



THE ENNEAGRAM ASSESSMENTS

Technical Documentation

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BACKGROUND

Summary: In this report, we examine the internal and external validity of Truity Psychometrics' Enneagram assessments. The assessments include the Enneagram Personality Test and the Enneagram for the Workplace, which are both administered online through the website at Truity.com. In general, the assessments demonstrate a reasonably strong internal structure and can be used to predict real-world variables related to individual relationship styles/preferences significantly above chance level.

The Enneagram assessments are philosophical, not scientific, in origin. In spite of their non-empirical derivation (in comparison to the Big Five model, for example), it is entirely possible for any assessment to demonstrate internal and external validity—i.e., for its category structure to be reliable and for its results to be predictive of real-world variables, respectively. The purpose of this report is to assess the extent to which Truity Psychometrics' Enneagram assessments exhibit these qualities.

The development of the Enneagram is traced back to a South American philosopher named Oscar Ichazo, who developed his ideas about human personality in the mid-20th century. The theory was popularized more widely after the psychiatrists Claudio Naranjo and John Lilly studied with Ichazo and further developed his ideation (see Alexander & Schnipke, 2020). The fundamental idea underlying the Enneagram model is that personalities can be subdivided into nine interconnected 'types,' where each type is present within the individual to varying degrees. As such, individuals typically demonstrate dominant types that are thought to reliably predict and explain their behavior, particularly with respect to managing the stressors of life.

On the following page is a summary of the nine Enneagram types from a high-quality synthesis of the history and theoretical context of the assessment featured in the American Journal of Psychiatry:

TABLE 1. Summary of the nine basic Enneagram personality types

Type	Description	Basic fear	Basic desire
Type 1: the perfectionist	Principled, conscientious, organized, responsible, and committed. Concerned with improvement, morality, desire to perfect themselves and their surroundings. Seen as detail oriented, hypercritical, and judgmental. Struggle with an "inner critic," repressed anger, impatience, and a sense that nothing is good enough.	To be bad or corrupt	To be good or have integrity
Type 2: the helper	Intuitive, empathetic, people pleasing. Concerned with relationships and sense of connection to others. Seen as warm, emotional, comforting, optimistic, easy to flatter or manipulate. Struggle with advocating for their own needs and often "give to get"—working to meet the needs of others in hopes their needs will be met in return.	To be unworthy of being loved, to be unwanted	To be loved
Type 3: the achiever	Hard working, competitive, success oriented, and image conscious. Concerned with performance, external validation and praise, and feeling distinguished. Seen as self-assured, energetic, charming, focused on goals. Struggle with vulnerability and self-awareness of their own inner desires.	To be worthless or insignificant, to disappoint others	To be valuable and accepted
Type 4: the individualist	Sensitive, introspective, reserved, emotionally honest with self and others. Concerned with authenticity, able to endure suffering, and a tendency toward individualism and artistic expression. Seen as unique, creative, withdrawn, moody, self-absorbed. Struggle with a sense that something is lacking in themselves or the world.	To have no identity or personal significance	To be meaningful based on their inner experience
Type 5: the investigator	Cerebral, sensitive, independent, and emotionally restrained. Concerned with privacy, knowledge, insight, and contemplation. Seen as observant, expert, analytical, eccentric, and devoted to their group. Struggle with social interaction, emotional expression, and the tendency to isolate.	To be useless, helpless, or incapable	To be capable and competent
Type 6: the loyalist	Loyal, reliable, committed, security oriented. Concerned with clearly defined roles and structure, alliance to beliefs and groups. Seen as responsible, protective, anxious, suspicious. Struggle with fear, paranoia, worst-case scenarios.	To be without security and support	To have security and support
Type 7: the enthusiast	Enthusiastic, adventure seeking, optimistic. Concerned with freedom, excitement, and spontaneity. Seen as energetic, outgoing, the "life of the party." Struggle with compulsivity, overextension of self, and commitment.	To be confined or in pain	To be happy and satisfied
Type 8: the challenger	Willful, tough, and independent. Concerned with power dynamics, desire to be in control, and justice. Seen as a leader, hardworking, decisive, able to withstand conflict. Struggle with anger, fear of vulnerability, aggression.	To be harmed or controlled by others	To be in control and to protect self and others
Type 9: the peacemaker	Easygoing, open minded, peaceful, conflict avoidant. Concerned with harmony, comfort, boundaries. Seen as likeable, laid back, dependent, complacent. Struggle with finding their own voice and meaning, being passive aggressive or avoidant.	To be disconnected, separate, lost	To have peace and stability in their internal and external world

