# Assessments supported by Cloverleaf: Theoretical background, reliability and validity, and practical utility

## Personality

## 16 Types

The theory of 16 Types is based on Carl Jung's Theory of Psychological Types, which proposes that there are four primary dimensions among which we can evaluate personality traits.

The benefit of the 16 Types assessment is that it broadly covers the most prominent personality traits. This is particularly helpful because personality traits are relatively consistent across time and situation, and can be easily connected to observable workplace behaviors.

Cloverleaf uses the Keirsey Temperament Sorter® II (KTS), which overcomes the limitations of the Myers-Briggs Type Indicator (MBTI) assessment of 16 Types. Most notably, MBTI is based on self-reporting of how one feels and/or thinks, while KTS is based on self-reporting of observable behaviors. Across several studies, external researchers (i.e., unaffiliated with the assessment entity) illustrate construct validity and reliability for the assessment.

- Theoretical Background <sup>1,2,3</sup>
- Reliability and Validity 4,5,6,7,8,9

#### DiSC

The theory underlying DiSC comes from William Marston's work, which proposes that individuals' tendencies can be traced to their emotional responses to environmental stressors.

The benefit of the DiSC assessment is that it focuses on (a) how individuals view their environment, and (b) how individuals prefer to influence others within that environment. Along these lines, the DiSC has proven to be particularly helpful in explaining why individuals react and behave in certain ways when interacting with colleagues.

Cloverleaf uses Cleaver Company's version of the DiSC, which is based on the original theory and assessment of DiSC (i.e., Dominance, Influence, Steadiness, and Conscientiousness). Cloverleaf has conducted construct validity testing using their database of users. The findings illustrate appropriate inter-item reliability, factor structure, and test-retest reliability.

- Theoretical Background <sup>10,11</sup>
- Reliability and Validity

## Enneagram

The goal of the Enneagram is to illustrate individuals' preferred or habitual way of dealing with the world. There are nine types within the Enneagram, each of which represents a basic belief about what



an individual needs in life for survival and satisfaction, and how it can best be achieved. The theory behind Enneagram has been passed down from several philosophers and academics (e.g., George Gurdjieff, Oscar Ichazo, Claudio Naranjo) and was first presented as a measure by Helen Palmer in 1988.

The Enneagram assessment rank-orders the nine types, allowing individuals to see which tendencies they are most likely to rely upon. The is particularly useful in helping individuals and their colleagues work together because it highlights that there are several different ways to view the world and approach one's work.

Cloverleaf uses an iteration of the most popular version of the Enneagram assessment, the Riso-Hudson Enneagram Type Indicator (RHETI). Several studies to date conducted by external researchers illustrate construct validity and reliability of the RHETI.

- Theoretical Background 13,14
- Reliability and Validity <sup>15,16,17</sup>

#### Instinctive Drives

The Instinctive Drives assessment (also called the I.D. System) was developed by Link-Up! International as a way to gauge the innate behavioral tendencies of individuals. Instincts are similar to traits in that they dictate specific sets of behaviors. However, instincts also address why such behaviors are preferred (i.e., what drives the behavior).

Understanding behavioral drivers heightens self-awareness and open-mindedness towards others. This is particularly helpful in workplace settings because it facilitates empathetic communication, and increases the ability to manage interpersonal conflict.

Upon completing the 32-question assessment (rank-ordering 4 items per question), the system reports whether respondents prefer to "use" or "avoid" four instinctive drives: verify, authenticate, complete, and improvise. In partnership with the University of Western Sydney, Link-Up! International has conducted several studies demonstrating construct validity.

- Theoretical Background <sup>18,19</sup>
- Reliability and Validity<sup>20,21</sup>

## **Strengths**

# StrengthsFinder

The Gallup organization developed the StrengthsFinder assessment (which outlines 34 unique strengths) after conducting a thematic analysis covering two million interviews. Individuals with specific strengths have a combination of knowledge, skills, and abilities that enable them to consistently provide superior performance in a specific task.



Understanding strengths is helpful because when individuals leverage their strengths they are maximizing their time and energy. Additionally, understanding the strengths of others can increase team productivity because it facilitates conversations regarding strength-task alignment among team members.

Cloverleaf uses the Clifton StrengthsFinder 2.0, of which Gallup has conducted extensive construct validity testing. Several studies conducted by external researchers further demonstrate appropriate psychometric properties of the assessment.

- Theoretical Background <sup>22,23</sup>
- Reliability and Validity 24,25,26

## Strengthscope

Strengthscope LTD developed the Strengthscope assessment as a way to capture intrinsically motivating strengths that lead to higher performance. There are a total of 24 strengths organized across a circumplex that is grounded by two dimensions: internal versus external and task versus people. This 2-by-2 circumplex creates four clusters of strengths: emotional, relational, thinking, execution.

