Driver Inventory
Behavior Data Systems Inc.

DRIVER INVENTORY INTRODUCTION

Motor vehicle crashes are among the leading causes of death in the United States (NHTSA, 2012) and while crash fatalities have declined, the numbers of distracted driving incidents are on the rise. The DI was designed to provide relevant driver risk-related information including information on the behavioral patterns and traits relevant to understanding problem and high risk drivers. Factors associated with driving risk include impaired driving, aggressive driving, personality traits, and previous traffic violations (Buntain-Rickles & Rivara, 1995; NHTSA, 2012).

The Driver Inventory (DI) was developed to help meet court-related assessment needs including diversion programs, intake-referral settings, and probation departments. The DI provides quantitative information using empirically based measures (scales) which independently generate risk (percentile) scores. Scale development is based upon 20 years of research.

The DI is a brief, easily administered and interpreted test that is specifically designed for court related assessments. The DI is composed of 124 true/false and multiple-choice items that comprise 5 scales or measures that evaluate constructs and behaviors associated with driver risk. The DI requires 25 to 30 minutes for completion and can be administered individually or in groups. The language of the DI is direct, non-offensive and uncomplicated making the DI appropriate for people with sixth grade or higher reading abilities.

Drivers Inventory Scales

1. **Truthfulness Scale**
2. **Aggressiveness Scale**
3. **Driver Risk Scale**
4. **Self-Esteem Scale**
5. **Stress Coping Abilities Scale**

The DI represents the latest developments in psychometric techniques and computerized technology. The DI can be administered on a computer (PC compatible) screen or by using paper-pencil test booklets. Regardless of how the DI is administered, all tests are scored and interpreted using a computer which generates the DI reports. DI reports are available within three minutes of test completion. Automated scoring and interpretive procedures help ensure objectivity and accuracy. The DI Windows version also has an optional human voice audio presentation that presents the test with accompanying auditory presentation of the text seen on the computer screen. Additionally, the DI is available on Professional Online Testing Solution's online testing platform.

The DI is to be used in conjunction with a review of available records and test taker interview. No decision or diagnosis should be based solely on DI results. Assessment is not to be taken lightly, as the resulting decisions drastically affect peoples' lives.

UNIQUE FEATURES

This section discusses the unique features of the Driver Inventory (DI) including Truth Correction, Risk Ranges, the DI database, and HIPPA compliance.

Truth Correction

A sophisticated psychometric technique permitted by computerized technology involves "truth-corrected" scores which are calculated individually for each DI scale. Since it would be naive to assume everybody responds truthfully while completing any self-report test, the Truthfulness Scale was developed. The Truthfulness Scale establishes how honest or truthful a person is while completing the DI. The Truthfulness Scale applies a truth-correction factor so that each scale score is referred to as a Truth-Corrected scale score. Each DI scale is scored independently of the other scales. DI scale scoring equations combine client pattern of responding, Truthfulness Scale and prior history. Truth-Corrected scale scores are converted to the percentile scores that are reported in the client DI report.

Correlation's between the Truthfulness Scale and all other scales permit identification of error variance associated with untruthfulness. This error variance can then be added back into scale scores, resulting in more accurate "Truth-Corrected" scores. Unidentified denial or untruthfulness produces inaccurate and distorted results. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide. Truth-Corrected scores are more accurate than raw scores.

Risk Range Percentile Scores

For each DI scale respondents are classified into four risk ranges: Low Risk (zero to 39th percentile), Medium Risk (40th to 69th percentile), Problem Risk (70th to 89th percentile), and Severe Problem (90th to 100th percentile). Risk ranges represent degree of severity. Risk ranges were established by converting raw scores to percentile scores by using cumulative percentage distributions (Behavior Data Systems, 2012). This is similar to the way in which students are assigned grades or scores for grading purposes in school. The 70th percentile is often used for passing grades and this same percentile initially began as a working criterion. Similarly, the 90th percentile is a benchmark for identifying severe problems. Early instrument development included the use of content experts to confirm the proposed risk ranges. Data analyses, in combination with field reports from experienced evaluators have confirmed that these percentile categories provide accurate identification of problem behavior (Behavior Data Systems, 2012).

