APPENDIX A

References and Bibliography

References:

Abdel-Razek, Refaat H., (1997) "How Construction Managers Would Like Their Performance to be Evaluated", *Journal of Construction Engineering and Management,* Vol. 123, No. 3, September 1997

Ahmed, Syed M. and Kangari, Roozbeh, (1995) "Analysis of Client-Satisfaction Factors in Construction Industry", *Journal of Management in Engineering,* Vol. 11, No. 2, March/April 1995

Anastasi, Anne and Urbina, Susana (1997) *Psychological Testing,* Prentice-Hall, Upper Saddle River, NJ

Atanasov, Maria (1999) "Hiring with Confidence, Personality Testing is the Hottest trend in Hiring", *Business Vision,* Spring 1999

Badawy, M. K., (1995) *Developing Managerial Skills in Engineers and Scientists,* Van Nostrand Reinhold, New York, New York.

Baker, Michael (1997) "Reengineering an Engineering Consultant", *Journal of Management in Engineering,* Vol. 13, No. 2, March/April 1997

Barrick, Murray R. and Mount, Michael K. (1991) "The Big Five Personality Dimensions and Job Performance: A Meta-Analysis" *Personnel Psychology,* Vol. 44, 1-27, 1991

Barry, B. and Stewart, G.. (1997) "Composition, process, and performance in self-managed groups: The role of personality" *Journal of Applied Psychology,* Vol. 82, 62-78, 1997

Barron, F., and Harrington, D. (1981) "Creativity, Intelligence and Personality" *Annual Review of Psychology,* 32, 439-476.

Brown, Bernard H., (1999) President, Mach Architects and Engineers, P.C., Personal Interview

Buchanan, L. B., (1998) "The impact of the big five personality characteristics on group cohesion and creative task performance", unpublished Doctoral Dissertation, Virginia Tech, 1998

Burger, Jerry M., (1997) *Personality* Brooks/Cole Publishing, Pacific Grove, CA

Childs, Auralee and Klimoski, Richard J., (1986) "Successfully Predicting Career Success: An Application of the Biographical Inventory" *Journal of Applied Psychology,* Vol. 71, No. 1, 3-8, 1986

Clough, Russell G., (1999) Principal, Russell G. Clough, Co., Palo Alto, Ca., Personal Interview

Construction Industry Institute, (1991) *Organizing for Project Success,* CII Project Organization Task Force, Austin, Texas

Construction Industry Institute, (1994) *Disputes Potential Index: A Cholesterol Test,* CII Research Team Project, Austin, Texas

Consulting Psychologists Press, (1999) *CCP Software System, Version 5.1,* Palo Alto, CA.

Costa, P. T., Jr., and McCrae, R. R., (1988) "Personality in Adulthood: six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory" *Journal of Personality and Social Psychology,* Vol. 54, 853-863

Costa, P. (1996) "Work and Personality: Use of the NEO-PI-R in Industrial/Organizational Psychology" *Applied Psychology: An International Review,* Vol. 45, 225-241, 1996

Day, David V. and Silverman, Stanley B. (1989), "Personality and Job Performance: Evidence on Incremental Validity" *Personnel Psychology,* Vol. 42, 26-36, 1989

de la Garza, J. M. (1998) Professor, Virginia Polytechnic Institute, Blacksburg, VA., Personal Interview

Douglas, C. J., and Munger, E. L. (1969) *Construction Management,* Prentice-Hall, Inc. Englewood Cliffs, New Jersey.

Driskell, J., Hogan, R., and Silas, E. (1987) Personality and Group Performance, *Group Processes and Intergroup Relations,* Sage Publications, Newbury Park, CA.

Engineering Times, National Society of Professional Engineers, Vol. 20, Number 9, November 1998

Fisher, Deborah, Miertschin, Susan and Pollack, David R., (1995) "Benchmarking in the Construction Industry", *Journal of Management in Engineering,* Vol. 11, No. 1, January/February 1995

Franklin, J. R., (1995) "Managing Personalities" *Handbook of Professional Practice,* American Institute of Architects, New York, New York

Ghiselli, Edwin E. (1973) " The Validity of Aptitude Tests in Personnel Selection" *Personnel Psychology,* Vol. 26, 461-477, 1973

Gibson, J. L., Ivancevich, J. M., and Donnelly, J. E. (1997) *Organizations, Behavior, Structure Process,* Irwin/McGraw Hill Companies, Boston, Massachusetts.

Glass, Gene V. and Hopkins, Kenneth D. (1996) *Statistical Methods in Education and Psychology,* Allyn and Bacon, Boston, Mass.

Gleick, James (1987) *Chaos: Making a New Science,* Penguin Books, New York, New York

Goldberg, Lewis R. (1990) "An Alternative 'Description of Personality': The Big-Five Structure" *Journal of Personality and Social Psychology,* Vol. 59, No. 6, 1216-1229, 1990

Groth-Marnat, Gary, (1997) *Handbook of Psychological Assessment,* John Wiley and Sons, Inc. New York, New York

Guion R. M. and Gottier R. F., (1965) Validity of personality measures in personnel selection. *Personnel Psychology,* 18, 135-164

Hall, Wallace B. and MacKinnon, Donald W. (1969) "Personality Inventory Correlates of Creativity Among Architects" *Journal of Applied Psychology,* Vol. 53, No. 4, 322-326

Hall, Calvin S., and Nordby, Vernon J., (1973) *A Primer of Jungian Psychology,* A Meridian Book, New York, New York

Harvey, R. J., Murray, W. D., and Markham, S. E. (1994) "Evaluation of three short form versions of the Myers-Briggs Type Indicator." *J. of Personality Assessment,* 63(1), 181-184.

Harvey, R. J., (May, 2000) Professor, Virginia Polytechnic Institute, Blacksburg, VA., Personal Interview

Hecker, Patricia (1996) "Human Resources Strategies for Successful Consulting Engineering Firms", *Journal of Management in Engineering,* Vol. 12, No. 5, September/October 1996

Hedlund, D. F. (1965) "A review of the MMPI industry", *Psychological Reports,* No. 17, 875-889, 1965

Helmreich, Robert L. (1984) "Cockpit Management Attitudes" *Human Factors,* 26(5), 583-589, 1984

Hensey, Melville, (1992) “Thoughts on Management of Acquisitions”, *Journal of Management in Engineering,* Vol. 8, No. 2, April 1992

Hensey, Melville, (1991) “Essential Success Factors for Strategic Planning”, *Journal of Management in Engineering,* Vol. 7, No. 2, April 1991

Hirsh, S. K. and Kummerow, J., (1998) *Introduction to Type in Organizations,* Consulting Psychologists Press, Palo Alto, CA.