INTERNAL VALIDITY

Anonymous data from over 2.3 million users was used to conduct all of the following analyses.

CRONBACH'S ALPHA

Cronbach's alpha is a measure of the reliability of category structures used in psychometric assessments. Given the proprietary nature of Truity's implementation of the Enneagram, the constructs used are coded by letter. Each construct corresponds to a set of questions in the assessment that probe a particular trait. Some examples of trait constructs used in this assessment include caretaking, emotionality, future-focus, and individualism. Interpretations of the Cronbach's alpha metric are provided below and on the following page.

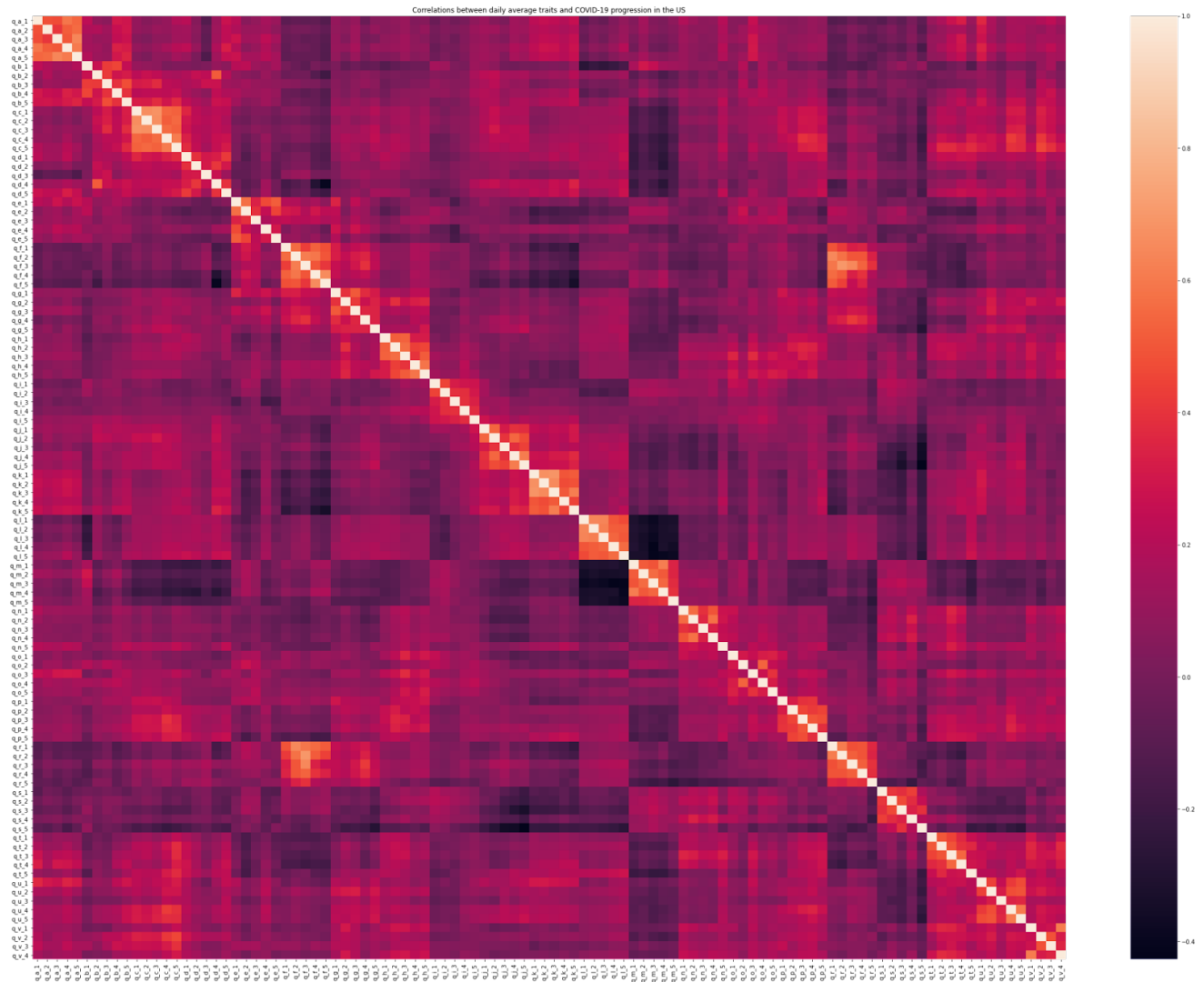
Cronbach Alpha Criteria	Classification
$a \geq 0.9$	Very good
$0.8 \leq a < 0.9$	Good
$0.7 \leq a < 0.8$	Be accepted
$0.6 \leq a < 0.7$	Doubtful
$0.5 \leq a < 0.6$	Bad
$a < 0.5$	Not acceptable