In addition to establishing risk thresholds, the risk ranges serve an important role when interpreting Truthfulness Scale scores. A truthfulness concern is identified when a Truthfulness Scale score is at or above the Problem Risk range (70th percentile). These respondents are typically cautious, guarded or may be defensive in their answers. Scores in the Problem Risk range should be interpreted cautiously. Severe problem scores on the Truthfulness Scale (90th percentile and above) invalidates all scale scores. Classifying offenders according to pre-defined risk ranges provides an efficient and reliable solution for determining risk (Behavior Data Systems, 2012).

DI Database

Every time a DI is scored the data is automatically stored on the disc/flash drive for later inclusion in the DI database. When the preset number of tests are administered the disc is returned for replacement, and the test data contained on these used discs is transferred, using confidential (no names) procedures, to the DI database for later analysis. This database is statistically analyzed annually, at which time DI test items are adjusted to reflect demographic changes or trends that might have occurred. This unique and proprietary database also enables the formulation of annual summary reports that are descriptive of the populations that are tested. Summary reports provide important information which may inform budgeting, resource allocation, recruitment, training, and program development.

Confidentiality (Delete Client Names)

Many agencies and programs are rightfully concerned about protecting their clients' confidentiality. The proprietary Delete Client Names option is provided to allow deletion of client names from test discs prior to their being returned for inclusion in the DI database. This is optional and once the names have been deleted they are gone and cannot be retrieved. Deleting client names does not delete demographic information or test data. It only deletes the client names when the option is used. The option is available at any time and can be used whether the disc is full or not. Once the client names are deleted there can be no further editing of the client names which ensures client confidentiality.

SCALE DESCRIPTIONS

DI scales were developed from large item pools. Initial item selection was a rational process based upon clearly understood definitions of each scale. Content validity for the test was established using subject matter experts from the field of psychology and corrections. Initial items and scales were analyzed for final test selection and only those with the best statistical properties were retained. **Final test and item selection was based on each item's statistical properties**. It is important that users of the DI familiarize themselves with the definition of each scale. For that purpose a description of each DI scale follows.

Truthfulness Scale: The Truthfulness scale uses 22 true/false items to measure how "truthful" the client was while completing the DI. This type of a scale is a necessary, if not essential, requirement for any test involved in court-related procedures. Since the outcome of a person's test score could affect their driving privileges at the very least, or result in more serious consequences, it would be naive to believe that offenders answer all questions truthfully. All interview and self-report test information is subject to the dangers of untrue answers due to defensiveness, guardedness, or deliberate falsification. The Truthfulness Scale identifies these self-protective, recalcitrant, and guarded behaviors which minimize or even conceal self reported information. The Truthfulness Scale also establishes that the client understood the test items that he or she was responding to.

Aggression Scale: Aggressive behavior characterized by verbal aggression, hostile actions, and anger are measured by the Aggression Scale. This scale consists of 20 true/false items and is used to measure the expression of aggression in everyday experiences as well as behind the wheel. Driver aggression and acts aggressive driving have been linked to motor vehicle accidents and other criminal acts. The National Council on Alcoholism, (NCA Newsletter, 1984) noted that "research results indicated drivers' potential for risk-taking behavior may exist independently of alcohol use, and manifest itself as aggressive irresponsibility." Identifying aggression has implications for risk classification and subsequent interventions to address dangerous driving behaviors.

Driver Risk Scale: The Driver Risk scale is an independent measure of the respondent being a risk, independent of that person's involvement with alcohol or drugs. Mortimer, et. al. (1971)[1] concluded that alcoholics were significantly more involved in inappropriate driving behavior and moving violations. Selzer (1971)[2] concluded that for maximal screening effectiveness, test results and arrest records be used jointly. Identification of driver risk independent of chemical dependency also is helpful in detecting the abstaining, yet irresponsible or distracted driver.