Hopkins, Kenneth D. (1998) *Educational and Psychological Evaluation and Measurement,* Allyn and Bacon, Needham Heights, MA

Jackson, S., (1996) *Handbook of work group psychology,* Wiley Books, Chichester, England

Jain, Ravi K., (1997) “Metrics of Organization Effectiveness”, *Journal of Management in Engineering,* Vol. 13, No. 2, March/April 1997

Jefferson, Thomas, (1823) Letter to John Adams, http://etext.virginia.edu/ Jefferson/ Quotations

Jensen, R. S. (1982) “Pilot Judgment: Training and Evaluation,” *Human Factors,* 24, 61-73

Johnson, D. A. (1995) “*Measures of the Five Factor Model and Psychological Type, a convergence of the research and theory*”, Theory and Research Symposium. Xth Biennial International Conference, Kansas City: Association for Psychological Type

Johnson, H. M. and Singh, A. (1998) “The Personality of Civil Engineers”, *Journal of Management in Engineering,* Vol. 14, No. 4, July/August 1998

Kaman, Vicki S. and McCambridge, James A. (1992) “Conflict Management Training For Today’s Engineering Managers”, *Journal of Management in Engineering,* Vol.8, No. 3, July 1992

Keirsey, D. and Bates, M., (1974) *Please Understand Me,* Prometheus Nemesis Book Company, Del Mar, California.

Keirsey, D. (1998) *Please Understand Me II,* Prometheus Nemesis Book Company, Del Mar, California.

Keller, Robert T., (1986) “Predictors of the Performance of Project Groups in R&D Organizations,” *Academy of Management Journal,* Vol. 29, No. 4, 715-726, 1986

Kezsbom, R. T. (1992) Re-opening Pandora’s Box: Sources of Project Conflict in the 1990’s. *Industrial Engineering,* May 54-59

Kichuk, Susan L. and Wiesner, Willi H. (1997) "The Big Five personality factors and team performance: implications for selecting successful product design teams," *Journal of Engineering and Technology Management,* Vol. 14, 195-221, 1997

Kline, Donald H. and Coleman, Gregory B. (1992) "Four Propositions for Quality Management of Design Organizations", *Journal of Management in Engineering,* Vol. 8, No. 1, January 1992

Lanyon, Richard I. And Goodstein, Leonard D. (1997) *Personality Assessment,* John Wiley and Sons, New York, New York

Lester, Lewis F. and Bombaci, Deborah H. (1984) "The Relationship of Personality and Irrational Judgment in Civil Pilots," *Human Factors,* 26(5), 565-572, 1984

Locke, E. A. and Hulin, C. L., (1962) "A review and evaluation of validity studies of activity vector analysis", *Personnel Psychology*, No. 15, 25-42

Longo, Peter M., (1991) "Development of In-House Project Evaluation Checklist", *Journal of Management in Engineering,* Vol. 7, No. 2, April 1990

Lord, Robert G., De Vader, Chirsty L. and Alliger, George M. (1986) "A Meta-Analysis of the Relation Between Personality Traits and Leadership Perceptions: An Application of Validity Generalization Procedures," *Journal of Applied Psychology,* Vol. 71, No. 3, 402-410, 1986

Lutz, James D., Hancher, Donn E. and East, E. William, (1990) "Framework for Design-Quality-Review Data-Base System", *Journal of Management in Engineering,* Vol. 6, No. 3, July 1990

Maidique, Modesto A. and Zirger, Billie Jo (1984) "A Study of Success and Failure in the Product Innovation: The Case of the US Electronics Industry," *IEEE Transactions in Engineering Management,* Vol. EM-31, No. 4, November, 1984

McCaully, Mary H., MacDaid, G. P., Walsh, R., (1987) "*Myers-Briggs Type Indicator* and retention in engineering," *International Journal of applied Engineering, 3*,2, 99-109

McCormack, Brenda, and Hill, Elizabeth, (1997) *Conducting a Survey, The SSPS Workbook,* International Thompson Publishing, Boston, Massachusetts

McCrae, Robert R. and Costa, Paul T. Jr., (1987) "Validation of the Five-Factor Model of Personality Across Instruments and Observers," *Journal of Personality and Social Psychology,* Vol. 52, No. 1, 81-90, 1987

McCrae, Robert R. and Costa, Paul T. Jr., (1986) "Evaluating comprehensiveness in personality systems: The California Q-Set and the Five-Factor Model of Personality Across Instruments and Observers," *Journal of Personality,* Vol. 54, 430-446, 1986

McCrae, Robert R. and Costa, Paul T. Jr., (1989) "Reinterpreting the Myers-Briggs Type Indicator From the Perspective of the Five-Factor Model of Personality," *Journal of Personality,* Vol. 57, No. 1, 17-40, 1989

Mendelsohn, G. A., Weiss, D. S., and Feimer, N. R., (1982) "Conceptual and empirical analysis of typological implications of patterns of socialization and femininity", *Journal of Personality and Social Psychology,* Vol. 42, 1157-1170, 1982

Munns, A. K., (1996) "Measuring Mutual Confidence in UK Construction Projects", *Journal of Management in Engineering,* Vol. 12, No. 1, January/February 1996

Myers, Isabel Briggs, McCaully, Mary H., Quenk, Naomi L. and Hammer, Allen L., (1998) *MBTI Manual,* Consulting Psychologists Press, Inc., Palo Alto, California

Myers, Isabel Briggs, (1980) *Gifts Differing: Understanding Personality Type,* Consulting Psychologists Press, Inc., Palo Alto, California

Nadler, David A., (1998) *Champions of Change,* Jossey-Bass Publishers, San Francisco, California

Nelson, Carl E. (1988) "Engineering Management: Recognizing Potential Engineering Managers", *Journal of Management in Engineering,* Vol. 4, No. 2, April, 1988

Nitsch, Judith, (1998 and 1999) President, Judith Nitsch Engineering, Inc. Boston, Mass., Personal Interview

Parfitt, M. K. and Sanvido, V. E., (1993) "Checklist of Critical Success Factors for Building Projects", *Journal of Management in Engineering,* Vol. 9, No. 3, July 1993

Pedhazur, Elazar J. and Schmelkin, Liora (1991) *Measurement Design and Analysis An Integrated Approach,* Lawrence Erlbaum Associates, Publishers, Hillsdale, NJ

Pocock, James B., Hyun, Chang T., Liu, Liang Y. and Kim, Michael K. (1996) "Relationship Between Project Interaction and Performance Indicators", *Journal of Construction Engineering and Management",* Vol. 122, No. , June 1996

Post, N. M., (1998) "Most Owners Say 'thumbs up' to the Building Team," Engineering News Record, Volume 240, Number 19, pp.32-39

Principal's Report, Institute of Management and Administration, Vol. 99, Number 4, April 1999

Quenk, Naomi L. (1993) *Beside Ourselves: Our Hidden Personality in Everyday Life,* Consulting Psychologists Press, Inc., Palo Alto, California

Riso, Don Richard, (1996) *Personality Types; Using the Enneagram for Self-Discovery,* Houghton Mifflen Company, Boston, Mass.

Robbins, H. A., and Finley, M., (1995) *Why Teams Don't Work,* Peterson's/Pacesetter Books, Princeton, New Jersey.