Trait	Cronbach's Alpha
Construct A	0.850
Construct B	0.744
Construct C	0.876
Construct D	0.706
Construct E	0.744
Construct F	0.847
Construct G	0.742
Construct H	0.812
Construct I	0.731
Construct J	0.801
Construct K	0.861
Construct L	0.858
Construct M	0.815
Construct N	0.752
Construct O	0.700
Construct P	0.765
Construct R	0.810
Construct S	0.722
Construct T	0.763
Construct U	0.782
Construct V	0.758

Accordingly, thirteen constructs are considered 'acceptable,' and eight are considered 'good.' In general, this suggests that the internal structure of the Enneagram assessments is well-founded.

INTERCORRELATION MATRIX

The second major internal validity analysis performed is an intercorrelation matrix of all questions sorted by construct. Qualitatively, one will notice bright boxes clustered around each category, which is a statistical representation of the fact that within-trait question scores correlate significantly more strongly with one another than with question scores recorded from other trait constructs. The optimal result here would be within-trait question correlations of 1 and across-trait question correlations of 0.



The orange boxes demonstrate relatively clear within-construct correlations, particularly for constructs A, F, H, K, M, and R.

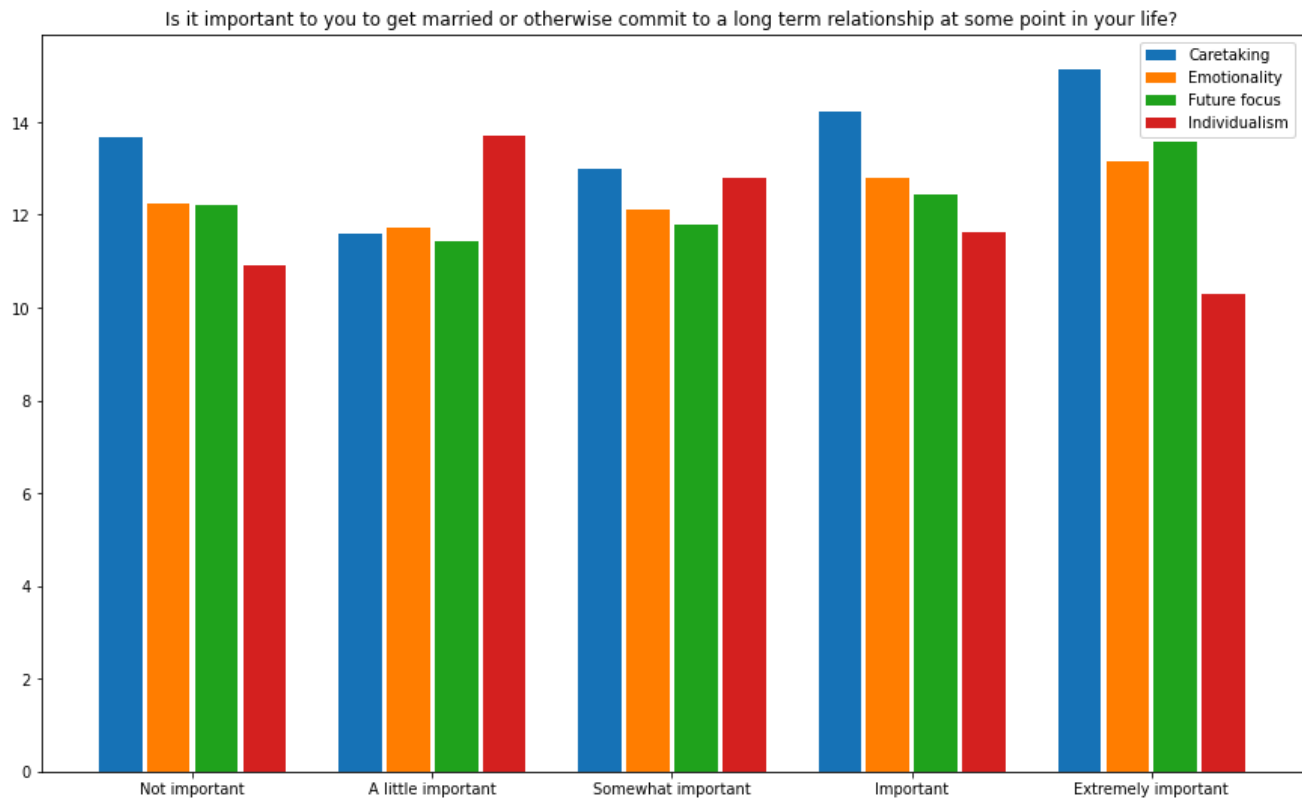
EXTERNAL VALIDITY

In order to assess the predictive validity of the Enneagram measurements, machine learning analyses were performed to determine whether predictive models could be constructed that take user scores as input and output a numerical representation corresponding to participants' answers to simple questions related to relationship preferences. If the model is able to learn a mapping from participant scores to, say, one's current relationship status, this is strong evidence that the information being captured in the Enneagram assessments displays real-world relevance. Below, the