



U.S. Army Research Institute for the Behavioral & Social Sciences

# FACT SHEET



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## Selecting Soldiers for Success: Non-Cognitive Measures

Each individual has a unique set of personal characteristics. These characteristics determine the individual's suitability for an Army career and for different military occupational specialties.

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has been working to improve the Army's measurement of these individual characteristics to maximize Soldier success, both in their initial training and on-the-job. This fact sheet provides information on ARI's research and application of measures that assess what we call "non-cognitive" characteristics.

### Non-cognitive vs. Cognitive Characteristics

"Non-cognitive" is a term used to describe all of the personality and motivational characteristics of an individual, other than physical and cognitive characteristics. Cognitive characteristics refer to an individual's capability to acquire, process and retain information. They are measured largely with tests of mathematics knowledge and verbal ability. The Armed Services Vocational Aptitude Battery (ASVAB) is currently composed of nine such measures.



*Army Recruits taking Oath*

Research has demonstrated that the ASVAB is a strong predictor of an individual's capacity to learn knowledge and skills. Consequently, the Army uses the ASVAB, as well as education level, as primary screening tools for managing enlisted Soldier selection and assignment.

The ASVAB, however, does not predict the motivational aspects of job performance. To identify recruits who have the motivation to succeed, ARI is developing instruments that measure these non-cognitive characteristics.



*Infantry Graduating Class*

## Measuring Non-cognitive Characteristics

ARI has developed three types of non-cognitive instruments: temperament, decision-making, and person-environment fit. **Temperament inventories** measure job-relevant attributes such as dependability, work orientation, leadership, and stress tolerance. **Decision-making tests** require the individual to make judgments about the most effective action in a realistic situation. Decision-making can be seen as a combination of cognitive and non-cognitive components. **Person-environment fit measures** assess Soldiers' work values and preferences in relation to Army jobs.

### NON-COGNITIVE INSTRUMENTS

- Temperament Inventories
  - Assessment of Individual Motivation
  - Rational Biodata Inventory
- Decision-making Tests
- Person-environment Fit measures

Research findings demonstrate that ARI's non-cognitive measures predict important outcomes above and beyond the prediction provided by the ASVAB, such as whether Soldiers will complete their first term of service and whether they intend to stay in the Army for a career. Non-cognitive

measures are also related to components of non-commissioned officer and commissioned officer performance on-the-job (e.g. job effort), as well as performance in special assignments such as recruiter, drill sergeant, and Special Forces.

## Applying Non-cognitive Measures to Reduce Attrition

One of the recent applications of ARI's non-cognitive measures is in the Tier Two Attrition Screen (TTAS) that is being used to reduce the attrition risk of non-high school diploma graduate (NHSDG) applicants. The Army places a premium on recruiting high school diploma graduates (HSDGs) because the first-term attrition rate among HSDGs is about one-third lower than the rate for NHSDGs. However, many NHSDGs do complete their enlistments and become good Soldiers. Identifying Soldiers prior to accession who are likely to succeed would help the Army recruit only the best candidates from this group.

To identify the best NHSDGs, the TTAS combines several measures from the motivational, mental, and physical fitness domains that are related to whether a new recruit will leave prior to completing his or her first term. The motivational aspect of the tool is measured by the ARI temperament inventory, AIM. Research found that NHSDG recruits who exceed the standard score set for the TTAS have a first term attrition rate more similar to those of high school graduates. In 2005, TTAS was implemented nationwide as part of the NHSDG market expansion.

Ongoing ARI research continues to examine relationships between non-cognitive measures such as the AIM, and valued Army outcomes such as job performance, attrition, and career intentions, for a variety of selection and classification applications.

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