Robbins, M., (1998) "Building Teams with Temps," Your Turn, KeyCorp, A Forbes Special Interest Publication, Volume 1, Issue 4, Winter 1998

Robbins, Stephen P., (1984) *Essentials of Organizational Behavior,* Prentice Hall, Upper Saddle River, New Jersey

Saarinen, Arthur W. and Hobel, Mariene A., (1990) "Setting and Meeting Requirements for Quality", *Journal of Management in Engineering,* Vol. 6, No. 2, April 1990

Sanders, Steve R. and Eskridge, W. Frank, (1993) "Managing the Implementation of Change", *Journal of Management in Engineering,* Vol. 9, No. 4, October 1993

Sanvido, V. E., Grobler, F., Parfitt, K., Guvenis, M. and Coyle, M. (1992) "Critical Success Factors for Construction Projects", *Journal of Construction Engineering and Management,* Vol. 118, No. 1, July 1992

Schulman, Robert S., (1992) *Statistics in Plain English with Computer Applications,* Chapman and Hall, London

Smith, Max (1934) *The Relationship Between Item Validity and Test Validity,* Teachers College, Columbia University, New York, New York

Sommer, Barbara and Sommer, Robert, (1997) *A Practical Guide to Behavioral Research,* Oxford University Press, New York, New York

Songer, Anthony D. and Molenaar, Keith R., (1997) "Project Characteristics for Successful Public-Sector Design-Build", *Journal of Construction Engineering and Management,* Vol. 123, No. 1, March 1997

Spoto, Angelo, (1989) *Jung's Typology in Perspective,* Chiron Publications, Wilmette, Illinois

Stevens, James D. (1996) "Blueprint for Measuring Project Quality", *Journal of Management in Engineering,* Vol. 12, No. 2, March/April 1996

Stodola, Quentin and Stordahl, Kalmer (1967) *Basic Educational Tests and Measurements,* Science Research Associates, Inc., Chicago, Illinois

Stricker, L. J., and Ross, J., (1964) “An assessment of some structural properties of the Jungian personality typology”, *Journal of Abnormal and Social Psychology,* Vol. 68, 62-71, 1964

Stukhart, George, (1987) “Construction Management Responsibilities During Design”, *Journal of Construction Engineering and Management,* Vol. 113, No. 1, March 1987

Stussman, H. B., (1998) “ACEC Members Cope With Plenty,” Engineering News Record, Volume 240, Number 19: pg. 15

Tett, Robert P., Jackson, Douglas N. and Rothstein, Mitchell, (1991) “Personality Measures as Predictors of Job Performance: A Meta-Analytic Review,” *Personnel Psychology*, Vol. 44, 703-739, 1991

Thomas, L., (1996) *Work Style Inventory* (unpublished items), Consulting Psychologists Press, Palo Alto CA.

Thorndike, Robert M., (1997) *Measurement and Evaluation in Psychology and Education*, Prentice Hall, Upper Saddle River, New Jersey

Tziner, Aharon, (1985) “How Team Composition Effects Task Performance: Some Theoretical Insights”, *Psychological Reports,* Vol. 57, 1111-1119, 1985

Useem, Michael, (1998) *The Leadership Moment,* Random House, Inc., New York, New York

Vadum, Arlene C. and Rankin, Neil O. (1998) *Psychological Research Methods for Discovery and Validation*, McGraw Hill, Boston, MA

Vorster, Michael C. (1998) Professor, Virginia Polytechnic Institute, Blacksburg, VA., Personal Interview

West, M. and Anderson, N. (1996) “Innovation in top management teams”, *Journal of Applied Psychology,* 81, 680-693

Wuellner, William W. (1990) “Project Performance Evaluation Checklist for Consulting Engineers”, *Journal of Management in Engineering*, Vol. 6, No. 3, July 1990

Bibliography

Assaf, Sadi A., Al-Khalil, Mohammed and Al-Hazmi, Muhammad (1995) “Causes of Delay in Large Building Projects”, *Journal of Management in Engineering*, Vol. 11, No. 2, March/April 1995

Bennett, F. Lawrence (1996) *The Management of Engineering,* John Wiley and Sons, New York, New York

Birrell, George S. (1985) "General Contractors' Management: How Subs Evaluate It", *Journal of Construction Engineering and Management,* Vol. 111, No. 5, September 1985

Borcherding, John D., Sebastian, Scott J. and Samelson, Nancy M. (1980) "Improving Motivation and Productivity on Large Projects," *Journal of Construction Division, Proceedings of the ASCE,* Vol. 106, No. 1, March 1980

Borman, Walter C., Rosse, Rodney L. and Abrahams, Norman M., (1980) "An Empirical Construct Validity Approach to Studying Predictor-Job Performance Links" *Journal of Applied Psychology,* Vol. 65, No. 6, 662-671, 1980

Brase, Charles Henry and Brase, Corrinne Pellillo (1995) *Understandable Statistics,* Houghton Mifflin Company, Boston, Mass.

Bresnen, Michael J., Bryman, Alan E., Ford, Janet R., Beardsworth, Alan D. and Keil, E. Theresa, (1986) "Leader Orientation of Construction Site Managers", *Journal of Construction Engineering,* Vol. 112, No. 3, September 1986

Carnegie, Dale (1936) *How to Win Friends and Influence People,* Simon and Shuster Inc., New York, New York

Carr, Robert I., (1983) "Basic Research Needs in Construction Engineering", *Journal of Construction Engineering and Management,* Vol. 109, No. 2, June 1983

Carr, Robert I., (1997) "Engineering and Construction Management: Leadership and Opportunity", *Journal of Construction Engineering and Management,* Vol. 123, No. 3, September 1997

Carr, P. G. (1999) Professor Lawrence Cross, unpublished *Qualifier Exam – Evaluation of the Critical Success Factors Questionnaire for Reliability, Internal Consistency and Repeated Measures Validity*

Carr, P. G. (1999) Professor Jesus de la Garza, unpublished *Qualifier Exam – Critical Success Factors (CSF) Questionnaire EXPLORATION of DICHOTOMIES*

Crowley, Larry G. (1996) "Engineering Sales: Process of Understanding", *Journal of Management in Engineering,* Vol. 12, No. 2, March/April 1996

Dallavalle, C. (1991) "Managing During Organizational Change", *Journal of Management in Engineering,* Vol. 7, No. 4, October 1991

Darke, Peter R. and Freedman, Jonathan L., (1997) "The Belief in Good Luck Scale" *Journal of Research in Personality,* Vol. 31, Article No. RP972197, 486-511, 1997

Dayton, C. Mitchell (1970) *The Design of Educational Experiments,* McGraw Hill Book Company, New York, New York

Dias, W. P. S., (1990) "Circular Organizational Structure of Project Teams", *Journal of Management in Engineering,* Vol. 6, No. 4, October 1990

Diekmann, James E. and Girard, Matthew J., (1995) "Are Contract Disputes Predictable", *Journal of Construction Engineering and Management"*, Vol. 121, No. 4, December, 1995

Digman, John M. and Inouye, Jillian (1986) "Further Specification of the Five Robust Factors of Personality" *Journal of Personality and Social Psychology,* Vol. 50, No. 1, 116-123, 1986

Ferrett, Sharon K. (1994) *Positive Attitudes at Work,* Irwin Professional Publishing, Burr Ridge, Illinois

Fitz-Gibbon, Carol Taylor and Morris, Lynn Lyons (1978) *How to Calculate Statistics,* Sage Publications, Beverly Hills, California

Fraas, John W. (1983) *Basic Concepts in Educational Research,* University Press of America, Lanham, Maryland

