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TruTalent®
PERSONALITY

Statistical Analysis
Adult Population

Contents

Introduction

This report summarizes the methods and findings of research conducted on the psychometric properties of the TruTalent® Personality assessment among adults.

Analysis began with a data set of 3,080 individual results, comprised of 2,194 (71%) people identifying as female and 886 (29%) people identifying as male. The individuals were all adults using the services of various workforce centers that attempt to help people identify career goals and attain employment aligned to those goals. The vast majority of individuals reside in the United States.

Subjects are asked to rate the accuracy of a profile shown to them based on their responses to 36 dichotomous response items: 9 items for each of the four dimensions of personality type, Extraversion vs. Introversion (E/I), Sensing vs. iNtuiting (S/N), Thinking vs. Feeling (T/F), and Judging vs. Perceiving (J/P). The following is a breakdown of the accuracy rating with the 3,080 subjects.

Goodness of Fit – Self-Rated Accuracy

Accuracy Rating	Number of Subjects	Percentage of Subjects
Very Accurate (85% or more)	1,900	61.7
Mostly Accurate (75%)	965	31.3
Somewhat Accurate (60%)	190	6.2
Not Very Accurate (50% or less)	25	0.8

The complete data set of 3,080 subjects contained the 16 personality types in the percentages described in the following table:

Personality Type Results

Dimension	%	%	Dimension
Extravert	35	65	Introvert
Sensing	64	36	Intuitive
Thinking	42	58	Feeling
Judging	64	36	Perceiving

Type	% from DWYA Sample	% from MBTI Sample	Type	% from DWYA Sample	% from MBTI Sample
ENFJ	3.9	2 - 5	INFJ	5.8	1 – 3
ENFP	5.9	6 - 8	INFP	9.1	4 – 5
ENTJ	3.5	2 – 5	INTJ	3.9	2 – 4
ENTP	2.0	2 – 5	INTP	3.3	3 - 5
ESFJ	7.2	9 – 13	ISFJ	17.1	9 – 14
ESFP	2.4	4 – 9	ISFP	7.8	5 – 9
ESTJ	7.8	8 - 12	ISTJ	14.9	11 - 14
ESTP	1.8	2 - 4	ISTP	4.5	4 - 6

With the complete data set, the percentages for 11 of the 16 types fall within the ranges found by the MBTI on the general U.S. population.[1] Two types, ESFJ and ESFP fell slightly below the ranges found with the

MBTI. Three types, INFJ, INFP and ISFJ showed higher frequency than that found with the MBTI. However, the MBTI used a sample that reflected the general US population, while TruTalent Personality used sample of people seeking career services with a high proportion of females. The general trend in our sample showed an under-representation of types including extraversion (E) and an overrepresentation of types including introversion (I).

Three analyses were conducted on the idealized sample:

1. Item analysis measuring the predictive power of each question.
2. Internal consistency using coefficient alpha.
3. Correlation of scales to determine if the personality dimensions are independent measures.

Item Analysis

The item analysis conducted was a Bayesian procedure, which shows the predictive power in the form a probability for each choice of a question. Items are deemed predictive if both choices have at least a 67% probability of predicting the correct side of the personality dimension. This threshold is more rigorous than what was used for the MBTI. Items are also examined to make sure they do not have predictive power on any index other than the one they are assigned. Items are deemed not predictive if they range between 40% and 60%. A 50% predictive ability would be equal to random chance in predictive power for the dichotomous scale used in personality type.

The results from the item analysis showed that all items have predictive power only for the intended index. In fact, the results from this analysis show that the assessment has made significant improvement on this measure of reliability since the last major analysis made in 2012.

Average predictive power for extravert-introvert questions was 78%, intuitive-sensing was 74%, thinking-feeling was 75%, and for judging-perceiving the average was 79%. For comparison, all questions ranged between 43% and 56% when measured against scales for which they were not intended. This means the items were specifically predicting the intended dimension of personality and were not predicting one of the other three dimensions.

Reliability via Internal Consistency

An internal consistency analysis was performed to evaluate the reliability of each of the dimensions. The method employed was coefficient alpha. The minimum level of correlation for acceptable reliability is 0.60. The following tables show the coefficient alphas for each of the dimensions. For reference, values from 0.70-0.79 are considered "acceptable", values of 0.80-0.89 are "good", and values of 0.90 or greater are "excellent" but rare.

Dimension	Coefficient Alpha
E/I	0.77
S/N	0.70
T/F	0.75
J/P	0.79
Average	0.753

Independence of Scales (Personality Dimensions)

The third analysis is the independence of the scales. This procedure correlates each dimension to the others. The indices of a Jungian instrument should not correlate since the constructs are independent and separate ideas. Thus a correlation of the indices should not yield coefficients greater than 0.30 in magnitude. Below are the results of the test of independence for the idealized sample.

Correlation of Dimensions

	E/I	S/N	T/F	J/P
E/I	1.00	0.03	-0.03	-0.09
S/N	0.03	1.00	0.15	-0.19
T/F	-0.03	0.15	1.00	-0.08
J/P	-0.09	-0.19	-0.08	1.00

These results show that all correlations between different dimensions are well below the 0.30 threshold. The highest is SN/JP, reaching 0.19. The majority of correlations were below 0.10, which shows the dimensions have a high level of independence.

Goodness of fit data is recorded as subjects report the accuracy of their results. Thus, fit can also be an approach to measure criterion validity. The Goodness of Fit Table at the beginning of this report shows that 93% of the subjects rate their type descriptions as mostly or very accurate.

The TruTalent Personality assessment attempts to increase accuracy by asking subjects to read different type descriptions and, if they had very close scores on a dimension, select the better fitting description. Goodness of fit can therefore be further examined by a variable called "typesame", which records whether the subject picked the type as scored (all four dimensions the same) or picked a type different than scored (one or two dimensions different).

The findings show that people who picked the same type as scored by the assessment had a significantly higher percentage of very good fit.

Parallel studies on the MBTI measured percentage of agreement with assessment results and a type chosen as the subject's best fit after a feedback session with a trained professional. The method is similar to the TruTalent Personality assessment's approach to clarifying close scores. Studies show that, on average, 75% of people select a type that matches their MBTI results.

In studies where participants were asked to pick a description blind to their results and without professional feedback, an average of 50% of subjects picked the same type description as their results predicted.

Conclusions

These results show that the psychometric properties of the TruTalent Personality assessment instrument are indeed stable. They appear very good for a short assessment. The item predictive probabilities average 77%, which is very good. These weights are the equivalent to two-point items of the MBTI form G.

The factor analysis supports the item analysis finding and shows that the items group with their respective dimensions.

The reliability results (average 0.75) are excellent for an instrument of this length.

All the intercorrelations of the scales are well below the 0.30 threshold demonstrating virtually no overlap with each other. Only the S/N-J/P correlation edges towards the threshold with the 0.19 score. The TruTalent Personality assessment benefits from the shorter scales that reduce the chances of getting higher correlations.

The validity test examining fit, while not the exact same test as performed with the MBTI, shows that the TruTalent Personality assessment has comparable results.

One unique approach taken by the TruTalent Personality assessment is that subjects with very close scores can examine descriptions and chose a type that they believe fits best. The comparison of reported goodness of fit for subjects accepting their type results versus subjects picking another type show that people who agreed with their assessment reported the highest goodness of fit with the description.

References

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