.40	0.00	10.00	10.00	0.03

Conscientiousness	4.53	2.1	4.40	0.00	10.00	10.00	0.04
Control/Power	4.69	2.08	4.40	0.00	10.00	10.00	0.04
Developing others	6.57	1.78	6.70	0.30	10.00	9.70	0.04
Emotional stability	5.71	2.07	5.80	0.00	10.00	10.00	0.04
Experimental	6.20	2.1	6.40	0.00	10.00	10.00	0.04
Lively	6.14	1.93	6.40	0.60	10.00	9.40	0.04
Optimism	6.65	1.69	6.90	0.30	10.00	9.70	0.03
Rational	5.55	2.07	5.80	0.00	10.00	10.00	0.04
Rule conscientious	5.97	1.73	6.10	0.00	10.00	10.00	0.03
Self-confidence	6.40	1.81	6.70	0.30	10.00	9.70	0.04
Social desirability	1.63	1.51	0.90	0.00	10.00	10.00	0.03
Surpassing	5.91	1.78	6.10	0.30	9.70	9.40	0.04
Tactical	4.58	1.89	4.40	0.00	10.00	10.00	0.04
Trust	5.73	2.24	6.10	0.00	10.00	10.00	0.04
Visionary	5.94	1.63	6.10	0.80	10.00	9.20	0.03

Table 9. Factor Score Norms based on Study Level.

Factor	Mean	SD	Median	Min	Max	Range	SE
Level 1: Master's Degree, PhD, Engineering or Business School, MBA							
Action oriented	4.61	1.80	4.40	0.00	10.00	10.00	0.03
Adaptability	5.09	1.97	5.00	0.00	10.00	10.00	0.03
Affiliation	5.72	1.91	5.80	0.00	10.00	10.00	0.03
Assertiveness	5.33	1.76	5.30	0.00	10.00	10.00	0.02
Commitment	6.13	1.66	6.40	0.00	10.00	10.00	0.02
Conscientiousness	4.87	2.06	4.70	0.00	10.00	10.00	0.03
Control/Power	4.33	2.05	4.20	0.00	10.00	10.00	0.03

Developing others	6.41	1.78	6.40	0.00	10.00	10.00	0.02
Emotional stability	5.7	2.11	5.80	0.00	10.00	10.00	0.03
Experimental	6.59	2.05	6.70	0.00	10.00	10.00	0.03
Lively	6.28	1.90	6.40	0.00	10.00	10.00	0.03
Optimism	6.73	1.64	6.90	0.30	10.00	9.70	0.02
Rational	5.54	2.02	5.80	0.00	10.00	10.00	0.03
Rule conscientious	6.00	1.75	6.10	0.00	10.00	10.00	0.02
Self-confidence	6.44	1.73	6.70	0.30	10.00	9.70	0.02
Social desirability	1.73	1.54	1.80	0.00	8.20	8.20	0.02
Surpassing	6.25	1.73	6.40	0.30	10.00	9.70	0.02
Tactical	4.57	1.92	4.70	0.00	10.00	10.00	0.03
Trust	5.84	2.26	6.10	0.00	10.00	10.00	0.03
Visionary	5.83	1.59	5.80	0.60	10.00	9.40	0.02

Factor	Mean	SD	Median	Min	Max	Range	SE
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Level 2: Bachelor's Degree, First-year Masters

Action oriented	4.46	1.77	4.40	0.00	10.00	10.00	0.03
Adaptability	4.88	1.90	5.00	0.00	10.00	10.00	0.03
Affiliation	5.68	1.85	5.80	0.00	10.00	10.00	0.03
Assertiveness	5.23	1.71	5.00	0.00	10.00	10.00	0.03
Commitment	6.20	1.62	6.40	0.00	10.00	10.00	0.02
Conscientiousness	5.16	2.00	5.00	0.00	10.00	10.00	0.03
Control/Power	4.59	2.06	4.40	0.00	10.00	10.00	0.03
Developing others	6.62	1.75	6.70	0.00	10.00	10.00	0.03
Emotional stability	5.74	2.07	5.80	0.00	10.00	10.00	0.03
Experimental	6.51	2.03	6.70	0.00	10.00	10.00	0.03
Lively	6.26	1.87	6.40	0.00	10.00	10.00	0.03
Optimism	6.67	1.65	6.70	0.30	10.00	9.70	0.03

Rational	5.51	1.98	5.60	0.00	10.00	10.00	0.03
Rule conscientious	6.02	1.69	6.10	0.30	10.00	9.70	0.03
Self-confidence	6.37	1.69	6.70	0.00	10.30	10.30	0.03
Social desirability	1.87	1.63	1.80	0.00	10.00	10.00	0.02
Surpassing	6.08	1.76	6.10	0.00	10.00	10.00	0.03
Tactical	4.65	1.88	4.70	0.00	10.00	10.00	0.03
Trust	5.38	2.23	5.30	0.00	10.00	10.00	0.03
Visionary	5.71	1.56	5.80	0.60	10.00	9.40	0.02

Factor	Mean	SD	Median	Min	Max	Range	SE
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Level 3: 2 years of Vocational or University Studies

Action oriented	4.29	1.77	4.20	0.00	8.60	8.60	0.08
Adaptability	4.86	1.90	4.70	0.30	10.00	9.70	0.09
Affiliation	5.52	1.79	5.60	0.00	9.70	9.70	0.08
Assertiveness	5.39	1.78	5.30	0.30	10.00	9.70	0.08
Commitment	6.33	1.50	6.40	1.70	10.00	8.30	0.07
Conscientiousness	5.21	2.08	5.00	0.30	10.00	9.70	0.09
Control/Power	4.86	2.25	4.70	0.00	10.00	10.00	0.10
Developing others	6.82	1.67	6.90	1.70	10.00	8.30	0.08
Emotional stability	5.75	2.06	5.95	0.30	10.00	9.70	0.09
Experimental	6.08	1.92	6.10	0.00	10.00	10.00	0.09
Lively	6.20	1.92	6.10	1.10	10.00	8.90	0.09
Optimism	6.49	1.62	6.70	0.80	9.70	8.90	0.07
Rational	5.45	2.18	5.80	0.30	10.00	9.70	0.10
Rule conscientious	6.06	1.63	6.10	0.00	10.00	10.00	0.07
Self-confidence	6.26	1.72	6.40	0.80	9.70	8.90	0.08
Social desirability	1.87	1.65	1.80	0.00	8.20	8.20	0.07
Surpassing	5.82	1.74	5.80	0.80	9.70	8.90	0.08

Tactical	4.48	1.98	4.40	0.00	9.70	9.70	0.09
Trust	5.22	2.24	5.30	0.30	9.70	9.40	0.10
Visionary	5.53	1.57	5.60	1.10	10.00	8.90	0.07

Factor	Mean	SD	Median	Min	Max	Range	SE
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Level 4: High School Diploma

