Statistical Analysis

Several statistical analyses have been conducted over nearly a decade to ensure that the Vital Signs tools are robust and accurate. These findings are from the 2013 analysis of the VS database.

Structure

Scales: 5 climate scales + 4 outcome scales

Mean score: 100

Standard deviation: 15

Norming & Validation: Based on over 15,000 responses from over 100 organizations, the OVS database represents a robust norm group representing small, medium, and large enterprise, government agencies, and nonprofits from all over the globe. Industries include technology, manufacturing, finance, hospitality, healthcare, education, plus a range of professional services. The majority of respondents are from US, Italy, UAE, Singapore, Malaysia, China, and Canada; as shown below, they tend to be educated professionals.

The model has been subjected to two factor analyses and extensive psychometric validation. These analyses confirm the structure of the tools, with a 5-factor and predictive validity and its reliability (below).

Cronbach Alpha

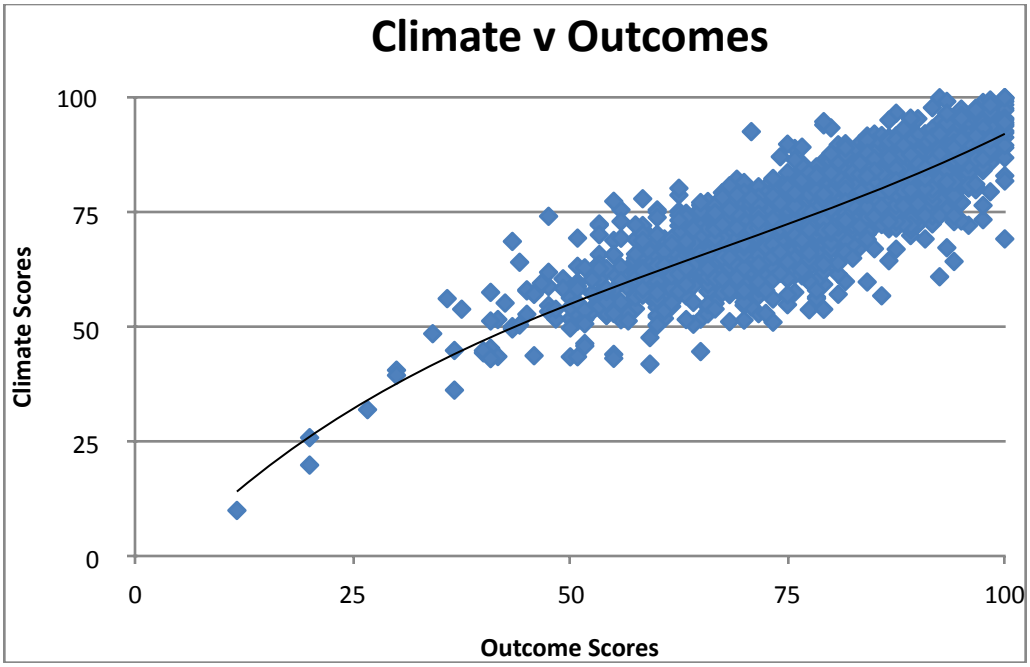
One way to report on the reliability of a psychometric measure is to calculate the internal consistency of its underlying scales. Internal consistency refers to the extent to which items assigned to a scale are correlated to one another. Cronbach's coefficient alpha was used to calculate the internal consistency of the VS drivers. This statistic can range from -1.0 to +1.0 and indicates to what extent the items in a factor measure the same construct. An alpha with a positive value, and greater than 0.6, is considered statistically reliable.

Scale	Cronbach's Coefficient Alpha
Motivation	0.804
Teamwork	0.875
Execution	0.796
Change	0.679
Trust	0.877

Predicting Outcomes

There is a strong relationship between climate and the outcomes.

A multiple regression analysis was used to test the relationship between the OVS scales and the four outcomes. Collectively, 60% of the variation in the performance outcomes is predicted by the organizational climate (R^2=.5998). This relationship can be seen visually in this scatter graph:



The climate scores also predict variation in each individual outcome:

- Retention = 36.33%
- Productivity = 36.68%
- Customer Focus = 42.62%
- Future Success = 60.27%

Below is the model in its predictive validity showing how different factors contribute to explain the link between climate and overall performance.