The National Highway Traffic Safety Administration (NHTSA) concluded **"One of the DI scales is designed to detect irresponsible driving and provides an assessment for driver risk, a particularly useful feature for evaluating the DWI offender that does not exist in any other instrument we reviewed"** (DOT HS 807 475).

Self-Esteem Scale: The self-esteem scale uses a 4-point rating scale to measure perceived self-worth and self-efficacy. This 30 item scale measures feelings of confidence, acceptance, and responsibility, as well as indicators of insecurity, hostility, and discontent. This scale allows for rapid self-rating wherein test takers describe their own self-esteem in words commonly used in everyday life. Positive self-esteem and self-efficacy can moderate the effects of stress (Agnew 1992; Aseltine, Gore, & Gordon, 2000). Self-esteem as a moderator of stress has implications for court mandated interventions which may be able to ameliorate problems associated with driving abilities.

Stress Coping Abilities Scale: The Stress Quotient Scale (renamed the Stress Coping Abilities Scale) is a measure of the respondent's ability to cope with stress. How effectively one copes with stress determines whether or not stress affects one's overall adjustment and Driving abilities. Stress exacerbates other symptoms of emotional as well as substance abuse-related problems. Markedly impaired stress coping abilities are frequently correlated with other emotional and psychological problems. A high risk (90 to 100 percentile) score on the Stress Quotient scale is indicative of markedly impaired stress coping abilities and likely reflects other identifiable mental health problems. The Stress Quotient scale is also significantly correlated with other indices of emotional problems that may affect a person's driving abilities.

EMPIRICAL RESEARCH

The Driver Inventory (DI) validation studies were conducted with established Minnesota Multiphasic Personality Inventory (MMPI) scales as well as Polygraph examinations and other reports. Reliability and validity studies have been conducted on substance abuse inpatients, outpatients, college students, job applicants, defendants, diversion program attendees, probationers, inmates and counseling patients.

This document first presents the earlier studies that investigated the Stress Coping Abilities Scale. The research represented in this document is reported chronologically -- as it occurred. Chronological presentation enables the reader to follow the evolution of the DI into a state-of-the-art assessment instrument. More recent studies (toward the end of this document) are most representative of current DI statistics.

Stress Quotient

The Stress Quotient (SQ) or Stress Coping Abilities Scale is based upon the following mathematical equation:

$$SQ = CS/S \times k$$

The Stress Quotient (SQ) scale is a numerical value representing a person's ability to handle or cope with stress relative to their amount of experienced stress. CS (Coping Skill) refers to a person's ability to cope with stress. S (Stress) refers to experienced stress. k (Constant) represents a constant value in the SQ equation to establish SQ score ranges. The SQ includes measures of both stress and coping skills in the derivation of the Stress Quotient (SQ) score. The better an individual's coping skills, compared to the amount of experienced stress, the higher the SQ score.

The Stress Quotient (SQ) scale equation represents empirically verifiable relationships. The SQ scale (and its individual components) lends itself to research. Nine studies were conducted to investigate the validity and reliability of the Stress Quotient or Stress Coping Abilities Scale.

Validation Study 1: This study was conducted (1980) to compare SQ between High Stress and Low Stress groups. The High Stress group (N=10) was comprised of 5 males and 5 females. Their average age was 39. Subjects for the High Stress group were randomly selected from outpatients seeking treatment for stress. The Low Stress group (N=10) was comprised of 5 males and 5 females (average age 38.7) randomly selected from persons not involved in treatment for stress. High Stress group SQ scores ranged from 32 to 97, with a mean of 64.2. Low Stress group SQ scores ranged from 82 to 156, with a mean of 115.7. The t-test statistical analysis of the difference between the means of the two groups indicated that the High Stress group had significantly higher SQ scores than the Low Stress group ($t = 4.9$, $p < .001$). This study shows that the SQ or Stress Coping Abilities Scale is a valid measure of stress coping. The Stress Coping Abilities Scale significantly discriminates between high stress individuals and low stress individuals.

