

TTI SI Style Insights® v Big 5 Personality Inventory: A Validation Comparison Study

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Abstract

Establishing concurrent or construct validity is a process, not an individual study. One way to establish different forms of validity is to run comparison studies against known, established psychometric assessments. In this study, the TTI Success Insights Style Insights® behavior assessment is compared with the Big Five Personality Inventory. It is noted that the two assessments are not measuring the same constructs from the outset. However, this study shows that the level of correlations between the D, I, S, and C constructs of the TTI Success Insights assessment and the O, C, E, A, and N constructs of the Big Five assessments support evidence of concurrent and construct validity for Style Insights®.

1 Introduction

Establishing the reliability and validity of any psychometric assessment is a process that requires many different approaches. First and foremost there are myriad types of validity to consider. Moreover, there are differing viewpoints presented in contemporary literature as to what constitutes a valid assessment, see, for example, the different approaches outlined in [1], [2], and [8], among many others.

The aim of this report is to lay part of the framework for the construct validity of the TTI Success Insights (TTI SI) Style Insights® assessment. Style Insights is a version of the DISC model first proposed by Marston, [6]. The first version of a DISC style model as a psychometric assessment appears to have been Clarke's Activity Vector Analysis, [5]. Geier also developed a DISC style assessment called the Personal Profile System, see [3].

TTI Success Insights first acquired the DISC model in 1984, in good faith, from Tom Hen-

drickson. From that time to only a few years previous to the writing of this article, the primary focus of TTI SI was anything but psychometric assessments. As time has evolved, it has become more and more apparent to TTI SI that a comprehensive continuous improvement process, including periodic reviews of the reliability and validity of the TTI SI family of assessments, is paramount.

TTI SI has selected the Big 5 Personality Inventory (BFI) for this comparison study. One major consideration in choosing BFI for this study is that BFI is widely accepted as a valid assessment of personality. While TTI SI Style Insights® is not specifically a personality assessment, we do expect to find some correlations between the four scales of DISC and four of the five scales of the BFI. As is explained in this report, it is expected that none of the D, I, S, and C scales correlate with the Neuroticism scale of BFI.



2 Style Insights® to BFI Qualitative Comparison

As is stated in the introduction, Style Insights® is based on the DISC model first proposed by Marston and first developed into an assessment by Geier. The DISC model proposed a four factor model with the primary names of Dominance, Influence, Steadiness, and Compliance.

In contrast, BFI is a five factor model measuring personality factors of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. The first thing to note is that the work of Marston is titled “The Emotions of Normal People”. Given that a basic definition of neuroticism is “... a personality trait that is characterized by, and predisposes, affected individuals to negative emotional states such as depression, anxiety, ...”, one may reasonably argue that neuroticism is not something measured by the DISC model.

To make the remainder of the comparisons, we need to define what each of them represent. Dominance measures an individual’s propensity to be both extraverted and task oriented. Influence measures a level of extroversion with people orientation. Steadiness measures a level of introversion combined with people orientation. Compliance measures one’s propensity to be task oriented and introverted.

The following information regarding BFI constructs is taken from NEO® Inventories manual, see [7]. For Extraversion, the manual states “Extraverts are...sociable, but sociability is only one of the traits ... In addition to liking people and preferring large gatherings, [they] are assertive, active, and talkative ... They like excitement and stimulation...”

Comparing the DISC scales to Extraversion, we see that Dominance and Influence are most likely to correlate positively with BFI, but for different reasons. For example, a high D on the TTI SI DISC would be someone who is assertive, active, likes excitement, but may not necessarily “like” people. High D individuals are task ori-

ented and would more likely see interactions with people as a means to an end. On the other hand, high I individuals are definitely viewed as social, talkative, and like excitement and stimulation, but are likely not assertive.

Rather than assertive, a high I is an influencer. The authors in [7] state that introversion should be seen as a lack of extraversion rather than its opposite. In that case, one would expect the Steadiness and Compliance scales to not correlate much with the Extraversion scale given the statement that these behavior styles have a tendency to be introverted. However, there are aspects of Steadiness, and especially Compliance, that may be the opposite of some aspects of Extraversion.

The Openness scale is defined in [7] as “active imagination, aesthetic sensitivity, attentiveness to inner feelings, intellectual curiosity, ...” Given this definition, we do not expect to see much in the way of correlations, with the possible exception of the Steadiness scale. Items measuring to the active imagination portion of the definition may capture some of the Influence dimension. It would not be surprising if there were some negative correlation with the Compliance scale.

This is a good place to interject some commentary how TTI SI views certain aspects of the constructs of the BFI. TTI SI has an assessment called Motivation Insights®. This assessment is designed to measure the “why” behind the behavior of an individual. In the definition of Openness, we see several links to our Motivation Insights® assessment. For example, one of the Motivators measured by our assessment is Aesthetic, directly related to a portion of Openness. Similarly, intellectual curiosity aligns with our Theoretical motivation construct.