Report of the Forward procedure for dependent variables, n = 5350, P> 0.5 (by Regression Analysis OVS 2013, Lorenzo Fariselli, 2013):

Predicting **Total Performance**	R2 Partial	R2 Model
Trust	0.4544	0.4544
Motivation	0.0915	0.5459
Teamwork	0.0375	0.5834
Execution	0.0086	0.5920
Change	0.0061	0.**5981**

The following tables show how different factors contribute to each of the four OVS performance outcomes.

Report of the Forward procedure for dependent variables, n = 5350, P> 0.5 (by Regression Analysis OVS 2013, Lorenzo Fariselli, 2013):

Predicting **Retention**	R2 Partial	R2 Model
Motivation	,3019	,3019
Trust	,0524	,3544
Teamwork	,0085	,3629
Change	,0032	,3661
Execution	,0005	,**3666**

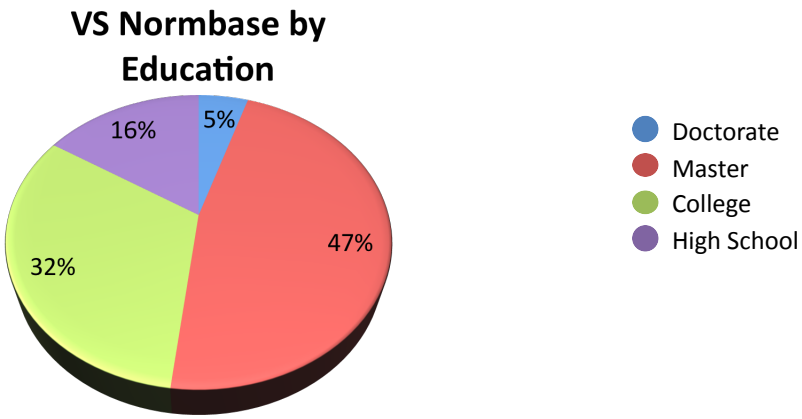
Predicting **Productivity**	R2 Partial	R2 Model
Motivation	,2713	,2713
Teamwork	,0671	,3385
Change	,0152	,3537
Execution	,0111	,3648
Trust	,0020	,**3668**

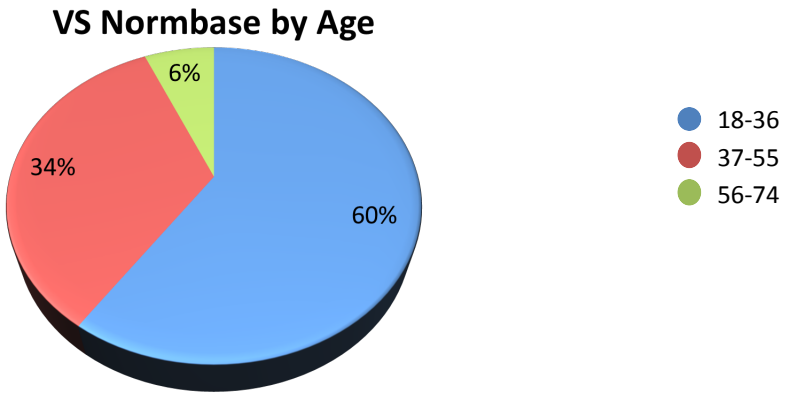
Predicting **Customer Focus**	R2 Partial	R2 Model
Execution	,3206	,3206
Motivation	,0639	,3844
Teamwork	,0284	,4128
Trust	,0119	,4247
Change	,0015	,**4262**

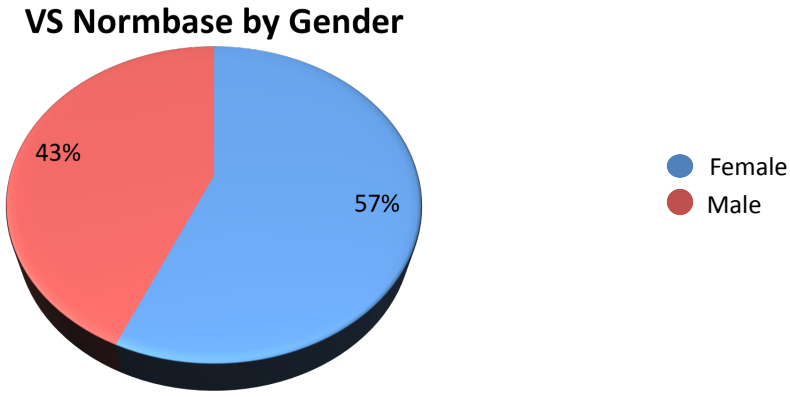
Predicting **Future Success**	R2 Partial	R2 Model
Trust	,5761	,5761
Motivation	,0257	,6018
Execution	,0009	,**6027**