Validation Study 2: This study (1980) evaluated the relationship between the SQ scale and two criterion measures: Taylor Manifest Anxiety Scale and Cornell Index. These two measures have been shown to be valid measures of anxiety and neuroticism, respectively. If the SQ or Stress Coping Abilities Scale is correlated with these measures it would indicate that the SQ or Stress

Coping Abilities Scale is a valid measure. In the Taylor Manifest Anxiety Scale, high scores indicate a high level of anxiety. Similarly, in the Cornell Index high scores indicate neuroticism. Negative correlation coefficients between the two measures and the SQ were expected because high SQ scores indicate good stress coping abilities. The three tests were administered to forty-three (43) subjects selected from the general population. There were 21 males and 22 females ranging in age from 15 to 64 years. Utilizing a product-moment correlation, SQ scores correlated -.70 with the Taylor Manifest Anxiety Scale and -.75 with the Cornell Index. Both correlations were significant, in the predicted direction, at the $p < .01$ level. These results support the finding that the Stress Coping Abilities Scale is a valid measure of stress coping abilities. The reliability of the SQ was investigated in ten subjects (5 male and 5 female) randomly chosen from this study. A split-half correlation analysis was conducted on the SQ items. The product-moment correlation coefficient (r) was .85, significant at the $p < .01$ level. This correlation indicates that the SQ or Stress Coping Abilities Scale is a reliable measure. These results support the Stress Coping Abilities Scale as a reliable and valid measure.

Validation Study 3: In this study (1981) the relationship between the SQ Scale and the Holmes Rahe Social Readjustment Rating Scale (SRRS) was investigated. The SRRS, which is comprised of a self-rating of stressful life events, has been shown to be a valid measure of stress. Three correlation analyses were done. SRRS scores were correlated with SQ scores and separately with two components of the SQ scale: Coping Skill (CS) scores and Stress (S) scores. It was hypothesized that the SQ and SRRS correlation would be negative, since subjects with lower SQ scores would be more likely to either encounter less stressful life events or experience less stress in their lives. It was also predicted that subjects with a higher CS would be less likely to encounter stressful life events, hence a negative correlation was hypothesized. A positive correlation was predicted between S and SRRS, since subjects experiencing more frequent stressful life events would reflect more experienced stress. The participants in this study consisted of 30 outpatient psychotherapy patients. There were 14 males and 16 females. The average age was 35. The SQ and the SRRS were administered in counterbalanced order. The results showed there was a significant positive correlation (product-moment correlation coefficient) between SQ and SRRS ($r = .4006$, $p<.01$). The correlation results between CS and SRRS was not significant ($r = .1355$, n.s.). There was a significant positive correlation between S and SRRS ($r = .6183$, $p<.001$). The correlations were in predicted directions. The significant correlations between SQ and SRRS as well as S and SRRS support the construct validity of the SQ or Stress Coping Abilities Scale.

Validation Study 4: This validation study (1982) evaluated the relationship between factor C (Ego Strength) in the 16 PF Test as a criterion measure and the SQ in a sample of juveniles. High scores on factor C indicate high ego strength and emotional stability, whereas high SQ scores reflect good coping skills. A positive correlation was predicted because emotional stability and coping skills reflect similar attributes. The participants were 34 adjudicated delinquent adolescents. They ranged in age from 15 to 18 years with an average age of 16.2. There were 30 males and 4 females. The Cattell 16 PF Test and the SQ scale were administered in counterbalanced order. All subjects had at least a 6.0 grade equivalent reading level. The correlation (product-moment correlation coefficient) results indicated that Factor C scores were significantly correlated with SQ scores ($r = .695$, $p<.01$). Results were significant and in the

predicted direction. These results support the SQ or Stress Coping Abilities Scale as a valid measure of stress coping abilities in juvenile offenders.