Understanding strengths is helpful because it helps individuals and teams leverage their knowledge, skills, and abilities. Strengthscope builds on this by pinpointing *intrinsically motivating* strengths. This ensures that individuals are not only working in ways in which they are effective, but in ways that they find energizing and fulfilling.

Upon completing the 186-question assessment (five-point Likert scale), the system highlights the individual's top seven strengths and cluster themes. In partnership with City, University of London, Strengthscope LTD has conducted a study across more than 10,000 global users demonstrating construct validity and test-retest reliability.

- Theoretical Background <sup>27</sup>
- Reliability and Validity<sup>28</sup>

### VIA

The VIA was developed by the VIA Institute on Character which uncovered 24 unique character strengths. Character entails the moral qualities of an individual, and strengths entail a combination of knowledge, skills, and abilities that facilitate superior performance in a specific task. Thus, character strengths address how individuals can be their best, authentic selves while contributing towards societal goals.

Understanding character strengths is important because it helps individuals contribute in ways that are organizationally impactful yet personally meaningful. Understanding the character strengths of team members is also important. When individuals are aware of the character strengths of their team members they are more likely to encourage them to leverage their character strengths



Cloverleaf uses the VIS-IS-R, a 96-item assessment (4 items per strength), which has been validated by VIA as well as external researchers.

- Theoretical Background 29,30
- Reliability and Validity <sup>31,32,33</sup>

## Lifestyle

## **Energy Rhythm**

Cloverleaf developed the Energy Rhythm assessment as a way to highlight the energy patterns of individual's throughout their work day. The theory behind Energy Rhythms draws from physiological and psychological literature on circadian rhythms (i.e., one's natural sleep-wake cycle) and chronotypes (i.e., behavioral implications of circadian rhythms).

The assessment produces three Energy Rhythm types: starters (morning type), pacers (mid-day type), and anchors (evening type). This information is useful because it helps individuals decide what type of task to pursue (e.g., deep thinking, brainstorming) given the timing of when they are likely to experience a peak, trough, or recovery in their energy.

Cloverleaf has conducted construct validity testing of the Energy Rhythm assessment. The findings illustrate appropriate inter-item reliability, factor structure, and convergent/divergent validity for a seven-item scale.

- Theoretical Background 34,35,36
- Reliability and Validity <sup>37</sup>



## References

- [1] Jung, C. G. (1971). Psychological Types. Princeton, New Jersey: Princeton University Press.
- [2] https://www.keirsey.com/
- [3] Keirsey, D. (1998). *Please understand me II: Temperament, character, intelligence*. Prometheus Nemesis Book Company.
- <sup>[4]</sup> Abramson, N. R. (2010). Internal reliability of the Keirsey Temperament Sorter® II: Cross-national application to American, Canadian, and Korean samples. *Journal of Psychological Type*, 70(2), 19–30.
- <sup>[5]</sup> Dodd, N., & Bayne, R. (2007). Internal reliability and item analysis of the Keirsey Temperament Sorter II. *Journal of Psychological Type*, 67(8), 71–83.
- [6] Kelly, K. R., & Jugovic, H. (2001). Concurrent validity of the online version of the Keirsey Temperament Sorter II. *Journal of Career Assessment*, 9(1), 49–59.
- [7] Quinn, M. T., Lewis, R. J., & Fischer, K. L. (1992). A cross-correlation of the Myers-Briggs and Keirsey instruments. *Journal of College Student Development*, 33, 279-280.
- <sup>[8]</sup> Tucker, I. F., & Gillespie, B. V. (1993). Correlations among three measures of personality type. *Perceptual and Motor Skills*, 77, 650.
- [9] Waskel, S. A. (1995). Temperament types: Midlife death concerns, demographics, and intensity of crisis. *The Journal of Psychology*, 129, 221-233.
- [10] Marston, W. M. (1928/2013). Emotions of normal people. Vol. 158. Routledge.
- [11] Merenda, P. F., & Clarke, W. V. (1965). Self-description and personality measurement. *Journal of Clinical Psychology*, 21, 52–56.
- [12] Contact Cloverleaf at <a href="https://cloverleaf.me/">https://cloverleaf.me/</a> for more information.
- [13] Riso, D. R., & Hudson, R. (1999). The wisdom of the Enneagram: The complete guide to psychological and spiritual growth for the nine personality types. Bantam.
- <sup>[14]</sup> Palmer, H. (1988). *The Enneagram Understanding yourself and the others in your life*. San Francisco: HarperCollins.
- [15] Newgent, R. A., Parr, P. H., Newman, I., & Wiggins, K. K. (2004). The Riso-Hudson Enneagram type indicator: Estimates of reliability and validity. *Measurement and evaluation in Counseling and Development*, 36(4), 226-237.
- [16] Sutton, A., Allinson, C., & Williams, H. (2013). Personality type and work-related outcomes: An exploratory application of the Enneagram model. *European Management Journal*, 31(3), 234-249.
- [17] Wagner, J. P., & Walker, R. E. (1983). Reliability and validity study of a Sufi personality typology: The Enneagram. *Journal of Clinical Psychology*, 39(5), 712-717.
- [18] https://www.instinctivedrives.com/
- <sup>[19]</sup> De Raad, B., & Doddema-Winsemius, M. (1999). Instincts and personality. *Personality and Individual Differences*, 27(2), 293–305.
- [20] Fitzgerald, J. A., Ferres, N., Dadich, A., & Hamilton, K. (2005). *The Instinctive Drives System™: A reliable and valid catalyst for improving team performance*. Sydney, NSW: InCITe Research Group, College of Law and Business, University of Western Sydney.
- [21] Fitzgerald, A., Sloan, T. R., Hayes, K. J., Dadich, A. M., & Chapman, G. R. (2011). *Instinctive Drives® Profiles: Exploring Data, Presenting Results and Expanding Horizons*. Sydney, NSW: InCITe Research Group, College of Law and Business, University of Western Sydney.
- [22] https://www.gallup.com/home.aspx