Action oriented	4.21	1.68	4.20	0.00	8.60	8.60	0.07
Adaptability	4.60	1.88	4.40	0.00	9.40	9.40	0.08
Affiliation	5.49	1.71	5.60	0.80	9.70	8.90	0.07
Assertiveness	5.11	1.68	5.00	1.10	9.20	8.10	0.07
Commitment	6.15	1.49	6.10	0.60	9.40	8.80	0.06
Conscientiousness	5.49	1.94	5.60	0.30	9.70	9.40	0.08
Control/Power	5.03	2.06	5.00	0.00	10.00	10.00	0.09
Developing others	6.76	1.69	6.90	1.90	10.00	8.10	0.07
Emotional stability	5.72	2.00	5.80	0.30	10.00	9.70	0.08
Experimental	6.09	1.97	6.10	0.30	10.00	9.70	0.08
Lively	6.31	1.78	6.40	1.10	10.00	8.90	0.08
Optimism	6.53	1.64	6.70	0.80	10.00	9.20	0.07
Rational	5.14	1.98	5.00	0.00	10.00	10.00	0.08
Rule conscientious	5.91	1.61	5.80	1.70	10.00	8.30	0.07
Self-confidence	6.28	1.74	6.40	0.80	10.00	9.20	0.07
Social desirability	2.02	1.63	1.80	0.00	9.10	9.10	0.07
Surpassing	5.71	1.79	5.80	1.40	9.70	8.30	0.08
Tactical	4.72	2.08	4.70	0.00	10.00	10.00	0.09
Trust	5.11	2.07	5.00	0.00	10.00	10.00	0.09
Visionary	5.31	1.49	5.30	0.60	10.00	9.40	0.06

Factor	Mean	SD	Median	Min	Max	Range	SE
Level 5: Trades Training, No High School Diploma							
Action oriented	4.97	1.85	5.30	0.60	9.40	8.80	0.17
Adaptability	4.61	1.70	4.70	0.80	9.20	8.40	0.16
Affiliation	5.42	1.92	5.60	0.60	9.70	9.10	0.18
Assertiveness	4.91	1.67	4.70	0.80	9.70	8.90	0.15
Commitment	6.12	1.69	6.40	1.90	9.20	7.30	0.15
Conscientiousness	5.19	1.97	5.30	0.60	9.20	8.60	0.18
Control/Power	5.09	2.01	5.00	0.80	9.20	8.40	0.18
Developing others	6.72	1.84	6.90	1.90	9.70	7.80	0.17
Emotional stability	5.23	1.90	5.30	0.60	10.00	9.40	0.17
Experimental	5.89	2.15	6.10	0.80	10.00	9.20	0.20
Lively	6.17	1.83	6.40	1.70	9.70	8.00	0.17
Optimism	6.42	1.61	6.40	1.90	9.70	7.80	0.15
Rational	5.34	1.95	5.60	0.80	9.70	8.90	0.18
Rule conscientious	5.26	1.67	5.30	1.90	9.40	7.50	0.15
Self-confidence	5.80	1.73	5.80	0.60	9.70	9.10	0.16
Social desirability	1.88	1.55	1.80	0.00	6.40	6.40	0.14
Surpassing	5.30	1.87	5.60	0.30	9.40	9.10	0.17
Tactical	4.96	1.89	5.00	0.00	8.90	8.90	0.17
Trust	4.92	2.05	5.00	1.10	10.00	8.90	0.19
Visionary	5.41	1.45	5.30	2.20	9.40	7.20	0.13

Factor	Mean	SD	Median	Min	Max	Range	SE
Level 6: Students							
Action oriented	4.65	1.86	4.40	0.80	9.70	8.90	0.15
Adaptability	4.68	1.87	4.70	0.00	9.70	9.70	0.15
Affiliation	6.29	1.72	6.40	1.40	9.70	8.30	0.14

Assertiveness	5.27	1.77	5.00	1.40	9.40	8.00	0.14
Commitment	5.55	1.85	5.70	0.30	9.20	8.90	0.15
Conscientiousness	4.86	2.14	5.00	0.00	10.00	10.00	0.17
Control/Power	5.08	2.14	5.00	0.30	9.70	9.40	0.17
Developing others	5.99	1.93	6.25	0.00	9.70	9.70	0.15
Emotional stability	4.38	2.24	4.40	0.00	9.40	9.40	0.18
Experimental	6.00	2.26	6.10	1.40	10.00	8.60	0.18
Lively	6.58	2.24	6.90	1.10	10.00	8.90	0.18
Optimism	6.36	1.81	6.70	0.80	9.70	8.90	0.15
Rational	4.52	2.15	4.40	0.00	9.40	9.40	0.17
Rule conscientious	4.87	1.64	5.00	0.80	9.70	8.90	0.13
Self-confidence	5.65	2.06	5.80	0.80	10.00	9.20	0.16
Social desirability	1.34	1.15	0.90	0.00	4.50	4.50	0.09
Surpassing	5.64	1.86	5.60	1.10	9.40	8.30	0.15
Tactical	5.03	1.93	5.00	0.00	10.00	10.00	0.15
Trust	5.00	2.25	5.00	0.00	9.70	9.70	0.18
Visionary	5.61	1.70	5.60	1.40	9.40	8.00	0.14

3.4. Reliability

Reliability refers to the extent to which an assessment is free from error and the degree to which items on a scale are measuring the same construct. For a measure to be reliable, the same results must be consistently generated over time. Reliability is important for an assessment as it enables us to have confidence that scores on a test are really typical of an individual's behaviour, aptitude or attitude. A primary concern when developing and using tests, is the extent to which random measurement errors influence test performance. If a test is unreliable, it is impossible for it to be valid as accuracy of results (validity) depends on the consistency with which the same results are produced. High reliability of an assessment helps to guard against biases that may be caused by errors in human judgment during the recruitment and selection process.

Internal consistency is measured using Cronbach's coefficient alpha. High values of Cronbach's coefficient alpha indicate a greater degree of consistency in scores, and generally more homogeneous scale content.

Given below is a table showing the internal reliability of the 20 factors of the **CTPI-R**. The average reliability coefficient for the test is 0.59.

Table 10. Cronbach's alpha internal reliability coefficients.

Factor	Cronbach's alpha
Action oriented	0.56
Adaptability	0.63
Affiliation	0.60
Assertiveness	0.50
Commitment	0.46
Conscientiousness	0.65
Control/Power	0.68
Developing others	0.61
Emotional stability	0.65
Experimental	0.77
Lively	0.60
Optimism	0.52
Rational	0.67
Rule conscientious	0.48
Self-confidence	0.54
Social desirability	0.56
Surpassing	0.57
Tactical	0.61
Trust	0.71
Visionary	0.45

3.5. Validity

Validity refers to the extent to which an assessment measures what it claims to measure, and that this is well-founded and accurately corresponds to actual behaviour. In psychometrics, validity relates to the degree to which practical evidence and scientific theory support the interpretations of test scores. Whilst the reliability of an assessment relates to the degree to which results are consistent over time, validity tells us the degree to which results of an assessment are accurate and enable us to confidently make predictions about a target outcome. Therefore, a test can be reliable but not valid (one can consistently get the wrong answer) but it cannot be valid without being reliable, as confidence in the accuracy of results depends on the consistency with which we obtain the same results. Established validity protects practitioners from faulty, costly, unethical and legally risky decisions.

Construct validity measures the degree of the appropriateness of inferences made on the basis of observation or measurement. For work-based assessments, construct validity is particularly important as it: a) adds legitimacy and acceptability to the standardised measurement of employee behaviours, b) facilitates understanding of organisational implications of findings, and c) enables organisations and individuals to tailor interventions to meet desired performance targets. For **CTPI-R**, construct validity was established using inter-factor correlation as can be seen in Table 11.

The correlation coefficient is a numerical way to quantify the relationship between the variables, and ranges between -1 and 1. The closer the value to 1, the stronger the relationship. The correlation coefficient does not imply causality; it merely signifies the association between variables. Traditionally, factor correlations are measured using Pearson (1895) correlation.