In a subsequent study the relationship between factor Q4 (Free Floating Anxiety) on the 16 PF Test and S (Stress) on the SQ scale was investigated. High Q4 scores reflect free floating anxiety and tension, whereas high S scores measure experienced stress. A high positive correlation between Q4 and S was predicted. There were 22 of the original 34 subjects included in this analysis since the remainder of the original files was unavailable. All 22 subjects were male. The results indicated that Factor Q4 scores were significantly correlated (product-moment correlation coefficient) with S scores ($r = .584$, $p<.05$). Results were significant and in predicted directions. The significant correlation's between factor C and SQ scores as well as factor Q4 and S scores support the construct validity of the SQ scale.

Validation Study 5: Psychotherapy outpatient clients were used in this validation study (1982) that evaluated the relationship between selected Wiggin's MMPI (Minnesota Multiphasic Personality Inventory) supplementary content scales (ES & MAS) as criterion measures and the SQ scale. ES measures ego strength and MAS measures manifest anxiety. It was predicted that the ES and SC correlation would be positive, since people with high ego strength would be more likely to possess good coping skills. Similarly, it was predicted that MAS and S correlations' would be positive, since people experiencing high levels of manifest anxiety would also likely experience high levels of stress. The subjects were 51 psychotherapy outpatients ranging in age from 22 to 56 years with an average age of 34. There were 23 males and 28 females. The MMPI and the SQ were administered in counterbalanced order. The correlation (product-moment correlation coefficient) results indicated that ES and CS were positively significantly correlated ($r = .29$, $p<.001$). MAS and S comparisons resulted in an r of .54, significant at the $p < .001$ level. All results were significant and in predicted directions.

In a related study (1982) utilizing the same population data (N=51) the relationship between the Psychasthenia (Pt) scale in the MMPI and the S component of the SQ scale was evaluated. The Pt scale in the MMPI reflects neurotic anxiety, whereas the S component of the SQ scale measures stress. Positive Pt and S correlations were predicted. The correlation (product-moment correlation coefficient) results indicated that the Pt scale and the S component of the SQ scale were significantly correlated ($r = .58$, $p<.001$). Results were significant and in the predicted direction. The significant correlation's between MMPI scales (ES, MAS, Pt) and the SQ scale components (CS, S) support the construct validity of the SQ or Stress Coping Abilities Scale.

Reliability Study 6: The reliability of the Stress Quotient (SQ) or Stress Coping Abilities Scale was investigated (1984) in a population of outpatient psychotherapy patients. There were 100 participants, 41 males and 59 females. The average age was 37. The SQ was administered soon after intake. The most common procedure for reporting inter-item (within test) reliability is with Coefficient Alpha. The reliability analysis indicated that the Coefficient Alpha of 0.81 was highly significant ($F = 46.74$, $p<.001$). Highly significant inter-item scale consistency was demonstrated.

Reliability Study 7: (1985) The reliability of the Stress Quotient (SQ) or Stress Coping Abilities Scale was investigated in a sample of 189 job applicants. There were 120 males and 69 females

with an average age of 31. The SQ was administered at the time of pre-employment screening. The reliability analysis indicated that the Coefficient Alpha of 0.73 was highly significant ($F = 195.86$, $p<.001$). Highly significant Cronbach Coefficient Alpha reveals that all SQ scale items are significantly ($p<.001$) related and measure one factor or trait.

Validation Study 8: Chemical dependency inpatients were used in a validation study (1985) to determine the relation between MMPI scales as criterion measures and the Stress Quotient (SQ) Scale or Stress Coping Abilities Scale. The SQ is inversely related to other MMPI scales, consequently, negative correlation's were predicted. The participants were 100 chemical dependency inpatients. There were 62 males and 38 females with an average age of 41. The SQ and the MMPI were administered in counterbalanced order. The reliability analysis results indicated that the Coefficient Alpha of 0.84 was highly significant ($F = 16.20$, $p<001$). Highly significant inter-item scale consistency was demonstrated.

