

TABLE OF CONTENTS

Chapter 1: INTRODUCTION	1
DEVELOPMENT OF THE INSTRUMENT	1
Using Job Match Patterns	1
Chapter 2: SALES QUALITIES & BEHAVIORS	3
Overview	3
Development of the Sales Indicator	4
The Sales Success Qualities	4
The Addition of the Sales Drive Scale	4
The Critical Sales Behaviors	4
Development of the Distortion Scale	5
Descriptive Statistics	7
Reliability Analyses	7
Coefficient Alpha Reliability Analysis	7
Validity	8
Intercorrelation of PSI Scales & other ASSESSMENTS	10
The Guilford-Zimmerman Temperament Survey (GZTS)	10
Gordon Personal Profile – Inventory (GPP-I)	12
California Psychological Inventory (CPI)	14
The Profiles Performance Indicator (PPI)	17
The Criterion-Related Validity Approach	18
Research Designs Used for Criterion-Related Validation Studies	19
Concurrent Validity	19
Validation of the Distortion Scale	29
Ethnicity and Gender	30
Summary and Conclusions	32
APPENDIX A	
PROFILES SALES INDICATOR USER'S GUIDE	
APPENDIX B	
SAMPLE REPORTS	
APPENDIX C	
PROFILES SALES INDICATOR TEST BOOKLET	
BIBLIOGRAPHY	

Chapter 1: INTRODUCTION

DEVELOPMENT OF THE INSTRUMENT

More than twenty-five thousand job applicants and incumbents have participated in the development of the Profile Sales Indicator. These sample groups represent a diverse cross section of ages, ethnic groups, income levels, educational levels, job titles, companies and industries. The Profile Sales Indicator is the product of a collaboration between several test development psychologists and specialists coordinated by Profiles International, Inc.

The Profile Sales Indicator investigates Sales Success Qualities as a part of evaluating how an individual fits into a particular sales job. However, all of these areas are not always required to differentiate between those who will do well in a position and those who may be overly challenged by that same position. All areas may be important for some job patterns; however, generally a few stand out for a given job match situation. By attending to each of the five Sales Success Qualities and how they interact, we enhance the opportunity to identify the factors that will lead to the best job fit. Appendix A contains a brief overview of all of the scales within the Profile Sales Indicator.

Using Job Match Patterns

The job match process for The Profile Sales Indicator represents an effective approach that minimizes the time required to efficiently describe jobs, people, and their degree of match. The descriptive process usually starts by examining the score pattern of those who are most successful within a position at a particular organization. This pattern of scores across the various dimensions measured by The Profile Sales Indicator serves as the “sales profile” upon which the job matching is based.

The job patterns developed for the Sales Indicator each consist of a range along each scale where the scores of the most effective performers tend to fall. Because they are not absolute, the typical pattern will be three to five units wide. The more outside this range (job pattern) a score falls, the less likely there will be a good fit of that individual to the job in regard to that particular factor. In the reports, job match is reported as a percent match to a specific job pattern. This allows for a variation between persons who may still share a good job fit to a position.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

By using a job pattern, it becomes easy to quickly identify where individuals will tend to fit well into positions, and where they might have adjustments to make. This information is important for matching individuals to careers, and is the basis for the overall percent match used by the Sales Indicator report.

The scores on each scale of The Profile Sales Indicator are reported on a STEN scale starting with a one at the low end and going to a ten on the high end. The raw scores have been normed so that the distribution of scores for the typical working population will fall on each scale with a normal distribution. In other words, on each scale about 2/3rds of the scores will fall at 4, 5, 6 or 7, and as you move toward either end of the scale, the frequency of scores will taper off.

Job Match Patterns may be used to evaluate the match to various jobs for anyone who has taken The Profile Sales Indicator. The Job Match Pattern for each career is composed of a range of scores for each scale. This range represents the area where those who are expected to fit most easily into the job tend to score. The more outside this range (pattern) a score falls, the less likely there will be a good fit of that individual to the job in regard to that particular factor. As mentioned earlier, job match is reported as a percent match to a specific job pattern.

Because the interpretations generated by The Profile Sales Indicator are provided in reports written in common business language, they require no psychological interpretation by the user. This allows The Profile Sales Indicator to be used by those with no special psychological training.

While this job pattern approach to matching individuals to a job provides information of great value, remember that the results from any test should be no more than a third of the final decision. The Sales Indicator is designed to aid businesses as a key step in the selection and placement of employees.

Chapter 2: SALES QUALITIES & BEHAVIORS

OVERVIEW

Research associated with The Profile Assessment was a part of the foundation of the traits measured in The Profile Sales Indicator. The Profile represents several years of ongoing factor analytic research, development and use. The Profile has been administered to thousands of job applicants and incumbents across the world.

The other foundation for the Sales Indicator is the Opinion & Attitude Survey (O&A) developed by Reid, Merrill, Brunson & Associates. The O&A is a short but comprehensive test of personality dimensions that are linked to job functioning in various settings. It offers:

- Data appropriate and normed for normal populations rather than clinical subgroups.
- A wide range of items that tap different attitudes and trait characteristics relevant to a variety of job functions.
- Standardization and reliability of test items and scales.
- Demonstrated validity for target populations within their particular work settings.