<i>Table 11.</i>	ACT	ADA	AFF	ASS	COM	CON	POW	DEV	EMO	EXP	LIV	OPT	RAT	RUL	SCO	SD	SUR	TAC	TRU	VIS
ACT	1.00	0.16	0.12	0.08	0.08	-0.20	0.11	0.05	-0.07	0.22	0.11	0.12	-0.12	-0.22	0.08	0.00	0.23	0.14	0.07	0.28
ADA	0.16	1.00	0.00	0.23	0.14	-0.16	-0.23	-0.02	0.38	0.25	0.11	0.08	0.01	0.11	0.31	0.15	0.23	-0.17	0.19	0.15
AFF	0.12	0.00	1.00	-0.03	0.09	0.02	0.07	0.23	-0.02	0.13	0.31	0.14	-0.12	-0.09	-0.05	0.06	0.1	0.16	0.13	0.12
ASS	0.08	0.23	-0.03	1.00	-0.01	-0.11	0.09	-0.12	0.07	0.07	0.09	0.08	0.06	0.03	0.26	0.05	0.14	-0.02	0.00	0.08
COM	0.08	0.14	0.09	-0.01	1.00	0.09	0.06	0.14	0.09	0.10	0.02	0.06	0.07	0.06	0.03	0.06	0.17	0.02	0.05	0.11
CON	-0.20	-0.16	0.02	-0.11	0.09	1.00	0.19	0.16	0.01	0.07	-0.03	0.05	0.10	0.09	-0.05	0.22	0.13	0.05	-0.15	-0.01
POW	0.11	-0.23	0.07	0.09	0.06	0.19	1.00	-0.01	-0.22	0.02	-0.03	0.07	0.02	-0.17	-0.07	0.08	0.10	0.33	-0.31	0.12
DEV	0.05	-0.02	0.23	-0.12	0.14	0.16	-0.01	1.00	0.03	0.14	0.13	0.07	-0.02	0.08	-0.02	0.10	0.11	-0.03	0.08	0.11
EMO	-0.07	0.38	-0.02	0.07	0.09	0.01	-0.22	0.03	1.00	0.10	0.04	0.16	0.18	0.24	0.41	0.24	0.13	-0.15	0.18	0.00
EXP	0.22	0.25	0.13	0.07	0.10	0.07	0.02	0.14	0.10	1.00	0.22	0.24	-0.05	-0.06	0.22	0.21	0.45	0.09	0.08	0.36
LIV	0.11	0.11	0.31	0.09	0.02	-0.03	-0.03	0.13	0.04	0.22	1.00	0.24	-0.10	-0.05	0.13	0.03	0.15	0.04	0.17	0.06
OPT	0.12	0.08	0.14	0.08	0.06	0.05	0.07	0.07	0.16	0.24	0.24	1.00	0.01	0.00	0.22	0.16	0.27	0.11	0.12	0.16
RAT	-0.12	0.01	-0.12	0.06	0.07	0.10	0.02	-0.02	0.18	-0.05	-0.10	0.01	1.00	0.16	0.10	0.10	0.07	-0.03	-0.03	-0.04
RUL	-0.22	0.11	-0.09	0.03	0.06	0.09	-0.17	0.08	0.24	-0.06	-0.05	0.00	0.16	1.00	0.12	0.11	-0.01	-0.35	0.14	-0.12
SCO	0.08	0.31	-0.05	0.26	0.03	-0.05	-0.07	-0.02	0.41	0.22	0.13	0.22	0.10	0.12	1.00	0.19	0.25	-0.1	0.15	0.08

SD	0.00	0.15	0.06	0.05	0.06	0.22	0.08	0.10	0.24	0.21	0.03	0.16	0.10	0.11	0.19	1.00	0.22	0.02	0.04	0.09
SUR	0.23	0.23	0.10	0.14	0.17	0.13	0.10	0.11	0.13	0.45	0.15	0.27	0.07	-0.01	0.25	0.22	1.00	0.11	0.03	0.32
TAC	0.14	-0.17	0.16	-0.02	0.02	0.05	0.33	-0.03	-0.15	0.09	0.04	0.11	-0.03	-0.35	-0.1	0.02	0.11	1.00	-0.2	0.14
TRU	0.07	0.19	0.13	0.00	0.05	-0.15	-0.31	0.08	0.18	0.08	0.17	0.12	-0.03	0.14	0.15	0.04	0.03	-0.20	1.00	0.01
VIS	0.28	0.15	0.12	0.08	0.11	-0.01	0.12	0.11	0.00	0.36	0.06	0.16	-0.04	-0.12	0.08	0.09	0.32	0.14	0.01	1.00

- Action oriented - ACT
- Adaptability - ADA
- Affiliation - AFF
- Assertiveness - ASS
- Commitment - COM
- Conscientiousness - CON
- Control/Power - POW
- Developing others - DEV
- Emotional stability - EMO
- Experimental - EXP
- Lively - LIV
- Optimism - OPT
- Rational - RAT
- Rule Conscientious - RUL
- Self-confidence - SCO
- Social desirability - SD
- Surpassing - SUR
- Tactical - TAC
- Trust - TRU
- Visionary - VIS

3.6. CTPI-R and Equal Opportunities

Organisations are increasingly under pressure to ensure that tools used to inform employee recruitment, selection, development, promotion and performance measurement decisions are fair, objective and accurate. This pressure stems from a progressively knowledgeable applicant pool, a more sophisticated labour force and stringent local and international employment legislation and testing standards. Equal opportunities therefore represent a critical consideration for any modern-day work assessment, and an assessment is only considered to be truly valid when it is appropriate for use with different groups. The **CTPI-R** is a fair and accurate measure of critical thinking, and HR practitioners and psychologists can be confident of its application.

Measurement Equivalence

Measurement equivalence (ME) refers to the consistency of measurement across some specified group demarcation such as nationality, ethnicity and gender. The focus of ME is to ensure that individuals from different groups with the same standing on an attribute have the same set of observations on an assessment (Drasgow, 1987; McLeary & Cruise, 2012). ME helps to determine the extent to which respondents are interpreting items similarly, and identified differences across groups reflect actual differences in the trait being measured (Drasgow, 1987). One approach to assessing measurement equivalence is differential item functioning analysis.

T-tests and ANOVAS

Although 50 items were flagged with DIF for gender, their impact on the overall assessment is negligible, meaning that the assessment does not bias towards gender at the item level. Therefore, any significant difference in the assessment's factors can be attributed to a difference in groups from the population from which the sample was drawn, rather than biases of the assessment. To further explore the differences found between the groups, an independent sample t-test was performed between the groups; t-tests and ANOVAS were performed between genders and age groups (see tables 12 to 15).

Gender

In order to check for differences in scores between genders, an independent sample t-test was conducted to compare all the **CTPI-R** factors between females (n = 3691) and males (n = 8593).

Table 12. T-tests for Factors by Gender.

Factor	Female	Male	T	df.	P
Action oriented	4.38	4.53	-4.51	7195.61	0.00
Adaptability	4.83	4.99	-4.14	6873.35	0.00
Affiliation	5.44	5.77	-8.53	6625.50	0.00
Assertiveness	5.30	5.24	1.60	6680.98	0.11
Commitment	5.90	6.26	-10.90	6586.46	0.00

Conscientiousness	5.08	5.02	1.58	6717.29	0.12
Control/Power	4.46	4.48	-0.65	7078.53	0.51
Developing others	6.44	6.57	-3.90	6770.44	0.00
Emotional stability	5.29	5.87	-13.84	6535.15	0.00
Experimental	6.01	6.68	-16.28	6559.48	0.00
Lively	6.43	6.18	6.46	6552.8	0.00
Optimism	6.66	6.66	-0.02	6723.81	0.99
Rational	5.21	5.62	-9.92	6405.91	0.00
Rule conscientious	5.98	6.01	-1.11	7561.11	0.27
Self-confidence	6.06	6.51	-12.66	6168.83	0.00
Social desirability	1.61	1.89	-9.13	7323.21	0.00
Surpassing	5.72	6.27	-15.68	6695.17	0.00
Tactical	4.21	4.75	-14.35	6924.37	0.00
Trust	5.32	5.70	-8.73	6911.9	0.00
Visionary	5.52	5.79	-8.77	6779.7	0.00

The t-tests found that there were statistically significant differences between males and females in 15 of the factors of **CTPI-R**. Across all of these factors, males scored higher than females.