Gialketsis, Michael P., (1991) "Integration Planning for Merger of Two Consulting Engineering Firms", *Journal of Management in Engineering,* Vol. 7, No. 3, July 1991

Hakim, A. and Wittenborn, W. H. (1998) *Understanding and Managing,* Victor O. Shinnerer and Company, Inc. , Chevy Chase, Maryland

Halpin, D. W., and Woodhead, R. W., (1998) *Construction Management,* John Wiley and Sons, New York, New York

Hamilton, M. R. and Gibson, G. E. (1996) "Benchmarking Pre-project Planning Efforts", *Journal of Management in Engineering,* Vol. 12, No. 2, March/April 1996

Hayes Bob E., (1991) *Measuring Customer Satisfaction,* ASQC Quality Press, Milwaukee, Wisconsin

Howard, Ann, (1986) "College Experiences and Managerial Performances," *Journal of Applied Psychology,* Vol. 71, No. 3, 530-552, 1986

Jahren, Charles T. and Dammeier, Bruce F. (1990) "Investigation into Construction Disputes", *Journal of Management in Engineering,* Vol. 6, No. 1, January 1990

Kelly, Kevin, (1994) *Out of Control,* Addison-Wesley Publishing Company, Reading, Massachusetts

Kroeger, O. and Thuesen, J.M., (1992) *Type Talk at Work,* Dell Publishing, New York, New York.

Kroeger, O. and Thuesen, J.M., (1988) *Type Talk,* Dell Publishing, New York, New York

Langston, Christopher A., (1997) "Beliefs and the Big Five: Cognitive Bases of Broad Individual Differences in Personality," *Journal of Research in Personality,* Vol. 31, Article No. RP72178, 141-165, 1997

Laufer, Alexander (1982) "Motivating Construction Workers," *Journal of Construction Division, Proceedings of the ASCE,* Vol. 108, No. 4, December 1982

Maloney, William F. and Federle, Mark O., (1991) "Organizational Culture and Management", *Journal of Management in Engineering,* Vol. 7, No. 1, January 1991

Maloney, William F. (1988) "New Engineer in Construction: Path to Management", *Journal of Management in Engineering,* Vol. 4, No. 1, January 1988

Martin, Charles (1997) *Looking at Type: The Fundamentals,* Center for Application of Psychological Types, Gainesville, Florida

Myers, Jerome L. (1979) *Fundamentals of Experimental Design*, Allyn and Bacon, Boston, Mass.

Nee, P. A., (1996) *ISO 9000 in Construction*, John Wiley and Sons, New York, New York

Norman, W. T., (1963) Raters, ratees and randomness in personality structure. *Journal of Abnormal and Social Psychology,*4, 681-691

O'Reilly, Charles III and Chatman, Jennifer, (1986) "Organizational Commitment and Psychological Attachment: The Effects of Compliance, Identification and Internalization on Prosocial Behavior" *Journal of Applied Psychology,* Vol. 71, No. 3, 492-499, 1986

Payne, John L. (1990) "Entrepreneurs in Engineering Organizations", *Journal of Management in Engineering,* Vol. 6, No. 2, April, 1990

Pearce, John A. and Ravlin, Elizabeth C. (1987) "The Design and Activation of Self-Regulating Work Groups" *Human Relations,* Vol. 40, No. 11, 751-782, 1987

Petroski, H., (1992) *To Engineer is Human,* Vintage Books, Random House, Inc., New York, New York

Phillips, Donald T., (1992) *Lincoln on Leadership,* Warner Books Inc., New York, New York

Pierce, J. L., and Newstrom, J. W. (1996) *The Manager's Bookshelf*, Harper-Collins College Publishers, New York, New York

Pitcher, Pat, (1993) "Balancing Personality Types at the Top," *Business Quarterly*, pp. 47-57, Winter 1993

Pocock, James B., Liu, Liang Y. and Tang, Wilson H. (1997) "Prediction of Project Performance Based on Degree of Interaction," *Journal of Management in Engineering,* Vol. 13, No. 2, March/April 1997

Porter, James C. (1993) "Exploiting the Leadership Asset of the Engineer", *Journal of Management in Engineering,* Vol. 9, No. 3, July 1993

Russel, Jeffrey S. and Jaselskis, Edward J. (1992) "Predicting Construction Contractor Failure Prior to Contract Award", *Journal of Construction Engineering and Management",* Vol.118, No. 4, December, 1992

Rwelamila, Pantaleo D. (1994) "Group Dynamics and the Construction Project Manager", *Journal of Construction Engineering and Management,* Vol. 120, No. 1, March 1994

Senge, Peter M., (1990) *The Fifth Discipline*, Doubleday Publishing, New York, New York

Senge, Peter M., (1994) *The Fifth Discipline Fieldbook*, Doubleday Publishing, New York, New York

Smith, Mike, (1991) "Situational Leadership Training", *Journal of Management in Engineering,* Vol. 7, No. 4, October 1991

Smith, Patricia, Budzeika, Karen A., Edwards, Neville A., Johnson, Steven M. and Bearse, Linda N., (1986) "Guidelines for Clean Data: Detection of Common Mistakes " *Journal of Applied Psychology*, Vol. 71, No. 3, 457-460, 1986

Solomon, Esther E., (1986) "Private and Public Sector Managers: An Empirical Investigation of Job Characteristics and Organizational Climate," *Journal of Applied Psychology,* Vol. 71, No. 2, 247-259, 1986

Tjosvold, Dean and Deemer, Deborah K. (1980) "Effects of Controversy Within a Cooperative or Competitive Context on Organizational Decision Making," *Journal of Applied Psychology,* Vol. 65, No. 5, 590-595, 1980

Utts, Jessica M. (1999) *Seeing Through Statistics,* Duxberry Press, Pacific Grove, Ca.

Walsh, Kevin J. (1988) “Road to Effective Project Management”, *Journal of Management in Engineering,* Vol. 4, No. 1, January 1988

Watson, David (1971) “Reinforcement Theory of Personality and Social System: Dominance and Position in a Group Power Structure,” *Journal of Personality and Social Psychology,* Vol. 20, No. 2, 180-185, 1971

Wheatley, Margaret J. (1992) *Leadership and the New Science,* Berrett-Koehler Publishers, Inc., San Francisco, California

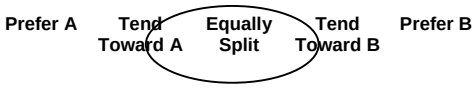
Zeisset, Ray M., (1998) *Statistic and Measurements, An Introduction for MBTI Users,* Center for Applications of Psychological Types, Gainesville, Florida

APPENDIX B

CHARACTERISTICS OF ENGINEERING and ARCHITECTURAL DESIGN PROFESSIONALS

Instructions for the Completion of this Form

1. The questionnaire will take about 20 minutes to complete.
2. Please complete each question by circling or checking the appropriate answer as follows:



3. In the case of most questions your opinion or preferred action is being sought, so for individuals there are no "right or wrong" answers.
4. The answers to the questions will be analyzed collectively. This participation is entirely optional. If for any reason you choose not to participate please place the instruments back in the envelope, seal and return it. An individual's responses will not be disclosed. Your firm will not have access to the source data – so please feel free to answer without inhibition. You help through honest and forthright answering is critical to the study. PLEASE ANSWER THE QUESTIONS AS TO HOW YOU WOULD ACT, NOT WHAT YOU THINK IS THE RIGHT ACTION (in the event they are different).
5. If you make a mistake, or change an answer please make any changes clear.
6. The purpose of this research is to analyze the relationship between the preferred actions and responses to project situations with the individual strengths associated with different personality types. The personality questionnaire (Myers-Briggs Type Indicator) that measures *normal* personality differences, has been previously completed by you, or is included in this packet. Feedback and a "training" session on your PersonalityType will be provided. Indicated your interest in a feedback session at the end of the questionnaire.
7. THANK YOU.