The current Profile Sales Indicator has been derived directly from portions of The Profile and O&A, with additional development unique to this test, namely the Sales Drive scale, as well as the descriptive output designed specifically for the Sales Indicator. Samples from various corporate settings have been gathered for ongoing research efforts to maintain accurate and timely statistics regarding the validity and impact of the current test form. Validation studies continue to be conducted at Profiles International Research and Development to support the strength of the current scales and norming data.

DEVELOPMENT OF THE SALES INDICATOR

The Sales Success Qualities

The Sales Success Qualities were developed by a panel of psychologists and sales professionals. This panel contributed their view of which behavioral traits or qualities were most important in selling. Five of these qualities were selected as the most important for success. The Sales Indicator questions were derived empirically from previous factor and item analyses. Factor analytic techniques were used to extract 4 personality dimensions that were shown to have significant relationships with successful sales qualities. These 4 Sales Success scales are depicted in **TABLE 2.1**.

TABLE 2.1: PSI SALES SUCCESS QUALITIES	
Competitiveness	Energy
Persistence	Self-Reliance

The Addition of the Sales Drive Scale

During the early developmental stages of the PSI, our team conducted an item analysis from the pool of items selected for the assessment. Although not all items were retained for the final version of the test, we discovered a strong combination of questions that suggested a reliable scale was present that had not been utilized before. Fifty-four items appeared to work well together, and by analyzing their content, it seemed that we had a compelling description of common sales drive and motivation. This scale shared a few items from the other scales, but was primarily unique in its item content.

Correlations with other instruments upheld our observations that this scale defines a candidate's internal drive to obtain results and move forward toward one's goals. Therefore, the Sales Drive scale was implemented into The Profiles Sales Indicator.

The Critical Sales Behaviors

Several areas considered to be fundamental for accomplishment in a sales environment are relevant, in light of the Sales Success Qualities measured by The Profiles Sales Indicator. A team of psychologists, sales professionals and other experts collaborated to derive seven Critical Sales Behaviors from these areas. The

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

panel quantified the diverse levels of proficiency one may find in a potential sales candidate and provided information to help describe such an individual. The seven Critical Sales Behaviors include:

- Prospecting
- Closing the sale
- Call Reluctance
- Self-starting
- Working with a team
- Building and maintaining relationships
- Compensation preference

These “scales” are derivative of a combination of the Sales Success Qualities and range from low to hi potential for every candidate. In most cases, high Sales Success Qualities can suggest a high potential in each Critical Sales Behavior, but this is not always the case. The third section of the Management Report provides statements to help define a candidate’s potential in each area and on occasion, one may find that the greatest potential for a particular behavior may rely upon a more well-rounded combination of qualities. This will become more apparent as one utilizes the assessment with a variety of sales roles.

Development of the Distortion Scale

The PSI contains a Distortion Scale, designed to measure a person’s tendency to create an exaggerated false positive impression. This scale consists of 9 questions and was developed rationally using questions endorsed consistently “Yes” or “No” by a sample of 282 job applicants.

For example, 98.9% of this sample responded “Yes” to the following question; “Have you ever been angry at anyone?” It can be inferred that an applicant who responds “No, I have never been angry at anyone” may be attempting to create a false positive impression or possibly has not read the question properly. While a response to any one of these questions is unusual, an incorrect response to several of these nine questions is a highly *infrequent* occurrence.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.2 indicates the percentage of the total sample that responded “yes” or “no” for each question.

TABLE 2.2: PERCENTAGE OF ENDORSEMENT FOR EACH DISTORTION QUESTION (N = 282)		
Distortion Question Numbers	Percent	
	Yes	No
Question 1	98.9%	*1.1%
Question 2	99.3%	*0.7%
Question 3	95.7%	*4.3%
Question 4	98.6%	*1.4%
Question 5	98.9%	*1.1%
Question 6	97.9%	*2.1%
Question 7	99.3%	*0.7%
Question 8	99.3%	*0.7%
Question 9	97.9%	*2.1%
Average percent	98.4%	1.6%

*Indicates the direction in which the question is keyed for Distortion response

According to TABLE 2.2, the range of Distortion-loading responses for the nine questions was from a low of 0.7% to a high of 4.3% for a sample of 282 individuals from sales and non-sales backgrounds. The average Distortion response was 1.6%.

DESCRIPTIVE STATISTICS

Following is a summary, **TABLE 2.3**, of the most recent descriptive statistics for the Sales Indicator.

TABLE 2.3- SALES SUCCESS QUALITIES, DESCRIPTIVE STATISTICS							
(N = 282)							
PSI Scales	Mean	Median	Mode	Standard Deviation	Minimum	Maximum	Standard Error
Competitiveness	21.07	22	23	5.30	6	29	.32
Self-Reliance	15.36	15	15	5.15	4	28	.31
Persistence	18.20	19	21	4.24	4	27	.25
Energy	19.83	21	21*	5.39	3	28	.32
Sales Drive	35.21	36	43	10.31	6	55	.61
Distortion	8.86	9	9	.60	1	9	.04

* multiple modes exist for this scale

As mentioned before, the Profile Sales Indicator (PSI) is the culmination of studies that derive from The Profile and Opinion & Attitude Survey, as well as current work specifically conducted with the PSI. Further reference to all current studies will refer to the name, “Profile Sales Indicator” (PSI) to generalize and simplify the results for the reader.