Age Group

In order to check for differences in scores between age group, an ANOVA was conducted to compare all **CTPI-R** factors between five age groups: 18-25 (n = 1459), 26-33 (n = 3348), 34-41 (n = 4054), 42-49 (n = 2221) and 50+ (n = 1018).

Table 13. ANOVA by Age Group.

Factor	18-25	26-33	34-41	42-49	50+	F	df	p-value
Action oriented	4.47	4.37	4.49	4.62	4.59	7292.025	2	0.00
Adaptability	4.43	4.86	5.00	5.18	5.25	6772.763	2	0.00
Affiliation	6.26	5.57	5.62	5.57	5.61	28142.457	2	0.00
Assertiveness	5.14	5.13	5.34	5.35	5.32	67080.143	2	0.00
Commitment	5.66	6.11	6.19	6.30	6.46	296133.730	2	0.00
Conscientiousness	5.04	5.25	5.06	4.83	4.66	319767.495	2	0.00

Control/Power	4.94	4.43	4.36	4.43	4.45	19343.042	2	0.00
Developing others	6.08	6.59	6.61	6.54	6.67	993953.660	2	0.00
Emotional stability	4.68	5.72	5.92	5.89	5.82	892.132	2	0.00
Experimental	6.04	6.58	6.58	6.55	6.28	16863.662	2	0.00
Lively	6.43	6.31	6.26	6.16	6.06	4592.52	2	0.00
Optimism	6.52	6.65	6.76	6.66	6.47	3430.319	2	0.00
Rational	4.64	5.48	5.70	5.63	5.61	56584.882	2	0.00
Rule conscientious	4.98	5.81	6.21	6.38	6.45	167.400	2	0.00
Self-confidence	5.54	6.36	6.53	6.60	6.56	8598.615	2	0.00
Social desirability	1.34	1.81	1.88	1.97	1.85	4126.566	2	0.00
Surpassing	5.80	6.18	6.21	6.12	5.86	95012.114	2	0.00
Tactical	5.31	4.71	4.55	4.24	4.03	5233.670	2	0.00
Trust	4.84	5.24	5.69	6.15	6.19	16494.328	2	0.00
Visionary	5.55	5.67	5.74	5.80	5.74	218173.812	2	0.00

The ANOVA found that there were significant differences for 15 of the factors for **CTPI-R**. Post-hoc analysis was conducted using pair-wise t-tests (Bonferroni correction) in order to see where these differences occurred:

For *Action oriented*, those in the age group 18-25 (M = 4.47) scored lower than those in age group 42-29 (M = 4.62, $p = 0.027$). Those in age group 26-33 (M = 4.37) scored lower than those in age group 34-41 (M = 4.49, $p = 0.01$), and 50+ (M = 4.59, $p = 0.003$). Those in age group 34-41 (M = 4.49) scored lower than those in age group 42-49 (M = 4.62, $p = 0.023$).

For *Adaptability*, those in age group 26-33 (M = 4.86) scored lower than those in age group 34-41 (M = 5, $p = 0.002$).

For *Assertiveness*, those in age group 18-25 (M = 5.14) scored lower than those in age group 34-41 (M = 5.34, $p = 0.001$), 42-49 (M = 5.35, $p = 0.001$), and 50+ (M = 5.32, $p = 0.022$). Those in age group 26-33 (M = 5.13) scored lower than those in age group 50+ (M = 5.32, $p = 0.005$).

For *Commitment*, those in age group 26-33 (M = 6.11) scored lower than those in age group 34-41 (M = 6.19, $p = 0.046$). Those in age group 34-41 (M = 6.19) scored lower than those in age group 42-49 (M = 6.3, $p = 0.007$). Those in age group 42-49 (M = 6.3) scored lower than those in age group 50+ (M = 6.46, $p = 0.01$).

For *Conscientiousness*, those in age group 18-25 (M = 5.04) scored lower than those in age group 26-33 (M = 5.25, $p = 0.001$), and higher than those in age group 42-49 (M = 4.83, $p = 0.004$). Those in age group 42-49 (M = 4.83) scored higher than those in age group 50+ (M = 4.66, $p = 0.026$).

For *Emotional stability*, those in age group 26-33 (M = 5.72) scored lower than those in age group 42-49 (M = 5.89, $p = 0.004$).

For *Experimental*, those in age group 18-25 ($M = 6.04$) scored lower than those in age group 50+ ($M = 6.28$, $p = 0.005$). Those in age group 42-49 ($M = 6.55$) scored higher than those in age group 50+ ($M = 6.28$, $p = 0.001$).

For *Lively*, those in age group 18-25 ($M = 6.43$) scored higher than those in age group 26-33 ($M = 6.31$, $p = 0.053$), and 34-41 ($M = 6.26$, $p = 0.005$). Those in age group 26-33 ($M = 6.31$) scored higher than those in age group 42-49 ($M = 6.16$, $p = 0.005$), and 50+ ($M = 6.06$, $p = 0.001$). Those in age group 34-41 ($M = 6.26$) scored higher than those in age group 42-49 ($M = 6.16$, $p = 0.051$), and 50+ ($M = 6.06$, $p = 0.005$).

For *Optimism*, those in age group 18-25 ($M = 6.52$) scored lower than those in age group 26-33 ($M = 6.65$, $p = 0.021$), and 42-49 ($M = 6.66$, $p = 0.021$). Those in age group 26-33 ($M = 6.65$) scored lower than those in age group 34-41 ($M = 6.76$, $p = 0.009$), and higher than those in age group 50+ ($M = 6.47$, $p = 0.008$). Those in age group 34-41 ($M = 6.76$) scored higher than those in age group 42-49 ($M = 6.66$, $p = 0.03$). Those in age group 42-49 ($M = 6.66$) scored higher than those in age group 50+ ($M = 6.47$, $p = 0.008$).

For *Rational*, those in age group 26-33 ($M = 5.48$) scored lower than those in age group 42-49 ($M = 5.63$, $p = 0.01$), and 50+ ($M = 5.61$, $p = 0.087$).

For *Self-confidence*, those in age group 26-33 ($M = 6.36$) scored lower than those in age group 50+ ($M = 6.56$, $p = 0.001$).

For *Social desirability*, those in age group 26-33 ($M = 1.81$) scored lower than those in age group 42-49 ($M = 1.97$, $p = 0.001$). Those in age group 34-41 ($M = 1.88$) scored lower than those in age group 42-49 ($M = 1.97$, $p = 0.06$). Those in age group 42-49 ($M = 1.97$) scored higher than those in age group 50+ ($M = 1.85$, $p = 0.094$).

For *Surpassing*, those in age group 34-41 ($M = 6.21$) scored higher than those in age group 42-49 ($M = 6.12$, $p = 0.084$).

For *Tactical*, those in age group 42-49 ($M = 4.23$) scored higher than those in age group 50+ ($M = 4.03$, $p = 0.003$).

For *Visionary*, those in age group 18-25 ($M = 5.55$) scored lower than those in age group 26-33 ($M = 5.67$, $p = 0.035$), and 50+ ($M = 5.74$, $p = 0.008$). Those in age group 26-33 ($M = 5.67$) scored lower than those in age group 34-41 ($M = 5.74$, $p = 0.065$), and 42-49 ($M = 5.8$, $p = 0.008$).