Paul G. Carr, P.E.
Virginia Polytechnic Institute and State University

Construction Engineering and Management Program
The Charles Edward Via, Jr. Department of Civil Engineering
200 Patton Hall
Blacksburg, Virginia 24016-0105

I AM INTERESTED IN ESTABLISHING PROFILES OF THE VARIOUS DESIGN SPECIALTIES. WE NEED YOUR HELP IN THIS STUDY, PLEASE INDICATE IN THE QUESTIONS BELOW YOUR PREFERRED COURSE OF ACTION UNDER VARIOUS SITUATIONS. PLEASE CIRCLE THE ANSWER THAT BEST IDENTIFIES YOUR PREFERENCE. PLEASE IGNORE OTHER ASPECTS OF YOUR JOB (i.e. personnel matters, continuing education, etc.) AND ANSWER ONLY WITH RESPECT TO YOUR PRIMARY DUTIES.

NAME: _____ **DATE:** _____

Engineering and Architectural Design Services Behavior Assessment

Section-A: Listed below are incidents describing some situations that may be associated with the Architectural and Engineering Design Services process. Although you may, or may not have experience firsthand with each of these situations, please indicate the response that most closely reflects your likely action, or opinion of the correct action, based on the information provided. The response categories are as follows:

Prefer A - I would prefer the approach described as A
Tend Toward A - I would tend toward the approach of A
Equally Split - I am evenly split on A and B
Tend Toward B - I would tend toward the approach of B
Prefer B - I would prefer the approach described as B

(Circle one)

1. When invited to submit a proposal to get hired to handle a new project, are you most effective when:

A) You refer to work previously successful and follow that procedure (i.e.: the winning team goes to the interview, and the outline that worked before is the script to follow): using the standard approach?

Or;

Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Are you more successful "clearing the decks" and looking at the proposal as a new adventure, open to responding with a new approach?

2. When presenting your plan to the client and the public are you most effective when:

A) You anticipate all possible questions before the presentation and are prepared to give the audience your answers?

Or: are you most effective at a public presentation,

Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) When "in the heat of the battle" you are confronted with new, and sometimes hostile questions that "blind side" you, forcing you to think quickly "on your feet"?

3. When doing a Study and Report how would you rate your effectiveness (*value*) to the firm under the two scenarios:

A) I am effective when the plan that is developed is prepared the *first time to be on budget*, as you had originally envisioned, without a need to continually rework the project due to scope and budget adjustments.

Or:

Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) I am effective when the plan undergoes various changes requiring me to *check the scope, estimate and re-estimate the budget*, re-work the plan to keep it and/or get it back on track.

4. In preparing to present a project plan to the Owner, are you most effective:

A) When you wrap things up for this Phase of the project with your ideas being primarily shown on a *set of drawings* that you can talk through with the client?

Or:

Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) When the drawings of your *preliminary plans* form only a part to your overall presentation of the project's ideas, *with the budgeted cost and schedule*, taking at least an equal, and maybe primary role?

5. Since teamwork is required for effective business operations, are you at your best when:

A) The interactions with other professionals and executives, either in-house or external, are planned and scheduled,

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) If the interactions with others are a reaction to business crisis, emergency situations and circumstances?

6. To what degree do you consider your role as a project leader on the Design team?

A) Seldom the Team Leader

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Frequent Team Leader

7. Given the experience you have had, do you feel you can handle just about any problem thrown at you?

A) Not confident that "any and all" problems could be handled

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Quite confident that I could figure out almost any problem assigned

8. When confronted with a problem during the Design Phase of the project what position appeals to you more:

A) "Sliding down the pole jumping in the truck and going to put out the fire"

Or:	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) "Taking your time, looking into the problem and being positive that your solution is right before taking any action?

9. When you are faced with a tight time schedule for a project:

A) Do you postpone the start of "Design" until the owner is able to provide you with an unequivocal understanding of what he wants,

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Do you just get started and help him work it out as you move through design?

10. If you are not clear on the objectives of the Design Phase Task, are you more apt to:

A) Stop the process and question the Team Leader,

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Continue to move forward the best you can, knowing the goals will become clearer with time and project development?

11. Once you and your team have "standards" in place, are you more comfortable with:

A) "if it ain't broke don't fix it"

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Do you firmly believe there is always a better way?

Section B: The following statements and questions ask for your opinion as to the best way to handle a particular aspect of the Engineering and Architectural Design Process. Please indicate your preference by circling, or placing a check mark next to the answer that most accurately reflects your opinion or approach.

12. Since teamwork is required for an effective Design, what is the ideal number of persons you are in continuous contact with to work effectively in the performance of your duties:

1 2 3 4 5+

13. If we accept that Construction expertise and input to the Design has some value, (labor and material availability, subcontracting plan, construction sequence, etc.) in your opinion and experience, at what point in the process is that input optimal?

	Planning 35% Complete
	Planning 90% Complete
	Design Documents Begun
	Design Documents 35% Complete
	Design Documents 90% Complete

14. At what point in the process is Vendor data and input of highest value?

	Planning 35% Complete
	Planning 90% Complete
	Design Documents Begun
	Design Documents 35% Complete
	Design Documents 90% Complete

15. When assigned to a project, as you have communications, what percentage of the time do you record activities of who, when, information exchanged, decisions made and directions given; and then file the report in the job files?

10%
25%
50%
75%
90%

16. When the project moves through the Design Phase at what intervals *do you* actually perform an estimate of probable cost?

	Continuously (15%, 35%, 65% & 90%)
	15%, 65% & 90%
	65% & 90%
	90%
	Pre-Bid

Section C: The following questions are general in nature and ask for your opinion on certain circumstances. Please indicate you opinion on these matters by placing a check next to the answer that best reflects your position on the issue.

17. In the project's planning phase how important is your *professional fulfillment* that the work is to "your standards," when contrasted with the owner's needs and the need to meet profit and fee expectations?

Very Important	Quite Important	Somewhat Important	Seldom Important	Minimally Important

18. If the project design is under severe time constraints (beyond your control) to be completed, with a goal to "wrap it up and get it out", how strongly do you feel that you, the contractor and your field manager can avoid failure through field re-design where, and if needed?

	High Probability
	Acceptable Approach
	Neutral
	Not a good approach
	Unlikely without problems

19. Would you favor the inclusion of a copy of you're A/E Contract's terms, conditions and responsibilities in the Construction Contract Bid Documents?