RELIABILITY ANALYSES

No measure can be of much value unless it measures in a reliable or consistent manner. Reliability refers to the consistency of test scores obtained by the same person when re-tested with the same test on different occasions. Since all types of reliability are concerned with the degree of consistency between two independently derived sets of test scores, they can all be expressed in terms of a correlation coefficient.

A correlation coefficient expresses the degree of relationship between two variables. This relationship is expressed as a decimal number ranging from .00 to 1.00 where 1.00 indicates perfect reliability and .00 indicates the absence of reliability. Although no test is a perfectly reliable instrument, test reliability correlation coefficients should be in the .70’s, .80’s and .90’s.

Coefficient Alpha Reliability Analysis

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

Coefficient alpha indicates the consistency of responses to individual test questions. The higher a test's coefficient alpha, the more consistent the questions are for that test. A test with a low coefficient alpha is a test that produces different or inconsistent scores each time the same person takes the test. A high coefficient alpha, however, indicates that the test produces similar or consistent scores each time the same person takes the test. **TABLE 2.4** contains coefficient alpha reliabilities for the five Sales Success Qualities.

TABLE 2.4—COEFFICIENT ALPHA, PSI	
N=282	
PSI Scales	Coefficient Alpha
Competitiveness	.81
Energy	.78
Self-Reliance	.85
Persistence	.76
Sales Drive	.91
Average	.82

According to **TABLE 2.4**, average alpha coefficient was .82, ranging from a low of .76 for the Persistence scale, to a high of .91 for the Sales Drive scale.

In conclusion, internal consistency of The Profile Sales Indicator was determined by calculating coefficient alpha reliability. This analysis indicates that the five Sales Success Qualities are reliable and produce consistent results. Due to the fact that the Distortion Scale is evaluated in a different manner, it was not included in the reliability analysis. As the Critical Sales Behaviors are metascales, their consistency is assured by their derivative Sales Success Qualities.

VALIDITY

Validity is the extent to which an assessment measures what it is supposed to measure. The concept of validity refers to the appropriateness or accuracy of inferences made about individuals based on test results. It is important from both a business and legal perspective that organizations answer the question regarding the validity of the inference underlying selection testing. If the inference is not valid then organizations stand to waste

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

their business investment in selection tests and risk legal challenges to their hiring and placement decisions.

Test validation refers to the process of gathering evidence to support the inference being made. Various approaches to gathering validity evidence will be described below.

The Construct Validity Approach

Construct validity refers to the extent to which a psychological measure is an accurate measure of a particular construct. Construct validity addresses the question, “What does this measure really measure, and how well does it measure what it was designed for and purported to measure?”

Although there are different methods for evaluating construct validity, two of the most informative methods are to examine the correlation coefficients: 1) among the scales within the new instrument and 2) between the new instrument and other psychological measures that have been shown to measure the same or similar constructs. The pattern of correlations should be consistent with expectations based on what these scales were intended to measure. Scales that measure related personality constructs should converge (i.e., be highly correlated) whereas scales that measure unrelated constructs should diverge (i.e., not be correlated).

Intercorrelation of PSI Scales

The PSI was designed to measure five primary dimensions of normal personality. **TABLE 2.5** contains the intercorrelations among the five PSI Sales Success Qualities for 282 job applicants and incumbents. We expected significant correlations to exist between our scales because they measure unique, yet common, qualities found in a particular kind of individual (one successful in sales).

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.5- PSI INTERCORRELATIONS					
(N = 282)					
	Energy	Comp.	Self-R.	Persist.	Sales D
Energy	1.00	.62	.50	.28	.65
Competitiveness		1.00	.62	.37	.85
Self-Reliance			1.00	.11	.81
Persistence				1.00	.40
Sales Drive					1.00

The highest correlation in **TABLE 2.5** was between the Self-Reliance and Sales Drive scales (.81). The high interrelatedness of these scales is directly related to the integral nature of each scale in defining a sales success potential in the average test taker. The lowest correlation among the scales (and yet still significant in many areas) is Persistence, which crosses over into the success qualities for other fields, as well. This means that there are those in the sample who may not have had a high potential for sales success (lower scores in most of the PSI scales) but who still occasionally scored highly in Persistence. This is because strong Persistence is consistently valued in so many different professions.

INTERCORRELATION OF PSI SCALES & OTHER ASSESSMENTS

This section of the Technical Report examines the statistical relationships between the PSI and two other measures of adult personality: the Guilford–Zimmerman Temperament Survey and Gordon Personal Profile – Inventory.

The Guilford-Zimmerman Temperament Survey (GZTS)

The GZTS is a measure of normal, adult personality. It is based on more than 30 years of research and has been documented in over 2,000 books and journal articles. Occupations profile data and norms include more than 15,000 individuals. The GZTS contains ten Sales Success Qualities. These scales are included in **TABLE 2.6**.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.6- GZTS SCALE DESCRIPTIONS	
GZTS Scale	Description
General Activity	Fast vs. Slow
Restraint	Self control vs. Impulsively
Ascendance	Dominance vs. Submissive
Sociability	Outgoing vs. Shy
Emotional Stability	High vs. Low
Objectivity	Objective vs. Subjective
Friendliness	Friendly vs. Aggressive
Thoughtfulness	Think It Through vs. Act It Out
Personal Relations	Positive vs. Negative
Masculinity/Femininity	Interest in Masc. vs. Fem. Activities
Vigor	High vs. Low Activity

The PSI and the GZTS were administered to 540 job applicants and incumbents over a one-year period. **TABLE 2.7** contains the correlations among the relevant PSI and GZTS scales. Due to the large sample size, many coefficients were significant beyond the .05 level. Therefore only coefficients of .40 or higher are included in **TABLE 2.7**.