results of four experiments are summarized, including the question users were asked, the possible responses users could have given, the chance-level predictive accuracy (i.e., the performance of a model that guessed randomly), and the trained model's predictive accuracy. Note that significantly fewer than the 2.3 million original respondents elected to complete this optional section of the assessment.

Question	Possible Responses	Chance-Level Prediction	Model Predictive Accuracy
'What is your current relationship status?'	Single, short-term relationship, long-term relationship, married	25%	57.1%
'If you are in a relationship, how long have you been with your partner?'	<1 year, 1 year, 2 years, 5-8 years, >8 years	20%	59.3%
'Is it important to you to get married or otherwise commit to a long-term relationship at some point in your life?'	Not at all, somewhat, neutral, a good deal, a huge amount	20%	45.8%
'In your entire life, how many serious relationships would you say you have had?'	0, 1, 2, 4-8, >8	20%	46.6%

In all cases, the machine learning models are able to roughly double chance-level predictive accuracy, demonstrating that information latent in personality assessment scores can be used to predict relationship-related variables.

In order to get a better sense of the kind of data that the models are leveraging, some of the constructs have been sampled for one particular question investigated above in order to demonstrate how they differ across the answers given.



As the importance of committing to a long-term relationship or marriage at some point in life increases, caretaking increases, emotionality slightly increases, future-focus increases, and individualism decreases. All of these results make intuitive sense and help demonstrate why and how machine learning algorithms can utilize Enneagram data to make accurate predictions about people's relationship styles.