Country of Origin

Table 14. ANOVA by Country of Origin.

Factor	India	UAE	Mauritius	France	Uganda	Kenya	Syria	Nigeria	Mongolia	Others	F	df	P-value
Action oriented	4.34	4.20	4.58	4.74	4.84	4.75	4.40	4.70	3.94	4.70	613.153	6	0.00
Adaptability	4.81	4.96	5.14	4.60	5.51	4.90	4.93	5.01	3.89	5.11	723.334	6	0.00
Affiliation	5.62	5.36	5.26	6.57	6.18	5.23	5.23	5.88	5.98	5.73	1207.676	6	0.00
Assertiveness	5.05	5.50	5.55	5.36	5.24	5.00	5.70	4.95	4.87	5.48	5598.853	6	0.00
Commitment	6.09	6.08	5.95	5.41	6.80	6.35	6.75	6.72	6.19	6.23	908.737	6	0.00
Conscientiousness	5.13	5.25	5.43	4.64	5.15	5.14	5.32	5.73	4.94	4.53	46.298	6	0.00
Control/Power	4.12	4.52	4.96	4.98	5.01	4.33	4.80	4.26	4.88	4.69	291.742	6	0.00
Developing others	6.44	6.51	6.70	5.84	7.46	6.97	6.32	6.68	5.98	6.57	1418.743	6	0.00
Emotional stability	5.81	6.18	5.67	4.30	5.94	5.13	5.04	5.70	5.81	5.71	59.052	6	0.00
Experimental	6.88	6.29	6.11	5.30	6.82	6.01	5.92	6.94	6.40	6.20	719.699	6	0.00
Lively	6.35	6.41	6.18	6.33	5.93	5.82	6.98	6.07	5.48	6.14	1773.319	6	0.00
Optimism	6.69	6.77	6.59	6.61	6.58	5.95	6.67	7.05	6.50	6.65	4900.765	6	0.00
Rational	5.44	5.83	5.50	4.62	5.36	5.57	6.72	5.33	6.19	5.55	552.831	6	0.00
Rule conscientious	6.03	6.34	6.03	4.86	6.54	6.15	5.87	5.97	5.20	5.97	849.461	6	0.00
Self-confidence	6.49	6.88	6.47	5.20	6.28	5.90	6.14	5.96	5.75	6.40	1238.972	6	0.00

Social desirability	1.88	2.11	1.77	1.16	2.12	1.67	1.59	1.96	1.98	1.63	491.745	6	0.00
Surpassing	6.22	6.00	6.05	5.71	6.35	5.88	6.32	6.51	5.77	5.91	1257.599	6	0.00
Tactical	4.63	4.64	3.96	5.26	4.24	4.07	4.81	4.96	5.29	4.58	544.363	6	0.00
Trust	5.99	5.58	4.79	4.98	4.49	5.30	4.66	5.49	5.33	5.73	563.846	6	0.00
Visionary	5.48	5.56	5.69	5.51	6.34	6.29	5.78	6.46	6.20	5.94	448.849	6	0.00

The ANOVA found that there were significant differences in 18 of the factors for **CTPI-R**. Post-hoc analysis was conducted using pair-wise t-tests (Bonferroni correction) in order to see where these differences occurred:

For *Action oriented*, those in India (M = 4.34) scored higher than those in Mongolia (M = 3.94, $p = 0.006$), and UAE (M = 4.2, $p = 0.033$), and lower than those in Nigeria (M = 4.7, $p = 0.002$). Those in Mauritius (M = 4.58) scored lower than those in Uganda (M = 4.84, $p = 0.006$). Those in France (M = 4.74) scored higher than those in Mauritius (M = 4.58, $p = 0.095$), and Syria (M = 4.4, $p = 0.008$). Those in Kenya (M = 4.75) scored higher than those in Syria (M = 4.4, $p = 0.022$). Those in Syria (M = 4.4) scored lower than those in Uganda (M = 4.84, $p = 0.001$). Those in Nigeria (M = 4.7) scored higher than those in Syria (M = 4.4, $p = 0.063$). Those in Mongolia (M = 3.94) scored lower than those in Syria (M = 4.4, $p = 0.011$), and UAE (M = 4.2, $p = 0.091$). Those in Others (M = 4.7) scored higher than those in Syria (M = 4.4, $p = 0.009$), and lower than those in Uganda (M = 4.84, $p = 0.091$).

For *Adaptability*, those in India (M = 4.81) scored lower than those in UAE (M = 4.96, $p = 0.026$). Those in Mauritius (M = 5.14) scored higher than those in UAE (M = 4.96, $p = 0.04$). Those in France (M = 4.6) scored lower than those in India (M = 4.81, $p = 0.01$), Kenya (M = 4.9, $p = 0.034$), Nigeria (M = 5.01, $p = 0.003$), and Syria (M = 4.93, $p = 0.018$). Those in Kenya (M = 4.9) scored lower than those in Mauritius (M = 5.14, $p = 0.074$), and Others (M = 5.11, $p = 0.092$). Those in Others (M = 5.11) scored higher than those in UAE (M = 4.96, $p = 0.038$).

For *Affiliation*, those in India (M = 5.62) scored higher than those in Kenya (M = 5.23, $p = 0.001$), and Syria (M = 5.23, $p = 0.001$), and lower than those in Mongolia (M = 5.98, $p = 0.014$), Nigeria (M = 5.88, $p = 0.024$), and Others (M = 5.73, $p = 0.015$). Those in Nigeria (M = 5.88) scored lower than those in Uganda (M = 6.18, $p = 0.025$).

For *Assertiveness*, those in India (M = 5.05) scored lower than those in Uganda (M = 5.24, $p = 0.011$). Those in Mauritius (M = 5.55) scored higher than those in Uganda (M = 5.24, $p = 0.001$). Those in France (M = 5.36) scored higher than those in Kenya (M = 5, $p = 0.004$), Nigeria (M = 4.95, $p = 0.002$), and Mongolia (M = 4.87, $p = 0.001$), and lower than those in Mauritius (M = 5.55, $p = 0.036$), Syria (M = 5.7, $p = 0.007$), and UAE (M = 5.5, $p = 0.098$). Those in Uganda (M = 5.24) scored lower than those in UAE (M = 5.5, $p = 0.003$). Those in Kenya (M = 5) scored lower than those in Uganda (M = 5.24, $p = 0.057$). Those in Nigeria (M = 4.95) scored lower than those in Uganda (M = 5.24, $p = 0.026$). Those in Mongolia (M = 4.87) also scored lower than those in Uganda (M = 5.24, $p = 0.014$). Those in Others (M = 5.48) scored lower than those in Syria (M = 5.7, $p = 0.057$), and higher than those in Uganda (M = 5.24, $p = 0.003$).

For *Commitment*, those in India (M = 6.09) scored higher than those in Mauritius (M = 5.95, $p = 0.022$), and lower than those in Kenya (M = 6.35, $p = 0.007$). Those in Mauritius (M = 5.95) scored lower than those in Mongolia (M = 6.19, $p = 0.085$), and UAE (M = 6.08, $p = 0.08$). Those in Kenya (M = 6.35) scored lower than those in Nigeria (M = 6.72, $p = 0.007$), and Syria (M = 6.75, $p = 0.003$), and higher than those in UAE (M = 6.08, $p = 0.013$). Those in Mongolia (M = 6.19) scored lower than those in Nigeria (M = 6.72, $p = 0.001$). Those in Others (M = 6.23) scored higher than those in UAE (M = 6.08, $p = 0.013$).