TABLE 2.7- PSI AND GZTS CORRELATIONS			
(N = 540)			
GZTS Scales	PSI Scales		
	Enrg	Com	Self-R
General Activity	.79		
Ascendance		.68	
Friendliness			-.49

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

Both the PSI and the GZTS provide measures of factorially derived personality dimensions. Therefore, a comparison of these two measures is of particular interest. According to **TABLE 2.6**, the patterns of intercorrelations between PSI and the GZTS are largely consistent with what the scales are purported to measure. For example:

- For the PSI, there is strong evidence for two scales that line up on a one-to-one basis with two of the GZTS scales. These scales are:

PSI	GZTS	Correlations
Energy	General Activity	.79
Competitiveness	Ascendance	.68

Similarly, patterns of relationships involving the GZTS Friendliness scale and the PSI Self-Reliance scale were in the expected direction. The overlapping variance among these scales supports the view that friendly and obliging people tend to have a different attitude when compared with people who are considerably less dependent and reliant upon external structure. The significant but negative correlations between the GZTS Friendliness scale and the PSI Self-Reliance scale support the view that highly independent, self-sufficient people tend to be generally less indulging and accommodating, not so much in an “negative” sense, but rather in a “I prefer to make my own decisions” sense.

For the most part, the other GZTS scales show little in common with specific PSI scales and were not included in this report.

Gordon Personal Profile – Inventory (GPP-I)

The GPP-I provides a comprehensive description of normal personality functioning through the measurement of eight personality traits. The GPP-I is a self-report questionnaire, with questions presented in a forced-choice format. The GPP-I has 40 years of research, documentation and use with a wide variety of business organizations. The seven relevant GPP-I personality traits are shown in **TABLE 2.8**.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.8- GPP-I Scale Descriptions	
GPP-I Scale	Description
Ascendancy	Active vs. Passive role in Group Situations
Responsibility	High vs. Low
Emotional Stability	High vs. Low
Sociability	Socially Outgoing vs. Shy
Cautiousness	Careful vs. Impulsive
Original Thinking	Innovative vs. Conventional
Personal Relations	Positive vs. Negative

The PSI and the GPP-I were administered to 320 job applicants and incumbents over a one-year period. **TABLE 2.9** contains the intercorrelations among the relevant PSI and GPP-I scales. Once again, due to the large sample size, only those coefficients of .40 or higher were included in the table. According to **TABLE 2.9**, the patterns of intercorrelations are consistent with expectations.

TABLE 2.9- GPP-I AND PSI CORRELATIONS		
(N = 320)		
GPP-I Scales	PSI Scales	
	Energy	Competitiveness
Ascendancy		.72
Sociability		.52
Vigor	.67	

- For The PSI, there is considerable evidence for two scales that line up on a one-to-one basis with three of the GPP-I scales.
- Correlations of the GPP-I Ascendancy scale with the PSI Competitiveness scale are significant. This finding might be accounted for by a number of questions measuring competitiveness, assertiveness or verbal ascendancy, which are keyed in the PSI Competitiveness scale.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

- The highly significant correlation between PSI Energy and GPP-I Vigor identifies the spontaneity and enthusiasm inherent in the PSI Energy scale.
- For the most part, the other GPP-I scales show little in common with specific PSI scales. We would expect these scales to diverge since they purport to measure different constructs.

In conclusion, there is significant support for the psychological similarity of constructs and of scale measurement between the PSI and the GZTS and GPP-I when one would expect it and little convergence in scales measuring dissimilar constructs.

California Psychological Inventory (CPI)

Recent studies have observed the relationships between The Profile Sales Indicator Sales Success Qualities and those of the California Psychological Inventory. This inventory is an established assessment tool utilized in counseling, occupational and educational settings. Fourteen scales from the original twenty-three were analyzed for significant correlations utilizing a sample of fifty-two. An explanation of the CPI scales will assist in understanding the underlying constructs involved. **Table 2.10** defines the general interpretation of the high and low ends of each scale.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.10- CPI Scale Definitions		
Low Scores	CPI Scale	High Scores
Unassuming, not forceful	Dominance	Confident, assertive, dominant, task-oriented
Unsure of self, dislikes direct competition	Capacity for Status	Ambitious, wants to be a success, independent
Shy, feels uneasy in social situations, prefers to keep in the background	Sociability	Sociable, likes to be with people, friendly
Cautious, hesitant to assert own views or opinions; not sarcastic or sharp-tongued	Social Presence	Self-assured, spontaneous; a good talker; not easily embarrassed
Self-doubting; readily assumes blame when things go wrong; often thinks others are better	Self-acceptance	Has good opinion of self; sees self as talented, and as personally attractive
Lacks self-confidence, seeks support from others	Independence	Self-sufficient, resourceful, detached
Ill at ease in many situations; unempathic	Empathy	Comfortable with self and well-accepted by others
Not overly concerned about duties and obligations; may be careless or lazy	Responsibility	Responsible, reasonable, takes duties seriously
Has strong feelings and emotions, and makes little attempt to hide them; speaks out when angry or annoyed	Self-control	Tries to control emotions and temper; takes pride in being self-disciplined
Insists on being himself or herself, even if this causes friction or problems	Good Impression	Wants to make a good impression; tries to do what will please others