The correlation (product-moment correlation coefficient) results between the Stress Quotient (SQ) and selected MMPI scales were significant at the $p < .001$ level and in predicted directions. The SQ correlation results were as follows: Psychopathic Deviate (-0.59), Psychasthenia (-.068), Social Maladjustment (-0.54), Authority Conflict (-0.46), Taylor Manifest Anxiety Scale (-0.78), Authority Problems (-0.22), and Social Alienation (-0.67). The most significant SQ correlation was with the Taylor Manifest Anxiety Scale. As discussed earlier, stress exacerbates symptoms of impaired adjustment as well as emotional and attitudinal problems. These results support the Stress Quotient or Stress Coping Abilities Scale as a valid measure of stress coping abilities.

Validation Study 9: In a replication of earlier research, a study (1986) was conducted to further evaluate the reliability and validity of the Stress Quotient (SQ). The participants were 212 inpatients in chemical dependency programs. There were 122 males and 90 females with an average age of 44. The SQ and MMPI were administered in counterbalanced order. Reliability analysis of the SQ scale resulted in a Coefficient Alpha of 0.986 ($F = 27.77$, $p<.001$). Highly significant inter-item scale consistency was again demonstrated. Rounded off, the **Coefficient Alpha for the SQ was 0.99**.

In the same study (1986, inpatients), product-moment correlations were calculated between the Stress Quotient (SQ) and selected MMPI scales. The SQ correlated significantly (.001 level) with the following MMPI scales: Psychopathic Deviate (Pd), Psychasthenia (Pt), Anxiety (A), Manifest Anxiety (MAS), Ego Strength (ES), Social Responsibility (RE), Social Alienation (PD4A), Social Alienation (SC1A), Social Maladjustment (SOC), Authority Conflict (AUT), Manifest Hostility (HOS), Suspiciousness/Mistrust (TSC-II), Resentment/Aggression (TSC-V) and Tension/Worry (TSC-VII). **All SQ correlations with selected MMPI scales were significant (at the .001 level of significance) and in predicted directions.** These results support the SQ scale or Stress Coping Abilities Scale as a valid measure of stress coping abilities.

The studies cited above demonstrate empirical relationships between the SQ scale (Stress Coping Abilities Scale) and other established measures of stress, anxiety and coping skills. This research demonstrates that the Stress Quotient (SQ) or Stress Coping Abilities Scale is a reliable and valid measure of stress coping abilities. The SQ has high inter-item scale reliability. The SQ also has

high concurrent (criterion-related) validity with other recognized and accepted tests. The SQ scale permits objective (rather than subjective) analysis of the interaction of these important variables. In the research that follows, the **Stress Quotient** or **SQ** is also referred to as the **Stress Coping Abilities Scale**.

DRIVER INVENTORY RESEARCH FINDINGS

Driver Inventory (DI) research is reported in a chronological format, reporting studies as they occurred. This gives the reader the opportunity to see how the DI evolved in to a state-of-the-art risk and needs assessment instrument. For current information refer to the more recent studies near the end of this research document.

Reliability Study 10: The reliability of the DI (1997) was established using data from 164 Canadian test takers. There were 116 males, 22 females, and 26 without gender specified.

The most common procedure for reporting internal consistency of an assessment is Cronbach's alpha. The professionally accepted reliability standard for this type of instrument is .70-.80 (Murphy & Davidshofer, 2001). Table 1 summarizes reliability coefficients.

Table 1: Reliability Analysis DI (N = 164, 1997)

Scales	Cronbach's Alpha
Truthfulness	.84
Aggression	.85
Driver Risk	.62
Stress Coping Abilities	.95

Reliability Study 11: The reliability of the DI (1998) was established using data from 128 Canadian test takers. There were 111 males, 17 females.