# References

- [23] https://www.gallup.com/home.aspx
- [1] Clifton, D. O., & Harter, J. K. (2003). *Investing in strengths. Positive organizational scholarship: Foundations of a new discipline*, 111-121.
- [24] Asplund, J., Lopez, S. J., Hodges, T., Harter, J. Asplund, J., Lopez, S. J., Hodges, T., Harter, J. (2014). *The Clifton StrengthsFinder® 2.0 technical report: Development and validation*. Princeton, NJ: The Gallup Organization.
- <sup>[25]</sup> Louis, M. C. (2011). Strengths interventions in higher education: The effect of identification versus development approaches on implicit self-theory. *The Journal of Positive Psychology*, *6*(3), 204-215.
- <sup>[26]</sup> Schmidt, F. L., & Rader, M. (1999). Exploring the boundary conditions for interview validity: Meta-analytic validity findings for a new interview type. *Personnel Psychology*, *52*(2), 445-464.
- <sup>[27]</sup> Brook, J., & Brewerton, P. (2006). *Strengthscope technical manual*. Strengths Partnership, London.
- Whitefoot, A., & Pangallo, A. (2015). External validation study of the Strengthscope® psychometric tool. <a href="https://www.strengthscope.com/wp-content/uploads/2016/02/External-Validation-of-Strengthscope-by-City-University-London-2015.pdf">https://www.strengthscope.com/wp-content/uploads/2016/02/External-Validation-of-Strengthscope-by-City-University-London-2015.pdf</a>
- [29] https://www.viacharacter.org/
- [30] Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A classification and handbook.* Washington DC: American Psychological Association.
- [31] McGrath, R. E. (2019). *Technical report: The VIA Assessment Suite for Adults: Development and initial* evaluation (rev. ed.). Cincinnati, OH: VIA Institute on Character.
- [32] Ruch, W., Martinez-Marti, M. L., Proye R. T., & Harzer, C. (2014). The character strengths rating form (CSRF): Development and initial assessment of a 24-item rating scale to assess character strengths. *Personality and Individual Differences*, 68, 53-58.
- [33] Ruch, W., Proyer, R. T., Harzer, C., Park, N., Peterson, C., & Seligman, M. E. P. (2010). Values in action inventory of strengths (VIA-IS): Adaptation and validation of the German version and the development of a peer-rating form. *Journal of Individual Differences*, *31*, 138-149.
- Di Milia, L., Smith, P. A., & Folkard, S. (2004). Refining the psychometric properties of the circadian type inventory. *Personality and Individual Differences*, *36*(8), 1953-1964.
- [35] Adan, A., & Almirall, H. (1991). Horne & Östberg morningness-eveningness questionnaire: A reduced scale. *Personality and Individual differences*, *12*(3), 241-253.
- [36] Adan, A., Archer, S. N., Hidalgo, M. P., Di Milia, L., Natale, V., & Randler, C. (2012). Circadian typology: a comprehensive review. *Chronobiology International*, 29(9), 1153-1175.
- [37] Contact Cloverleaf at <a href="https://cloverleaf.me/">https://cloverleaf.me/</a> for more information.