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.10- CPI Scale Definitions		
Low Scores	CPI Scale	High Scores
Has difficulty in doing best work in situations with strict rules and expectations	Achievement via Conformance	Has strong drive to do well; likes to work in settings where tasks and expectations are clearly defined
Not changeable; likes a steady pace and well organized life; may be stubborn and even rigid	Flexibility	Flexible; likes change and variety; easily bored by routine life and everyday experience; may be impatient, and even erratic
Opportunistic; outgoing; demonstrates initiative and confidence; aggressive	Internality	Reticent, shy, reserved, moderate, modest and reluctant to initiate or take decisive social action
Sensitive; individualistic; informal; restless; distractible; seeks stimulation and adventure	Norm-favoring	Well-organized, conscientious, conventional, dependable and controlled; conscientious

Several construct similarities and themes common to both assessments were expected to be found in the statistical analysis. The following illustrates the correlations discovered. As demonstrated in **TABLE 2.11**, Sales Success Qualities associated with social effectiveness, including Energy and Competitiveness correlate well with CPI traits of the same general theme. Likewise, Sales Success Qualities associated with nonconformity and independence relate inversely with CPI measures of social responsibility. In general, it appears that The Profile Sales Indicator demonstrates good concurrent validity with the CPI.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.11- CPI SCALE CORRELATIONS														
N=52	dominance	status	sociability	social presence	self-acceptance	independence	empathy	responsibility	self-control	good impression	achieve via conform	flexibility	externality/ internality	norm questioning/ favoring
Energy	**		**		**	*							(**)	*
Competitiveness	**	*	**	**	**	**	*						(**)	
Self-Reliance	**		*	**	**	**	*	*	**	*			(**)	

** <.01

* <.05

Paranthenetical notation refers to an inverse correlation

The Profiles Performance Indicator (PPI)

The PSI was correlated with The Profiles Performance Indicator (PPI) for significant relationships with the PPI 's five scales of work-related behavior. These scales include:

- I. Dominance
 - Getting immediate results
 - Causing action
 - Accepting risk
 - Taking charge of people and situations
- II. Influence
 - Contacting people
 - Emotionality
 - Spontaneity
 - Enthusiasm
- III. Steadiness
 - Maintaining the status quo
 - Steady, deliberate performance
 - Patient, easy-going
 - Team player, accommodating, agreeable

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

IV. Compliance

- High standards regarding quality and correctness
- Attention to details
- More data than people oriented
- Guarded, highly controlled, disciplined

V. Motivational Energy

- Driven, energetic, intense
- Sociable, dominant
- Expressive of both positive and negative feelings
- Works hard, determined, controlling

A sample of salespersons and non-salespeople were administered the PSI and the PPI. **TABLE 2.12** demonstrates the significant correlations found between the two tests. These results suggest a strong relationship between Sales Drive and scale V of the PPI. Because of the strength of this relationship, the other scales of the PSI were also investigated and are included here. Only the significance of the results is reported here.

TABLE 2.12- PSI and PPI CORRELATIONS					
N=90					
Scale	I	II	III	IV	V
Competitiveness	**		(**)		**
Self-Reliance	*				
Persistence	**	**	(**)	(**)	**
Energy	**	**	(**)	(**)	**
Sales Drive	**	**	(**)	(**)	**

** <.01

* <.05

Paranthenetical notation refers to an inverse correlation

The Criterion-Related Validity Approach

Criterion-related validity is one of the most accepted means of demonstrating test validity for all types of tests, including general mental ability tests or tests that measure abstract reasoning. In a criterion-related validation study, scores on the target test are correlated with job performance scores for the same group of applicants or employees. The correlation between test scores and job performance scores reflects the criterion-related validity of the test. The stronger the correlation, the more confidence one may have that the test is working as intended to select better applicants.

Research Designs Used for Criterion-Related Validation Studies

There are two basic research designs used to conduct a criterion-related validation study. The difference between the two designs is the amount of time allowed to elapse between collecting the predictive data and the criterion data. Using the concurrent validation method for demonstrating criterion-related validity, the predictive data (e.g., test scores) and the criterion data (e.g., job performance ratings) are collected at approximately the same time. Using the predictive validation method the predictive data (e.g., test scores) are collected and a certain amount of time is allowed to elapse before the criterion data (e.g., job performance ratings) are collected. As opposed to the concurrent validation method, the predictive validation method is longitudinal in nature.

Concurrent Validity

This section of the Technical Report reviews the statistical relationship between PSI Sales Success Qualities scores and various performance criteria. These criteria include:

- Sales Performance
- Customer Service Performance
- Management Performance
- Conscientiousness
- Employee Turnover
- Organizational Status

Although the sample sizes of some of the following studies are sometimes less than ideal, the number of studies and the overall consistency of results argues against there being spurious relationships due to sampling error. In addition, while this emphasizes some of the practical limitations of applied research, since this instrument will be applied in a "real world" setting, some would argue the findings will generalize better given that the studies were conducted in the same environment.