	Very Good Idea
	Acceptable
	Neutral
	Not a good idea
	Very bad idea

Section D: This set of questions asks your opinion on the importance of various aspects of the process on project success. Please indicate your view of the importance of the choices by circling your appropriate answer.

A - Very Important
A -Somewhat Important
NEUTRAL
E - Somewhat Important
E - Very Important

20. From what data source is the most valuable information received to impact the success of the project?

A) Owner's input is the most important

Or;

A - Very Important	A - Somewhat Important	Neutral	B - Somewhat Important	B - Very Important

B) Designer's experience the most important

21. What is more important in the success of a project?

A) Project Planning (Pre-Design) Effort

Or;

A - Very Important	A - Somewhat Important	Neutral	B - Somewhat Important	B - Very Important

B) Owner Experience

22. From your experience, who has the highest impact on the success or failure of a project?

A) Owner

Or;

A - Very Important	A - Somewhat Important	Neutral	B - Somewhat Important	B - Very Important

B) Contractor

23. What is the most important factor during the Construction Phase, to avoid claims and disputes on a project?

A) Concise Documents

Or;	A - Very Important	A - Somewhat Important	Neutral	B - Somewhat Important	B - Very Important

B) Communication

24. In the Planning Phase of the project both the Owner and the A/E develop basic project requirements and data. In your view what is the relative importance of the two sources of project programming?

A) A/E Develops the Program

Or;	A - Very Important	A - Somewhat Important	Neutral	B - Somewhat Important	B - Very Important

B) Owner develops a Written Program

<u>Section-E</u>: Listed below are some final incidents describing some situations that may be associated with the Architectural and Engineering Design Services process. Although you may, or may not have experience firsthand with each of these situations, please indicate the response that most closely reflects your likely action, or opinion of the correct action based on the information provided. The response categories are as follows:

Prefer A - I would prefer the approach described as A
Tend Toward A - I would tend toward the approach of A
Equally Split - I am evenly split on A and B
Tend Toward B - I would tend toward the approach of B
Prefer B - I would prefer the approach described as B

25. Do you view your role in the Design Phase process as:

A) As being responsible for performance outcomes

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Do you view your role as one of "simultaneous responsibilities with others" and performance outcomes are out of your control?

26. When approaching the Administration duties on a project to what extent do you view the owner, the contractor and your employees as your partners?

A) Not really as partners

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Complete and equal partners

27. When a problem arises on a job site is your initial personal reaction to:

A) Have your field representative investigate the situation and solve it together in due and appropriate time,

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Do you prefer to jump in your car and go figure it out yourself, then and there?

28. During the Construction Phase, when you are assigned to work with others, apart from and outside of staff within your own firm, would you prefer to:

A) Work with a diverse group of professionals with varied input to the process,

	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B
Or;					

B) Work with persons with backgrounds similar and equal to your own?

29. If the owner during the planning (Study and Report) phase of the project is demanding that you simultaneously tie down budget, scope and schedule, and is unresponsive and uncooperative in giving in on any of these issues, what tendency would you most likely follow?

A) Withdraw from the project,

	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B
Or;					

B) Continue, because the owner's attitude will change when he/she gains experience in the process?

30. Recognizing the need to check the design documents for accuracy would your approach be to:

A) Turn them over to another member of the firm (or team) to provide the side by side Specification/Drawing and coordination review,

	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B
Or;					

B) Perform the review yourself, with confidence?

31. When called upon to receive a contractor's safety plan are you more comfortable :

A) Reviewing the program for it's content and nature,

	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B
Or;					

B) Merely receiving it to verify its existence?

32. Do you view the bidding phase as an opportunity to:

A) Set the tone for the relationships between the owner, designer and contractors,

Or;	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Function in a "controlled" period only to let the market determine who the contractor will be?

33. The situation is the discovery of work that is not in conformance with the documents, and is rejected, with a dispute likely to follow. Is the best way to resolve the problem and comply with the contract requirements to:

A) Participate in a free-flow of alternatives and ideas (brainstorming), then selecting an answer that will suit all parties,

Or:	Prefer A	Tend Toward A	Equally Split	Tend Toward B	Prefer B

B) Consider the circumstances, refer to the specifications and drawings and proceed to determine the correct course of action?

PLEASE COMPLETE THE SECTION BELOW TO HELP ME CONTACT YOU IF THERE ARE ANY QUESTIONS ABOUT YOUR RESPONSES:

MBTI ® Feedback Requested _____ Yes _____ No, or _____ Previously Received
Or, If you have any questions relative to this research please contact me at: pcarr@vt.edu

Name:

Contact Telephone:

E-Mail:

Correspondence Address:

MANY THANKS FOR COMPLETING THIS QUESTIONNAIRE, IT IS VERY MUCH APPRECIATED

Now please place your completed Questionnaire into the envelope provided, along with the MBTI® Questionnaire and Answer sheet if provided to you, seal the envelope and return to the source from which you received this packet. Thank you again.

APPENDIX C-1

Critical Success Factors
Questionnaire Mapping

(Initial 52 Item Questionnaire)

Planning Questions
Design Questions
Construction Administration Questions
General Management Questions
"Unreliable Questions"

[This Appendix contains the complete listing of the 52 original questions developed for the Critical Success Factors questionnaire. The supplemental information contained in this Appendix is a mapping of the questionnaire with information on which is the corrected answer, the service category of the questions (planning, design, etc.) and the dimensions of personality that the question is most strongly correlated with. This information is derived from the literature review (correct answer), expert judgment (service category) and the results of the pilot study (personality dimension).]

QUESTIONS

1. P. When invited to submit a proposal to get hired to handle a new project, are <u>you most effective when</u>:

A) You refer to work previously successful and follow that procedure (ie: the winning team goes to the interview, and the outline that worked before is the script to follow): *using the standard approach*?

; or

E) Are you more successful "clearing the decks" and looking at the proposal as a new adventure*, open to responding with a new approach*?

A	B	C	D	E *
Use a standard approach	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Open to a new approach**

T/F Scale: Objective Decision vs. <u>Interpersonally Based Decisions</u>

2. P. When performing a <u>Study and Report</u> as you conduct your investigation into a project being considered for design and construction:

A) are <u>you most effective when</u> you plan out the meeting schedule, meet with all the necessary departments and committees and then put your ideas in solid form:

or:

E) are <u>you most effective when</u> you meet only with key participants and use your own ideas to create the plan for the client?

A	B	C	D	E *
Planning w/ all departments	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Planning only w/ key people**

J/P: Systematic Discipline vs. <u>Receptivity and Openness</u>

3. P. When presenting your plan to the client and the public are you <u>most effective</u> when:

A) you anticipate all possible questions before the presentation and be prepared you to give them your answers?

or:

E) or, are you <u>most effective</u> at a public presentation, "in the heat of the battle" when you are confronted with new and sometimes hostile questions that "blind side" you, forcing you to think quickly "on your feet"?