For *Conscientiousness*, those in Mauritius (M = 5.43) scored lower than those in Nigeria (M = 5.73, $p = 0.054$), and higher than those in Mongolia (M = 4.94, $p = 0.005$), Uganda (M = 5.15, $p = 0.007$), and UAE (M = 5.25, $p = 0.054$). Those in France (M = 4.64) scored lower than those in Kenya (M = 5.14, $p = 0.001$). Those in Kenya (M = 5.14) scored lower than those in Mauritius (M = 5.43, $p = 0.041$), and Nigeria (M = 5.73, $p = 0.001$). Those in Nigeria (M = 5.73) scored higher than those in Syria (M = 5.32, $p = 0.026$), and UAE (M = 5.25, $p = 0.001$). Those in Mongolia (M = 4.94) scored lower than those in

Syria (M = 5.32, p = 0.073), and UAE (M = 5.25, p = 0.084), and higher than those in Others (M = 4.53, p = 0.017).

For *Control/Power*, those in Mauritius (M = 4.96) scored higher than those in Mongolia (M = 4.88, p = 0.005), Nigeria (M = 4.26, p = 0.054), and UAE (M = 4.52, p = 0.054), and lower than those in Uganda (M = 5.01, p = 0.007). Those in France (M = 4.98) scored higher than those in Kenya (M = 4.33, p = 0.001). Those in Kenya (M = 4.33) scored higher than those in Nigeria (M = 4.26, p = 0.001), and lower than those in Mauritius (M = 4.96, p = 0.041). Those in Nigeria (M = 4.26) scored lower than those in Syria (M = 4.8, p = 0.026), and UAE (M = 4.52, p = 0.001). Those in Mongolia (M = 4.88) scored higher than those in Syria (M = 4.8, p = 0.073), UAE (M = 4.52, p = 0.084), and Others (M = 4.69, p = 0.017).

For *Developing others*, those in India (M = 6.44) scored higher than those in Mongolia (M = 5.98, p = 0.001), and lower than those in Nigeria (M = 6.68, p = 0.028), and Others (M = 6.57, p = 0.004). Those in Mauritius (M = 6.7) scored higher than those in Syria (M = 6.32, p = 0.002), UAE (M = 6.51, p = 0.021), and Others (M = 6.57, p = 0.058). Those in Kenya (M = 6.97) scored higher than those in Mauritius (M = 6.7, p = 0.021), and Nigeria (M = 6.68, p = 0.052). Those in Syria (M = 6.32) scored lower than those in UAE (M = 6.51, p = 0.098). Those in Nigeria (M = 6.68) scored higher than those in Syria (M = 6.32, p = 0.016). Those in Mongolia (M = 5.98) scored lower than those in Syria (M = 6.32, p = 0.052). Those in Others (M = 6.57) scored higher than those in Syria (M = 6.32, p = 0.026).

For *Emotional stability*, those in India (M = 5.81) scored higher than those in Mauritius (M = 5.67, p = 0.08), and Others (M = 5.71, p = 0.058). Those in Mauritius (M = 5.67) scored lower than those in Uganda (M = 5.94, p = 0.013). Those in Uganda (M = 5.94) scored lower than those in UAE (M = 6.18, p = 0.02). Those in Kenya (M = 5.13) scored lower than those in Mongolia (M = 5.81, p = 0.001), and Nigeria (M = 5.7, p = 0.001). Those in Nigeria (M = 5.7) scored lower than those in UAE (M = 6.18, p = 0.001). Those in Mongolia (M = 5.81) scored lower than those in UAE (M = 6.18, p = 0.035). Those in Others (M = 5.71) scored lower than those in Uganda (M = 5.94, p = 0.011).

For *Lively*, those in India (M = 6.35) scored higher than those in Mauritius (M = 6.18, p = 0.013), and lower than those in Nigeria (M = 6.07, p = 0.02). Those in Mauritius (M = 6.18) scored higher than those in Uganda (M = 5.93, p = 0.013), and lower than those in UAE (M = 6.41, p = 0.007). Those in France (M = 6.33) scored higher than those in Nigeria (M = 6.07, p = 0.058), and Others (M = 6.14, p = 0.02). Those in Kenya (M = 5.82) scored higher than those in Mongolia (M = 5.48, p = 0.068), and lower than those in Mauritius (M = 6.18, p = 0.007), and Others (M = 6.14, p = 0.008). Those in Nigeria (M = 6.07) scored lower than those in UAE (M = 6.41, p = 0.01). Those in Mongolia (M = 5.48) scored lower than those in Nigeria (M = 6.07, p = 0.002), and Uganda (M = 5.93, p = 0.007). Those in Others (M = 6.14) scored higher than those in Uganda (M = 5.93, p = 0.014).

For *Optimism*, those in India (M = 6.69) scored lower than those in Nigeria (M = 7.05, p = 0.001). Those in Mauritius (M = 6.59) scored lower than those in UAE (M = 6.77, p = 0.034). Those in France (M = 6.61) scored lower than those in UAE (M = 6.77, p = 0.097). Those in Uganda (M = 6.58) scored lower than those in UAE (M = 6.77, p = 0.034). Those in Kenya (M = 5.95) scored lower than those in Mongolia (M = 6.5, p = 0.001). Those in Nigeria (M = 7.05) scored higher than those in Syria (M = 6.67, p = 0.012), and UAE (M = 6.77, p = 0.022). Those in Mongolia (M = 6.5) scored lower than those in Nigeria (M = 7.05, p = 0.001), and UAE (M = 6.77, p = 0.095). Those in Others (M = 6.65) scored lower than those in UAE (M = 6.77, p = 0.089).

For *Rational*, those in India (M = 5.44) scored lower than those in Others (M = 5.55, p = 0.041). Those in Kenya (M = 5.57) scored lower than those in Mongolia (M = 6.19, p = 0.001), and UAE (M = 5.83, p = 0.052). Those in Mongolia (M = 6.19) scored higher than those in UAE (M = 5.83, p = 0.036), and

lower than those in Syria ($M = 6.72$, $p = 0.007$). Those in Others ($M = 5.55$) scored higher than those in Uganda ($M = 5.36$, $p = 0.041$).

For *Rule conscientious*, those in France ($M = 4.86$) scored lower than those in Mongolia ($M = 5.2$, $p = 0.024$). Those in Uganda ($M = 6.54$) scored higher than those in UAE ($M = 6.34$, $p = 0.017$). Those in Kenya ($M = 6.15$) scored higher than those in Syria ($M = 5.87$, $p = 0.055$), and lower than those in Uganda ($M = 6.54$, $p = 0.001$). Those in Nigeria ($M = 5.97$) scored lower than those in UAE ($M = 6.34$, $p = 0.002$).

For *Self-confidence*, those in India ($M = 6.49$) scored higher than those in Syria ($M = 6.14$, $p = 0.001$), Uganda ($M = 6.28$, $p = 0.003$), and Others ($M = 6.4$, $p = 0.038$). Those in Mauritius ($M = 6.47$) scored higher than those in Syria ($M = 6.14$, $p = 0.004$), and Uganda ($M = 6.28$, $p = 0.029$). Those in Kenya ($M = 5.9$) scored lower than those in Syria ($M = 6.14$, $p = 0.099$), and Uganda ($M = 6.28$, $p = 0.001$). Those in Nigeria ($M = 5.96$) scored lower than those in Uganda ($M = 6.28$, $p = 0.009$). Those in Mongolia ($M = 5.75$) scored lower than those in Syria ($M = 6.14$, $p = 0.021$). Those in Others ($M = 6.4$) scored higher than those in Syria ($M = 6.14$, $p = 0.015$).