Predicting Sales Performance

Study 1:

Description of the Project: Seventy-six experienced new and used auto sales personnel representing five automobile dealerships were tested with items from the PSI. Sales performance data consisted of total cars sold for (a) 1996, (b) 1997, combined 1996, 1997 and (d) combined 1996, 1997 controlling for length of employment.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

Results. **TABLE 2.13** contains the statistically significant correlations between the PSI scale scores and sales performance.

TABLE 2.13- CORRELATIONS PSI AND PERFORMANCE				
N = 76				
PSI Scales	Sales Performance			Tenure Controlled
	1996	1997	1996 / 1997	1996 / 1997
Energy	.42**	.29*	.47**	.43**
Competitiveness	.29*	.27*	.35**	.27*

* (p<.05)

** (p<.01)

Discussion: According to **TABLE 2.13**, the Competitiveness and particularly the Energy scales were significantly related to sales performance. The correlations ranged from .27 to .47.

Study 2

Description of the Project. Fifty-two experienced new and used auto sales incumbents were dichotomized on the basis of the number of cars sold during a 12-month period. Although forty of these sales personnel sold between 10 and 12 cars per month, 12 of these sales personnel sold between 18 and 22 cars each month. All sales personnel completed items from the PSI and scale scores were correlated with sales performance.

Results. **TABLE 2.14** contains the average scale scores and the statistically significant correlations between the PSI scale scores and sales performance.

TABLE 2.14 PSI and sales performance			
	Average Scale Scores		Correlations
	Cars Sold per month (18 – 22)	Cars Sold per month (10 - 12)	
PSI Scales			
Energy	24	21	.39**
Competitiveness	25	21	.42**

N=52

12

40

* (p<.05)

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

PSI Scale	High Group (36-50) (N = 23)	Low Group (7-18) (N = 21)	
Energy	22	17	.32**

** (p<.01)

* (p<.05)

Discussion: According to **TABLE 2.15**, the composite management evaluation scale was significantly related with high scores on the Energy scale of the PSI. These results indicated that top producing Store Managers tend to be significantly more energetic and concerned with timely results than the less successful Store Managers.

Study 2

Description of the Project. Thirty-six District Managers of a national residential property management company were administered items from the PSI. Nine Regional Vice Presidents rated the District Managers with regard to their overall performance and results. These District Managers were then divided into upper and lower halves on the basis of their ratings.

Results. **TABLE 2.16** contains the average scale scores and correlations for the most significant relationships between PSI scale scores and ratings data.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.16 – PSI AND MANAGER PERFORMANCE			
	Average Scale Scores		Correlations
	High Rated Managers (N = 18)	Low Rated Managers (N = 18)	
PSI Scales			
Energy	25	20	.48**
Competitive.	25	21	.45**

** (p<.01)

* (p<.05)

Discussion: According to **TABLE 2.16**, the District Managers who represented the upper one-half of the rating distribution scored significantly higher on the Energy and Competitiveness scales of the PSI when compared with managers who were in the lower one-half of the rating distribution.

Study 3

Description of the Project. One hundred-thirty apartment Property Managers were administered items from the PSI. Twenty District Managers, nine Regional Vice Presidents and five Training/Human Resource Managers rated the overall performance and effectiveness of the 130 managers. **TABLE 2.17** contains the average PSI scale scores and correlations for the most significant relationship between PSI scale scores and the 20 top and 20 bottom rated Property Managers.

Results. According to **TABLE 2.17**, the top 20 rated Property Managers scored significantly higher on the Competitiveness scale of the PSI when compared with the bottom 20 rated Property Managers.

TABLE 2.17 – PSI AND PROPERTY MANAGER PERFORMANCE			
	Average Scale Score		Correlation
	Top 20 Managers	Bottom 20 Managers	
PSI Scale			
Competitiveness	21	15	.45**

** (p<.01)

* (p<.05)

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

Study 4

Description of the Project. As an extension of the Study 3, from the total group of 130 Property Managers, the raters were asked to identify those who have the management capabilities and developmental potential to eventually become District Managers. The rating procedure resulted in twelve Property Managers being identified as having future District Manager potential. **TABLE 2.18** contains the most significant average PSI scale scores differences and correlations between these 12 Property Managers and the remaining 118 Property Managers.

Results. According to **TABLE 2.18**, Energy, Competitiveness and Self-Reliance were significantly related to having District Manager developmental potential. The correlations ranged from .40 to .49.

TABLE 2.18 – PSI AND DISTRICT MANAGER POTENTIAL			
PSI Scales	Average Scale Scores		Correlations
	12 District Manager Candidates	118 Property Managers	
Energy	24	20	.48**
Competitive.	23	19	.49**
Self-Reliance	18	13	.40**

** (p<.01)

* (p<.05)

Study 5

Description of the Project. Items from the PSI were administered to 115 commercial District Managers from a national property management company. Twenty-one Regional Supervisors identified the top and bottom 25 managers with respect to their overall management effectiveness and results. **TABLE 2.19** contains the most significant PSI average scale score differences and correlations for these two groups of District Managers.

Results. **TABLE 2.19** indicates significant differences between the top and bottom 25 District managers on Energy and Competitiveness.

TABLE 2.19 – PSI : TOP AND BOTTOM PERFORMERS			
PSI Scales	Average Scale Scores		Correlations
	Top 25	Bottom 25	
Energy	23	18	.52**
Competitive.	23	19	.58**

** (p<.01)

* (p<.05)

Discussion: Correlations were all in the .50 range indicating strong relationships between these two Sales Success Qualities and management performance.