A	B	C	D	E *
Have prepared answers	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Enjoy thinking on your feet**

T/F Scale: Objective Decision vs. <u>Interpersonally Based Decisions</u>

4. P. When confronted with a problem during the <u>Planning Phase</u> of the project <u>what position appeals to you more</u>:

A) "knowing there is another way to do it out there its just a matter of <u>*continuing to look until we find it*</u>"

Or:

E) "<u>*Relying on your experience*</u> to know what the solution is"

A *	B	C	D	E
Look until you find the answer	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Rely heavily on your experience**

T/F Scale: <u>Objective Decision</u> vs. Interpersonally Based Decisions

5. P. When doing a Study and Report how would you rate your effectiveness (value) to the firm under the two senerios A and B:

A) The plan that is developed is prepared the first time to be on budget, as you had originally envisioned, without a need to continually rework the project due to scope and budget adjustments?

or:

E) When the plan undergoes various changes requiring you to check the scope, estimate and re-estimate the budget, re-work the plan to keep it and/or get it back on track?

A	B	C	D	E *
Being on Budget from beginning	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Estimate, re-work and re-estimate**

T/F Scale: Objective Decision vs. Interpersonally Based Decisions

6. P. In preparing to present a project plan to the owner are you more most effective when:

A) you wrap things up for this Phase of the project with your ideas being primarily shown on a set of drawings that you can talk through with the client?

or:

E) when the drawings of your preliminary plans form only a part to your overall presentation of the project's ideas, with the budgeted cost and schedule showing how you will get all of the project elements completed in a rational sequence, taking at least an equal, and maybe primary role?

A	B	C	D	E *
Set of Drawings (Preliminary)	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Report, budget, schedule and Drawings**

T/F Scale: Objective Decision vs. Interpersonally Based Decisions

7. P. When preparing the Study and Report are you most effective when the interactions with other teams members are:

A) a reaction to design situations, circumstances and new discoveries? (Pocock)

Or:

E) planned and scheduled,

A *	B	C	D	E
Unplanned and able to react	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Planned and Scheduled**

E/I: Action and Participation vs. Ideas and Reflection

8. C. Since teamwork is required for the effective <u>design</u> what is the ideal number of persons you are in continuous contact with to work effectively in the performance of your duties: (Pocock)

A	B	C	D	E *
1	2	3	4	5+

S/N: <u>Factual and Detailed Perceptions</u> vs. Possibilities and Abstract Observations
J/P: <u>Systematic Discipline</u> vs. Receptivity and Openness

9. D. When such interactions occur during the <u>Design Phase</u> of the project are you most effective when the interactions with other teams members, either in-house or external, are planned and scheduled, or if they are a reaction to design situations and circumstances? (Pocock)

A	B	C	D	E *
Unplanned and able to react	Most of the time – A)	Some of the time – A)	Most of the time – E)	Planned and Scheduled

J/P: <u>Systematic Discipline</u> vs. Receptivity and Openness

10. D. To what degree do you consider your role that of a project leader on the <u>Design</u> team?

A) Seldom the Team Leader
Or:
E) Frequent team Leader

A	B	C	D	E *
Infrequent Leadership Duties	Most of the time – A)	Some of the time – A)	Most of the time – E)	Active Leadership Duties

J/P: <u>Systematic Discipline</u> vs. Receptivity and Openness

11. D. In your participation on a <u>Design</u> team would you rather work on your own task, or would your prefered method of participation be through active interaction with the other integrated tasks of the design effort? (Lutz)

A	B	C	D	E *
Minimal Interaction	Most of the time – A)	Some of the time – A)	Most of the time – E)	Very Interactive

E/I: <u>Action and Participation</u> vs. Ideas and Reflection

12. G. Do you see the project manager or team leader's role more as a facilitator or that of a director? (Dias)

A *	B	C	D	E
Facilitator	Most of the time – A)	Some of the time – A)	Most of the time – E)	Director

J/P: Systematic Discipline vs. Receptivity and Openness

13. D. When a problem is identified during the Design Phase of a project please rate the effectiveness of the following two approaches: (Dias, Pocock)

A). The project manager (architect, director, supervisor) discusses the problem with the consultant (structural, site, landscape, M/E/P, etc.) and reports back to the design team:

Or:

E). The design team professionals (any one of the members most directly impacted by the problem) interacts directly with the consultant, reporting the results to and coordinating the answer with the other team members:

A	B	C	D	E *
Project Manager Lead	Most of the time – A)	Some of the time – A)	Most of the time – E)	Direct Team Member Contact

E/I: Action and Participation vs. Ideas and Reflection

14. D. When completing the Design on a project how important is it that it be reviewed by, and input received from suppliers and contractors, and will its impact actually improve the final design product? (Dias)

A	B	C	D	E *
Minimal Importance	Most of the time – A)	Some of the time – A)	Most of the time – E)	Great Importance

J/P: Systematic Discipline vs. Receptivity and Openness

15. D. How important is *cohesion* of the design team in improving the final design product? (Pocock)

A	B	C	D	E *
Minimally Important	Most of the time – A)	Some of the time – A)	Most of the time – E)	Very Important

J/P: Systematic Discipline vs. Receptivity and Openness

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

16. D. If you are under severe time constraints to complete the design of a project how important is it that rules, regulations, procedures and policies are strictly followed even if it means delivering the project late?

A	B	C	D	E *
Least Important	Most of the time – A)	Some of the time – A)	Most of the time – E)	Very Important

T/F Scale: Objective Decision vs. Interpersonally Based Decisions
S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

17. C. If the project design is under severe time constraints (beyond your control) to be completed with an option to "wrap it up and get it out", how strongly do you feel you, the contractor and your field manager can avoid failure through field re-design where needed? (Saarinem)

A *	B	C	D	E
Very Bad Idea	Most of the time – A)	Some of the time – A)	Most of the time – E)	Very Possible

E/I: Action and Participation vs. Ideas and Reflection

18. G. Given the experience you have had do you feel you can handle just about any problem thrown at you? (Lester)

A	B	C	D	E *
Not confident that "any and all" problems could be handled	Most of the time – A)	Some of the time – A)	Most of the time – E)	Quite confident that I could figure out almost any problem assigned

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

19. D. Do you feel that you are in control of the tasks on the design projects, or do you feel that the outcome of your effort is controlled primarily by others on your team and/or the project manager? (Lester)

A	B	C	D	E *
I have very little control	Most of the time – A)	Some of the time – A)	Most of the time – E)	I have significant control

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations
T/F Scale: Objective Decision vs. Interpersonally Based Decisions

20. G. How important is your professional fulfillment in the design effort when contrasted with the owner's needs?

A *	B	C	D	E
Least Important	Most of the time – A)	Some of the time – A)	Most of the time – E)	Very Important

E/I: Action and Participation vs. Ideas and Reflection

21. G. How important is professional fulfillment when contrasted with the need to meet profit and fee expectations?

A *	B	C	D	E
Least Important	Most of the time – A)	Some of the time – A)	Most of the time – E)	Very Important

E/I: Action and Participation vs. Ideas and Reflection

22. D. When confronted with a problem during the Design Phase of the project what position appeals to you more:

A) "Sliding down the pole jumping in the truck and going to put out the fire"

Or:

E) "Taking your time, looking into the problem and being positive that your solution is right before taking any action?