For *Surpassing*, those in India ($M = 6.22$) scored higher than those in Kenya ($M = 5.88$, $p = 0.002$), Mauritius ($M = 6.05$, $p = 0.009$), and Mongolia ($M = 5.77$, $p = 0.001$), and lower than those in Nigeria ($M = 6.51$, $p = 0.011$). Those in Mauritius ($M = 6.05$) scored higher than those in Mongolia ($M = 5.77$, $p = 0.071$), and Others ($M = 5.91$, $p = 0.055$), and lower than those in Syria ($M = 6.32$, $p = 0.031$), and Uganda ($M = 6.35$, $p = 0.001$). Those in France ($M = 5.71$) scored lower than those in UAE ($M = 6$, $p = 0.001$), and Others ($M = 5.91$, $p = 0.009$). Those in Kenya ($M = 5.88$) scored lower than those in Syria ($M = 6.32$, $p = 0.004$). Those in Syria ($M = 6.32$) scored higher than those in UAE ($M = 6$, $p = 0.008$). Those in Mongolia ($M = 5.77$) scored lower than those in Syria ($M = 6.32$, $p = 0.002$).

For *Tactical*, those in India ($M = 4.63$) scored lower than those in Nigeria ($M = 4.96$, $p = 0.006$). Those in Mauritius ($M = 3.96$) scored lower than those in Uganda ($M = 4.24$, $p = 0.004$). Those in France ($M = 5.26$) scored higher than those in Nigeria ($M = 4.96$, $p = 0.033$), and Syria ($M = 4.81$, $p = 0.001$). Those in Nigeria ($M = 4.96$) scored higher than those in UAE ($M = 4.64$, $p = 0.013$), and Others ($M = 4.58$, $p = 0.002$). Those in Mongolia ($M = 5.29$) scored higher than those in Nigeria ($M = 4.96$, $p = 0.089$), and Syria ($M = 4.81$, $p = 0.01$). Those in Others ($M = 4.58$) scored lower than those in Syria ($M = 4.81$, $p = 0.065$).

For *Trust*, those in Mauritius ($M = 4.79$) scored higher than those in Uganda ($M = 4.49$, $p = 0.008$), and lower than those in Mongolia ($M = 5.33$, $p = 0.003$). Those in France ($M = 4.98$) scored higher than those in Mauritius ($M = 4.79$, $p = 0.093$), and Syria ($M = 4.66$, $p = 0.043$), and lower than those in Kenya ($M = 5.3$, $p = 0.043$), Mongolia ($M = 5.33$, $p = 0.065$), and Nigeria ($M = 5.49$, $p = 0.001$). Those in Kenya ($M = 5.3$) scored higher than those in Mauritius ($M = 4.79$, $p = 0.001$), and Syria ($M = 4.66$, $p = 0.001$), and lower than those in UAE ($M = 5.58$, $p = 0.055$), and Others ($M = 5.73$, $p = 0.002$). Those in Nigeria ($M = 5.49$) scored lower than those in Others ($M = 5.73$, $p = 0.095$). Those in Mongolia ($M = 5.33$) scored higher than those in Syria ($M = 4.66$, $p = 0.002$), and lower than those in Others ($M = 5.73$, $p = 0.026$). Those in Others ($M = 5.73$) scored higher than those in UAE ($M = 5.58$, $p = 0.073$).

For *Visionary*, those in India ($M = 5.48$) scored lower than those in Syria ($M = 5.78$, $p = 0.002$). Those in Mauritius ($M = 5.69$) scored higher than those in UAE ($M = 5.56$, $p = 0.076$). Those in France ($M = 5.51$) scored lower than those in Mauritius ($M = 5.69$, $p = 0.025$), and Syria ($M = 5.78$, $p = 0.018$). Those in Syria ($M = 5.78$) scored higher than those in UAE ($M = 5.56$, $p = 0.044$). Those in Mongolia ($M = 6.2$) scored higher than those in Syria ($M = 5.78$, $p = 0.006$), and Others ($M = 5.94$, $p = 0.04$), and lower than those in Nigeria ($M = 6.46$, $p = 0.092$).

Study Level

Table 15. ANOVA by Study Level.

Factor	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	F	df	p-value
Action oriented	4.61	4.46	4.29	4.21	4.97	4.65	33242.31	1	0.00
Adaptability	5.09	4.88	4.86	4.60	4.61	4.68	4779.463	1	0.00
Affiliation	5.72	5.68	5.52	5.49	5.42	6.29	70.053	1	0.00
Assertiveness	5.33	5.23	5.39	5.11	4.91	5.27	132.799	1	0.00
Commitment	6.13	6.2	6.33	6.15	6.12	5.55	174804.337	1	0.00
Conscientiousness	4.87	5.16	5.21	5.49	5.19	4.86	5080.611	1	0.00
Control/Power	4.33	4.59	4.86	5.03	5.09	5.08	14610.658	1	0.00
Developing others	6.41	6.62	6.82	6.76	6.72	5.99	109968.332	1	0.00
Emotional stability	5.70	5.74	5.75	5.72	5.23	4.38	25424.841	1	0.00
Experimental	6.59	6.51	6.08	6.09	5.89	6.00	2814.834	1	0.00
Lively	6.28	6.26	6.2	6.31	6.17	6.58	8943.807	1	0.00
Optimism	6.73	6.67	6.49	6.53	6.42	6.36	14523.389	1	0.00
Rational	5.54	5.51	5.45	5.14	5.34	4.52	17079.306	1	0.00
Rule conscientious	6.00	6.02	6.06	5.91	5.26	4.87	5529.114	1	0.00
Self-confidence	6.44	6.37	6.26	6.28	5.8	5.65	21948.999	1	0.00
Social desirability	1.73	1.87	1.87	2.02	1.88	1.34	22726.23	1	0.00
Surpassing	6.25	6.08	5.82	5.71	5.3	5.64	336443.826	1	0.00
Tactical	4.57	4.65	4.48	4.72	4.96	5.03	33423.043	1	0.00
Trust	5.84	5.38	5.22	5.11	4.92	5.00	81585.654	1	0.00
Visionary	5.83	5.71	5.53	5.31	5.41	5.61	17840.408	1	0.00

The ANOVA found that there were significant differences in 19 of the factors for **CTPI-R**. Post-hoc analysis was conducted using pair-wise t-tests (Bonferroni correction) in order to see where these differences occurred:

For *Action oriented*, those in Level 1 ($M = 4.61$) scored lower than those in Level 5 ($M = 4.97$, $p = 0.047$). Those in Level 2 ($M = 4.46$) scored higher than those in Level 3 ($M = 4.29$, $p = 0.064$), and Level 4 ($M = 4.21$, $p = 0.004$), and lower than those in Level 5 ($M = 4.97$, $p = 0.005$). Those in Level 3

($M = 4.29$) scored lower than those in Level 5 ($M = 4.97$, $p = 0.001$), and Level 6 ($M = 4.65$, $p = 0.046$). Those in Level 4 ($M = 4.21$) scored lower than those in Level 6 ($M = 4.65$, $p = 0.011$).

For *Adaptability*, those in Level 1 ($M = 5.09$) scored higher than those in Level 3 ($M = 4.86$, $p = 0.027$), Level 5 ($M = 4.61$, $p = 0.026$), and Level 6 ($M = 4.68$, $p = 0.026$). Those in Level 2 ($M = 4.88$) scored higher than those in Level 4 ($M = 4.6$, $p = 0.007$). Those in Level 3 ($M = 4.86$) scored higher than those in Level 4 ($M = 4.6$, $p = 0.075$).