Summary: Overall, results of the projects summarized above are highly consistent and clearly in line with other validation findings concerning the relationship between specific Sales Success Qualities and management performance. Successful managers are energetic, self-motivated and achievement oriented. They value time and prefer to interact with others in a direct and decisive manner. They are highly assertive and have strong needs to take charge, to be in control, to make their own decisions. These managers are motivated by challenging assignments and competitive opportunities for advancement.

Predicting Employee Turnover

Description of the Project. Items from the PSI were completed by 54 residential property management personnel. These employees included 22 Property Managers, 14 Assistant Property Managers and 18 Leasing Consultants. Approximately two years later, 29 of these employees were no longer employed. **TABLE 2.20** contains the most significant PSI average scale score differences and correlations for the separated and still employed property personnel.

Results. According to **TABLE 2.20**, the employees who were still employed after two years of employment scored significantly higher on the Energy scale when compared with the separated employees.

TABLE 2.20 – PSI AND TURNOVER			
PSI Scales	Average Scale Score		Correlation
	Still Employed (N = 25)	Separated (N = 29)	
Energy	23	18	.43**

** (p<.01)

* (p<.05)

Predicting Organization Status

Description of the Project. Three levels of architects from a national architectural firm were administered items from the PSI. At the bottom of organizational status were 23 Associates who were primarily responsible for doing routine technical tasks. In the middle of organizational status were ten Project Managers who supervised the 23 Associates and had project responsibilities. At the top of organizational status were seven Managing Partners who not only supervised the ten Project Managers, but were also primarily responsible for generating new business, managing the business and for making a profit. **TABLE 2.21** contains the most significant PSI average scale score differences for these three groups of employees.

TABLE 2.21 – PSI AND ORGANIZATIONAL STATUS			
PSI Scales	Average Scale Scores		
	Managing Partners (N = 7)	Project Managers (N = 10)	Associates (N = 23)
Energy	24**	24*	18*
Competitiveness	22**	17**	15**

** (p<.01)

* (p<.05)

Results. **TABLE 2.21** clearly shows significant PSI average scale score differences among these three groups of employees. According to **TABLE 2.21**:

The Managing Partners were significantly higher on:

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

- Energy when compared with the Associates (t=3.2, df=28, p<.01)
- Competitiveness when compared with the Project Managers (t=2.9, df=15, p<.01) and the Associates (t=3.1, df=28, p<.01)

The Project Managers scored significantly higher on:

- Energy when compared with Associates (t=3.3, df=31, p<.01)

Discussion: These findings are consistent with results obtained from other industries and organizations. For example, **TABLE 2.22** contains PSI average scale scores for Energy and Competitiveness for the top, middle and lower status positions across a broad and diverse range of industries. Although t-tests and correlations were not computed on this data, there is a clear and consistent relationship between these average scale scores and organizational status. That is, highly energetic, assertive and competitive individuals are more inclined to move upward within their respective organizations when compared with individuals who are relatively less driven, self-confident and competitive.

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.22 – PSI AVERAGE SCORES AND JOB TITLES		
PSI Scales		
Job Titles	Average Scale Scores	
	Energy	Competitiveness
All Industries		
Executive	24	24
Mid-Management	21	20
Lower Management	20	19
Residential /Commercial Property Management		
Regional V.P.	24	24
District Manager	21	22
Property Manager	19	20
All Industries		
Plant Manager	22	22
Production Manager	19	20
Supervisor / Foreman	17	19
Auto Dealerships		
General Manager	24	24
General Sales Manager	22	22
Sales Manager	21	21
All Industries		
Chief Financial Officer	22	22
Controller	20	20
Accounting Manager	19	17
All Industries		
Operations Manager	23	24
District Manager	21	22
Store Manager	19	20

Predicting Steadfast Performance in Various Settings

One group of studies correlated Persistence scores with follow-up job performance criteria (manager ratings, sales production, etc.). The results of these studies are shown in **Table 2.23**. These studies were done with sales professionals over different periods of time.

	Clerical	Technical	Sales
Persistence	.14*	.17*	.37**
N	1420	815	2840

** < .01

* < .05

Persistence is notably related to overall quality performance in a number of settings, but most significantly in sales. This data confirms our view that Persistence is a key quality of effective sales performance.

Validation of the Distortion Scale

A sample of 282 individuals were administered the Distortion scale items from the PSI to ascertain the frequency of responses. This information clearly demonstrates the distribution of responses follows what one expects from a distortion-related scale: only a significant minority of respondents select specific answers to items from this scale at a high rate of recurrence. **TABLE 2.24** is a frequency distribution of Distortion responses for the total sample.

TABLE 2.24- DISTORTION SCALE CUMULATIVE RESPONSE FREQUENCY			
(N = 282)			
# of D	Frequency	Percent	Cumulative Percent
9	0	-	0%
8	1	Approx. 0.4%	.4%
7	0	-	.4%
6	0	-	.4%
5	0	-	.4%
4	1	Approx. 0.4%	0.7%
3	3	1.1%	1.8%
2	23	8.2%	9.9%
1	254	90.1%	100%
TOTAL	282	100%	

According to **TABLE 2.24**, all of the sample selected at least one of the Distortion questions in a manner suggesting a desire for positive impression, but an overwhelming majority found reason to select only one of the nine items on this scale. Specifically, 90.1% of the total sample responded to one of the questions in this manner. Finally, 99.3% of the total sample had only three or less atypical Distortion responses, thus providing considerable support for the infrequent response rationale for the nine questions.