The Agreeableness scale is defined in [7] “an agreeable person is fundamentally altruistic, sympathetic, eager to help, and believes others will be equally helpful in return.” As noted in the previous paragraph, there are certain aspects of the personality constructs that TTI SI views as more motivation than behavior. Portions of



the definition of Agreeableness appear to align with the TTI SI Motivation constructs Aesthetic and Social. We would also expect to see some alignment with our Steadiness scale.

Finally, Conscientiousness is defined in [7] as “purposeful, strong-willed, determined, organizing, planning, ...” It is likely that there may be some low levels of correlation between Conscientiousness and Compliance and possibly with Dominance, although the relationship seems, prima facia, quite weak.

3 Methodology

Obtaining adequate numbers of study participants is often challenging. For this study, TTI SI chose to request the participation of the top producing Value Added Associates in the TTI SI Network in helping the TTI SI Research and Development Group obtain a reasonable sample population. A request was sent to the top N producers in our network by volume and each was asked to request between five and ten individuals in their personal and professional networks to fill out the surveys and respond to the assessments.

The resulting set of participants contained 107 individuals who completed both the TTI SI Style Insights assessment as well as the Big Five Inventory.

4 Demographics

As mentioned previously, in the early years of TTI SI the focus was on helping employers find the right individual for a given position. Due to Equal Employment Opportunity Commission (EEOC) policies over the years, a business decision was made to collect only the minimum amount of demographic information to ensure our clients were protected and establish compliance with EEOC guidelines. More recently, TTI SI has begun to implement more comprehensive demographic collection. The little information available for this data set was the gender breakdown which shows 45 males and 62 females, or a 42% to 58% male to female ratio.

5 Analysis and Results

The analysis of this section is based on the standard correlation coefficient, denoted by the Greek letter ρ . Generally speaking, a correlation coefficient may take on any value between 1 and -1. Interpretation of correlation is as follows. A ρ value of ± 1 indicates perfect positive or negative correlation between the objects being studied. This indicates that the two objects are either identical or identically opposite. In the middle of these two extremes is $\rho = 0$ which indicates a completely random relationship between the objects.

In this study, we expect to see moderate to strong positive correlations between the corresponding scales of the two different DISC assessments. There is little consensus on what is an acceptable level of correlation and the definition is highly dependent on the application. In this setting, we are seeking to understand whether the scales of Style Insights appear to measure the same or similar constructs as the scales of the BFI.

The results of the Natural (Graph II) DISC scales’ comparison to BFI are presented in Table 1.

Table 1: Style Insights[®] to BFI Correlation

	O	C	E	A	N
D	0.33		0.45	-0.29	
I	0.31		0.65	0.35	-0.20
S			-0.22	0.66	
C	-0.23	0.31	-0.56	0.24	

It is interesting to note that the D,I,and C scales capture the largest portion of correlation across the largest spread of the BFI. This is not unexpected as the areas that TTI SI expected Steadiness to measure well against are, after closer inspection, measuring what TTI SI would call Motivation not Behavior. Since BFI is a self-coined personality measure, it is not surprising that el-



ements not measured by Style Insights are contained in BFI.

A slight surprise finding in the analysis is that Dominance does not correlate significantly with Conscientiousness. As noted earlier, the authors of this paper expected some correlation between these two scales based on the definitions provided in [7]. A detailed presentation of the item by item correlation is beyond the scope of this article. However, details are presented in a forthcoming, detailed presentation of all studies to date at TTI SI, see [4].

As an example, we see in the full item by item correlation matrix that 14 of the 24 Dominance items correlate at a reasonable level with the items on the Conscientiousness scale. These correlations are significant and strong enough to warrant exploration, but not strong enough to influence the scale level correlation to be acceptable and significant.

In a larger analysis, each of the scales will receive a similar treatment. Not just a look at correlation on a scale level, but an item by item treatment and determining whether a given item falls under the umbrella of a BFI scale or not. As noted earlier, our Dominance and Influence scales both measure Extraversion, as well as Openness, but measure different aspects of the scale.

6 Summary and Future Work

This report presents the results of a study of the comparisons of the scales between the TTI SI Style Insights® and the Big Five Inventory. As is seen in the previous section, reasonable levels of correlation exist between each of the D,I, S, and C of Style Insights and at least one scale of the BFI. In some cases, there is expected to be some correlation between certain D,I,S, and C items that does not show through in the scale correlation analysis. A quick review of some specific Dominance items expected to correlate with certain Conscientiousness items show they in fact do correlate. A more complete analysis is forthcoming, see [4].

References

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