For *Affiliation*, those in Level 1 ($M = 5.72$) scored higher than those in Level 3 ($M = 5.52$, $p = 0.049$), and Level 4 ($M = 5.49$, $p = 0.018$). Those in Level 2 ($M = 5.68$) scored higher than those in Level 4 ($M = 5.49$, $p = 0.049$).

For *Assertiveness*, those in Level 1 ($M = 5.33$) scored higher than those in Level 2 ($M = 5.23$, $p = 0.025$), Level 4 ($M = 5.11$, $p = 0.025$), and Level 5 ($M = 4.91$, $p = 0.025$). Those in Level 2 ($M = 5.23$) scored higher than those in Level 5 ($M = 4.91$, $p = 0.097$), and lower than those in Level 3 ($M = 5.39$, $p = 0.097$). Those in Level 3 ($M = 5.39$) scored higher than those in Level 4 ($M = 5.11$, $p = 0.025$), and Level 5 ($M = 4.91$, $p = 0.025$).

For *Commitment*, those in Level 1 ($M = 6.13$) scored lower than those in Level 2 ($M = 6.2$, $p = 0.091$), and Level 3 ($M = 6.33$, $p = 0.025$). Those in Level 5 ($M = 6.12$) scored higher than those in Level 6 ($M = 5.55$, $p = 0.012$).

For *Conscientiousness*, those in Level 1 ($M = 4.87$) scored lower than those in Level 3 ($M = 5.21$, $p = 0.002$). Those in Level 2 ($M = 5.16$) scored lower than those in Level 4 ($M = 5.49$, $p = 0.001$). Those in Level 3 ($M = 5.21$) scored lower than those in Level 4 ($M = 5.49$, $p = 0.06$). Those in Level 4 ($M = 5.49$) scored higher than those in Level 6 ($M = 4.86$, $p = 0.002$).

For *Control/Power*, those in Level 2 ($M = 4.59$) scored lower than those in Level 3 ($M = 4.86$, $p = 0.014$), Level 5 ($M = 5.09$, $p = 0.015$), and Level 6 ($M = 5.08$, $p = 0.009$).

For *Developing others*, those in Level 1 ($M = 6.41$) scored higher than those in Level 6 ($M = 5.99$, $p = 0.006$), and lower than those in Level 5 ($M = 6.72$, $p = 0.089$). Those in Level 2 ($M = 6.62$) scored lower than those in Level 3 ($M = 6.82$, $p = 0.026$). Those in Level 5 ($M = 6.72$) scored higher than those in Level 6 ($M = 5.99$, $p = 0.001$).

For *Emotional stability*, those in Level 1 ($M = 5.7$) scored higher than those in Level 5 ($M = 5.23$, $p = 0.029$). Those in Level 2 ($M = 5.74$) scored higher than those in Level 5 ($M = 5.23$, $p = 0.02$). Those in Level 3 ($M = 5.75$) scored higher than those in Level 5 ($M = 5.23$, $p = 0.029$). Those in Level 4 ($M = 5.72$) scored higher than those in Level 5 ($M = 5.23$, $p = 0.033$). Those in Level 5 ($M = 5.23$) scored higher than those in Level 6 ($M = 4.38$, $p = 0.002$).

For *Experimental*, those in Level 1 ($M = 6.59$) scored higher than those in Level 5 ($M = 5.89$, $p = 0.001$), and Level 6 ($M = 6$, $p = 0.001$). Those in Level 2 ($M = 6.51$) scored higher than those in Level 5 ($M = 5.89$, $p = 0.002$), and Level 6 ($M = 6$, $p = 0.004$).

For *Optimism*, those in Level 1 ($M = 6.73$) scored higher than those in Level 3 ($M = 6.49$, $p = 0.031$), Level 4 ($M = 6.53$, $p = 0.034$), and Level 6 ($M = 6.36$, $p = 0.034$). Those in Level 2 ($M = 6.67$) scored higher than those in Level 3 ($M = 6.49$, $p = 0.064$), and Level 6 ($M = 6.36$, $p = 0.064$).

For *Rational*, those in Level 3 ($M = 5.45$) scored higher than those in Level 4 ($M = 5.14$, $p = 0.026$). Those in Level 4 ($M = 5.14$) scored higher than those in Level 6 ($M = 4.52$, $p = 0.002$). Those in Level 5 ($M = 5.34$) scored higher than those in Level 6 ($M = 4.52$, $p = 0.002$).

For *Rule conscientious*, those in Level 5 ($M = 5.26$) scored higher than those in Level 6 ($M = 4.87$, $p = 0.099$).

For *Self-confidence*, those in Level 1 ($M = 6.44$) scored higher than those in Level 2 ($M = 6.37$, $p = 0.056$), Level 3 ($M = 6.26$, $p = 0.053$), and Level 4 ($M = 6.28$, $p = 0.056$). Those in Level 2 ($M = 6.37$) scored higher than those in Level 5 ($M = 5.8$, $p = 0.001$). Those in Level 3 ($M = 6.26$) scored higher than those in Level 5 ($M = 5.8$, $p = 0.016$). Those in Level 4 ($M = 6.28$) scored higher than those in Level 5 ($M = 5.8$, $p = 0.012$).

For *Social desirability*, those in Level 1 ($M = 1.73$) scored higher than those in Level 6 ($M = 1.34$, $p = 0.007$). Those in Level 2 ($M = 1.87$) scored lower than those in Level 4 ($M = 2.02$, $p = 0.059$). Those in Level 3 ($M = 1.87$) scored higher than those in Level 6 ($M = 1.34$, $p = 0.001$). Those in Level 5 ($M = 1.88$) scored higher than those in Level 6 ($M = 1.34$, $p = 0.012$).

For *Surpassing*, those in Level 2 ($M = 6.08$) scored higher than those in Level 3 ($M = 5.82$, $p = 0.003$), and Level 6 ($M = 5.64$, $p = 0.003$). Those in Level 3 ($M = 5.82$) scored higher than those in Level 5 ($M = 5.3$, $p = 0.006$). Those in Level 4 ($M = 5.71$) scored higher than those in Level 5 ($M = 5.3$, $p = 0.028$).

For *Tactical*, those in Level 1 ($M = 4.57$) scored lower than those in Level 2 ($M = 4.65$, $p = 0.099$), Level 5 ($M = 4.96$, $p = 0.082$), and Level 6 ($M = 5.03$, $p = 0.022$). Those in Level 2 ($M = 4.65$) scored lower than those in Level 6 ($M = 5.03$, $p = 0.053$). Those in Level 3 ($M = 4.48$) scored lower than those in Level 4 ($M = 4.72$, $p = 0.099$), Level 5 ($M = 4.96$, $p = 0.053$), and Level 6 ($M = 5.03$, $p = 0.022$).

For *Trust*, those in Level 2 ($M = 5.38$) scored higher than those in Level 4 ($M = 5.11$, $p = 0.02$), Level 5 ($M = 4.92$, $p = 0.054$), and Level 6 ($M = 5$, $p = 0.068$).

For *Visionary*, those in Level 1 ($M = 5.83$) scored higher than those in Level 2 ($M = 5.71$, $p = 0.001$), and Level 5 ($M = 5.41$, $p = 0.012$). Those in Level 2 ($M = 5.71$) scored higher than those in Level 3 ($M = 5.53$, $p = 0.035$), and Level 5 ($M = 5.41$, $p = 0.061$). Those in Level 3 ($M = 5.53$) scored higher than those in Level 4 ($M = 5.31$, $p = 0.054$). Those in Level 4 ($M = 5.31$) scored lower than those in Level 6 ($M = 5.61$, $p = 0.061$).

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