When reported in The Profile Sales Indicator reports, the Distortion scale has a negative load. For example, a raw score of 0 (zero) yields a Distortion Scale score of 10 (ten), which suggests a low probability of distortion effects in the results for an individual's assessment.

ETHNICITY AND GENDER

Profiles International conducted a study to investigate the effects of gender and ethnicity on the results of the Sales Success Qualities section. The subjects in Group F were 96 adults was from a mixed sales and management background. They represented a mixture of males, females, Blacks, Hispanics and Whites. There were no statistically significant interactions reported for Hispanic/White or male/female. The only significance reports was in the means for Self-Reliance where Blacks scored a little lower on the Self-

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

Reliance scale. This difference was a little less than 2/3rds of a SD and would have a minimal impact in most job situations. The results are reported in **TABLES 2.25, 2.26, 2.27 and 2.28.**

TABLE 2.25- GROUP F, GENDER, SALES SUCCESS QUALITIES									
(N = 90)									
								95% Confidence Interval	
Scale	Gender	N	t	df	Sig.	Mean diff.	Std error diff.	lower	upper
Energy	Male	40	-.68	86	.50	-.76	1.12	-2.99	1.46
	Female	50							
Competitiveness	Male	40	-.38	86	.70	-.47	1.22	-2.90	1.97
	Female	50							
Self-Reliance	Male	40	-1.23	86	.22	-1.55	1.26	-4.05	.95
	Female	50							

TABLE 2.26- GROUP F, ETHNICITY: BLACK/WHITE, SALES SUCCESS QUALITIES									
(N = 55)									
								95% Confidence Interval	
Scale	Ethnicity	N	t	df	Sig.	Mean diff.	Std error diff.	lower	upper
Energy	Black	17	-1.52	53	.14	-2.06	1.36	-4.78	.66
	White	38							
Competitiveness	Black	17	.93	53	.36	1.35	1.46	-1.57	4.27
	White	38							
Self-Reliance	Black	17	-2.58	53	.01	-3.82	1.48	-6.79	-.85
	White	38							

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

TABLE 2.27- GROUP F, HISPANIC/WHITE, SALES SUCCESS QUALITIES									
(N = 59)									
								95% Confidence Interval	
Scale	Ethnicity	N	t	df	Sig.	Mean diff.	Std error diff.	lower	upper
Energy	Hispanic White	21 38	-1.65	57	.10	-2.00	1.21	-4.43	.42
Competitiveness	Hispanic White	21 38	-.78	57	.44	-1.14	1.45	-4.05	1.77
Self-Reliance	Hispanic White	21 38	-1.53	57	.13	-2.10	1.37	-4.85	.65

TABLE 2.28 – GROUP F, DESCRIPTIVE STATISTICS, FULL GROUP							
(N = 96)							
Sales Success Qualities	Mean	Standard Error	Median	Mode	Standard Deviation	Minimum	Maximum
Energy	17.41	.55	17.00	17	5.18	0	30
Competitiveness	18.34	.60	18.00	16	5.65	0	28
Self-Reliance	16.49	.62	17.00	18	5.85	0	28

SUMMARY AND CONCLUSIONS

Our panel of experts brought together years of theoretical and practical experience to determine a variety of relevant qualities found in successful salespeople. These qualities were tested through the creation of a large item pool, analyzed, and solidified into five unique Sales Success Qualities. It was also evident that observable behaviors are more important than hypothetical qualities. From this logic, we derived several objective behaviors to identify that are associated with real-world activities. The Sales Success Qualities were thus seen as being manifest in certain Key Sales Behaviors, often as a synthesis of the successful salesperson’s qualities. Seven Key Sales Behaviors were eventually derived that can be seen as manifestations of the Sales Success Qualities.

With regard to the internal validity of the PSI, an analysis of the intercorrelations among the five Sales Success Qualities indicated a pattern of strong and significant relationships that are clearly consistent with expectations based on the constructs being measured. Concerning the external validity of the PSI, the patterns of correlations between the PSI

THE PROFILES SALES INDICATOR™ TECHNICAL MANUAL

and various measures of personality are also largely consistent with expectations based on the questions and scales of these tests. The statistics clearly demonstrate high positive correlations between related scales.

Overall, results of the analysis of internal and external validity consistently indicate that the PSI is a valid measure of what it was designed and intended to measure, namely five core dimensions of normal adult personality, suggested and proven to be sound qualities for successful sales.

This technical manual summarizes the results of several validation projects which examined the relationship between the PSI scales and a diverse range of criteria. The results of these projects provided consistent and substantial support for the predictive validity of PSI. Correlations between PSI scale scores and measures of sales success, management performance, turnover and organizational status were consistently significant. To sum up, the PSI scales are significantly related to sales success.

In conclusion, statistical analysis of the Profile Sales Indicator clearly indicates that the PSI consists of five highly reliable scales that provide an accurate measure of five Sales Success Qualities and seven derivative Critical Sales Behaviors that are useful for predicting a number of important sales-related criteria.