The most common procedure for reporting internal consistency of an assessment is Cronbach's alpha. The professionally accepted reliability standard for this type of instrument is .70-.80 (Murphy & Davidshofer, 2001). Table 2 summarizes the results of the analysis and revealed high reliability coefficients.

Table 2: Reliability Analysis DI (N = 128, 1998)

Scales	Cronbach's Alpha
Truthfulness	.88
Aggression	.84
Driver Risk	.82
Self-Esteem	.93
Stress Coping Abilities	.95

Validity and Reliability 12:

This validation and reliability study (2012) used data collected via disc/flash drive received through November 2012. Validation was established using contrast groups. When individuals known to have more severe problems or symptoms receive higher scale scores than individuals known to have fewer problems or symptoms, the test is said to have evidence of construct validity (DeVon et al., 2007).

There were 268 drivers who submitted data for analysis. 74% (197) were males; 14% (38) were females; 12% (33) were missing data. 7% (19) had less than a high school education; 43% (116) had graduated high school, approximately 20% (53) had more than a high school education; 30% (80) of data were missing. Driving violation information 27% of drivers had one or more demeritis; 50% had one or more driving violations; 23% had one or more accidents; and 6% had one more DUI convictions.

Table 3. DVI Validity Findings (N=268, 2012)

Scales	First-time Offender Mean Score	Multiple Offender Mean Score	t-value	Significance
Truthfulness	10.55	8.31	1.68	**Not significant**
Aggressiveness	13.5	20.4	-.560	**Not significant**
Driver	12.1	26.1	-10.22	**<.001**
Self- Esteem	29.7	28.2	.785	**Not significant**
Stress Coping	133.4	121.6	1.75	**Not significant**

Offenders were categorized into First-time and Multiple Offenders. First-time offenders are defined as having one traffic violation; Multiple offenders had two or more traffic violations. It is anticipated that Multiple Offenders' mean scale scores would be higher than First-Time offenders, indicating more severe symptoms or problems. On the Stress Coping Abilities Scale and Self Esteem Scale scoring is reversed, thereby a lower score for Multiple offenders would indicate more severe problems and poorer stress management skills.

A comparison between the mean scores of first-time offenders and multiple offenders found higher mean scale scores for multiple offenders on the Aggressiveness, Driver Risk and Self-Esteem Scales. First-time offenders had higher mean scale scores on the Truthfulness and as expected on the Self Esteem Scale and Stress Coping Abilities Scales. Higher scores for first-time offenders on the Truthfulness Scale have been seen in previous findings and may be associated with offenders' level of experience with the criminal justice system. These individuals may engage in more denial and minimizing behaviors whereas, multiple offenders may have learned that denial and minimizing are usually detected.

T-test analyses were conducted to examine whether the differences between mean scores were statistically significant. Adjustments were made to the *t* and df to account for differences in variance. **Results indicated that for the Driver Scale, the differences were statistically significant.** The non significant results for the remaining scale are likely the result of small differences in mean scores and small sample size. As a general rule, scores obtained by multiple offenders demonstrated more severe problems. These results support the validity of the DI and demonstrate that the DI effectively differentiates between offenders that are known to have more severe problems (multiple offenders) than first time offenders.

Table 4 summarizes the reliability coefficients for this analysis. Scales meet or exceed (.70-.80) professionally accepted levels for this type of instrument.

Table 4. Reliability Analysis DI (N=268, 2012)

Scales	Cronbach's Alpha
Truthfulness	.84
Aggression	.87
Driver Risk	.70
Self-Esteem	.88
Stress Coping Abilities	.91

SUMMARY

This document is not intended to be an exhaustive compilation of Driver Inventory (DI) research; however, it does summarize many research studies supporting the reliability, validity, and accuracy of the DI. Moreover, ongoing DI database research ensures an increasingly accurate picture of DI drivers and the risk they represent. It is reasonable to conclude the DI provides a sound empirical basis for driver risk assessment and subsequent decision making.