Norm Group Characteristics

The Vital Signs database includes organizations, teams, and individuals from around the globe. The following graphs provide an overview of the norm base:

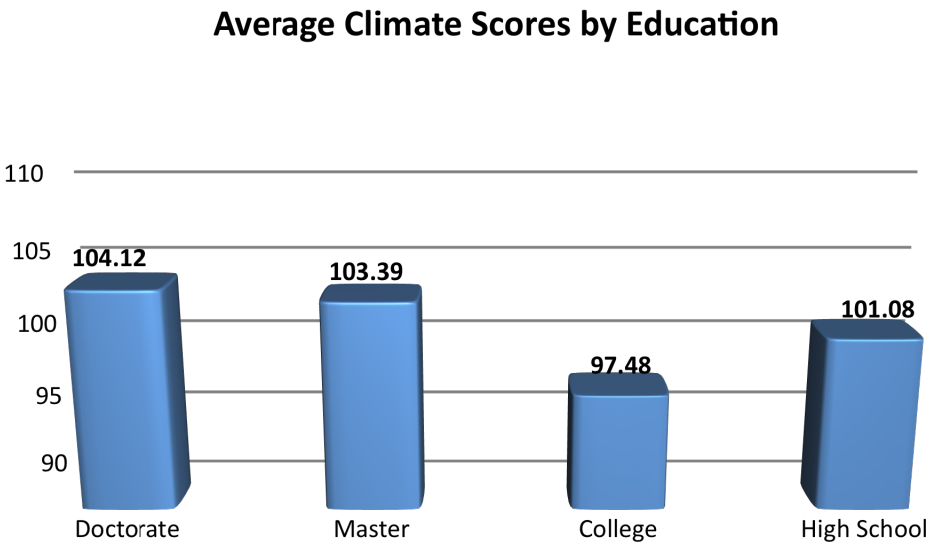


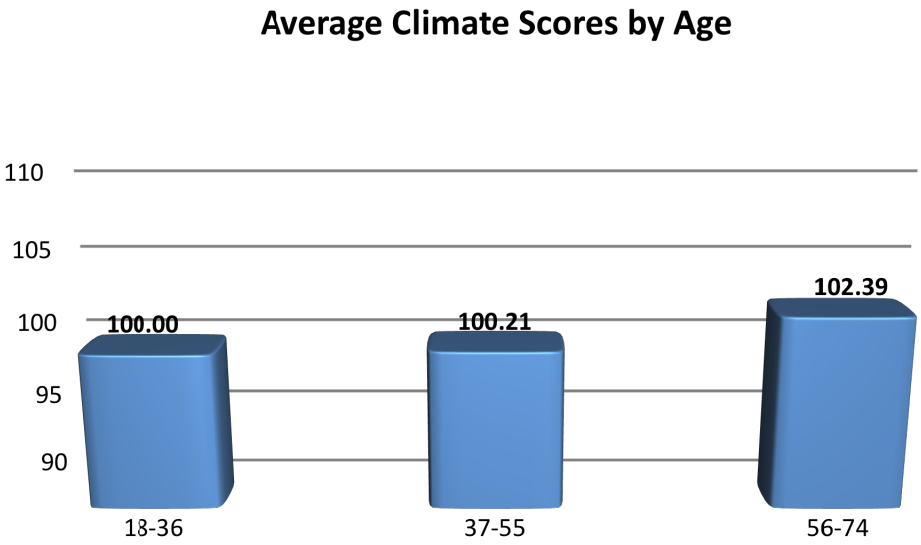




Norm Base Variations

The mean score on climate is 100; there are slight variations by demographics as follows:





Average Climate Scores by Gender