A	B	C	D	E *
Solving it on the run	Most of the time – A)	Some of the time – A)	Most of the time – E)	Develop a logical and sure solution before action

J/P: Systematic Discipline vs. Receptivity and Openness

23. P. From what data source is the most valuable design data received to impact the success of the project? (CII)

A *	B	C	D	E
Owner data most important	Most of the time – A)	Some of the time – A)	Most of the time – E)	Designer's experience most important

J/P: Systematic Discipline vs. Receptivity and Openness

24. D. If we accept that construction expertise (labor and material availability, subcontracting plan, construction sequence, etc.) and input to the design has some value, in your opinion and experience at what point in the process is that input optimal? (CII)

A *	B	C	D	E
Planning 35% Complete	Planning 90% Complete	Design Documents Begun	Design Documents 35% Complete	Design Documents 90% Complete

T/F Scale: Objective Decision vs. Interpersonally Based Decisions

25. P. At what point in the process is vendor data and input of highest value? (CII)

A *	B	C	D	E
Planning 35% Complete	Planning 90% Complete	Design Documents Begun	Design Documents 35% Complete	Design Documents 90% Complete

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

26. P. What is more important in the success of a project?(CII)

A) Clear and Accurate Scope Definition

Or:

E) Accurate Basic Design Data

A *	B	C	D	E
Accurate Scope Definition	Most of the time – A)	Some of the time – A)	Most of the time – E)	Accurate Basic Design Data

T/F Scale: Objective Decision vs. Interpersonally Based Decisions
J/P: Systematic Discipline vs. Receptivity and Openness
E/I: Action and Participation vs. Ideas and Reflection
S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

27. G. What is more important in the success of a project?(CII)

A *	B	C	D	E
Owner Profile and Experience	Most of the time – A)	Some of the time – A)	Most of the time – E)	Construction/ Vendor Input

J/P: Systematic Discipline vs. Receptivity and Openness
S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

28. P. What is more important in the success of a project?(CII)

A	B	C	D	E *
Project Pre-Planning Effort	Most of the time – A)	Some of the time – A)	Most of the time – E)	Owner Experience

J/P: Systematic Discipline vs. Receptivity and Openness

29. G. What is your estimate of the number of manhours of Design worth for each hour of Planning effort?

A *	B	C	D	E
9+	7-8	5-6	3-4	1-2

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

30. C. From your experience who has the highest impact on the success or failure of a project?
What is more important in the success of a project?(CII)

A *	B	C	D	E
Owner	Most of the time – A)	Some of the time – A)	Most of the time – E)	Contractor

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations
T/F Scale: Objective Decision vs. Interpersonally Based Decisions
J/P: Systematic Discipline vs. Receptivity and Openness

31. D. When you are faced with a tight time schedule for a project, do you postpone the start of "design" until the owner is able to provide you with an uequvical understanding of what he wants, or do you just get started and help him work it out as you move through design? (CII)

A *	B	C	D	E
Postpone and wait for the Owner	Most of the time – A)	Some of the time – A)	Most of the time – E)	Get Moving w/ Design

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

32. D. If you are not clear on the objectives of the Design Task are you more apt to stop the process and to question the team leader, or continue to move forward the best you can knowing the goals will become clear with time and project development? (CII)

A *	B	C	D	E
Stop the job to establish your personal understanding of the goal	Most of the time – A)	Some of the time – A)	Most of the time – E)	Continue to work in the Team and await the goal

J/P: Systematic Discipline vs. Receptivity and Openness

33. C. Once you and your team have "standards" in place are you more comortable with "if it ain't broke don't fix it" or, do you firmly believe there is always a better way?(CNA)

A	B	C	D	E *
"Ain't broke, don't change"	Most of the time – A)	Some of the time – A)	Most of the time – E)	There is always a better way

E/I: Action and Participation vs. Ideas and Reflection

34. D. Do you view your role in the Design Phase process as being responsible for performance outcomes, or do you view your role as one of "simutaneous responsibilities with others" and performance outcomes are out of your control?(CNA)

A	B	C	D	E *
Simultaneous responsibilities w/ others	Most of the time – A)	Some of the time – A)	Most of the time – E)	Significant control of outcomes

J/P: Systematic Discipline vs. Receptivity and Openness

35. G. When approaching the Administration duties on a project to what extent do you honestly view the owner and the contractor as your partners?

A	B	C	D	E *
Not really as partners	Most of the time – A)	Some of the time – A)	Most of the time – E)	Complete and equal partners

T/F Scale: Objective Decision vs. Interpersonally Based Decisions

36. C. What is the most important factor during the Construction Phase process to avoid claims and disputes on a project?

A	B	C	D	E *
Concise Documents	Most of the time – A)	Some of the time – A)	Most of the time – E)	Communication

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

37. C. When a problem arises on a job site is your initial personal reaction to have your field representative investigate the situation and solve it together in due and appropriate time, or do you prefer to jump in your car and go figure it out yourself then and there?

A	B	C	D	E *
Investigate thoroughly w/ staff	Most of the time – A)	Some of the time – A)	Most of the time – E)	Go to the Job-site yourself

T/F Scale: Objective Decision vs. Interpersonally Based Decisions
S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations
J/P: Systematic Discipline vs. Receptivity and Openness

38. D. When you are involved in a project, honestly when you have a communication what percentage of the time do you record activities of who, when, information exchanged, decisions made and directions given and then file the report in the job files?

A	B	C	D	E *
10%	25%	50%	75%	90%

J/P: Systematic Discipline vs. Receptivity and Openness

39. P. Once a project moves from the Planning Phase (which you worked on) to the Design Phase (which is assigned to another group), how long do you continue to "check-up" on the scope accuracy of the subsequent team? (CNA)

A	B	C	D	E *
5% Design Complete	25%	50%	75%	95% Design Complete

J/P: Systematic Discipline vs. Receptivity and Openness

40. P. In the Planning Phase of the project how important do you view the clients providing you with a written project program or is this the responsibility of the design professional to develop the data, program and report with limited owner input? (CNA)

A	B	C	D	E *
A/E Develops the Program	Most of the time – A)	Some of the time – A)	Most of the time – E)	Owner develops a written program

T/F Scale: Objective Decision vs. Interpersonally Based Decisions
S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

41. D. When the project moves through the Design Phase at what intervals do you perform (not should you, but do you) an estimate of probable cost for the project to effectively control the budget?

A *	B	C	D	E
Continuously (15%, 35%, 65% & 90%)	35%, 50%, 65% & 90%	50%, 65% & 90%	65% & 90%	Pre-Bid

E/I: Action and Participation vs. Ideas and Reflection

42. G. If the responsibility is retained by the owner to provide survey, soils and other technical services, to what degree do you believe it is the A/E's responsibility to independently re-check and verify the accuracy of this information?

A	B	C	D	E *
Accept data and use as provided	Most of the time – A)	Spot check for accuracy	Most of the time – E)	Thorough, in-depth review

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

43. P. When you are assigned to work on a project Study and Report would you prefer to work with a diverse group of professionals, within your own firm, with varied input to the process or with trained professionals with backgrounds similar and equal to your own?

A	B	C	D	E *
Similar Group of Talents	Most of the time – A)	Spot check for accuracy	Most of the time – E)	Diverse and Varied Talents

E/I: Action and Participation vs. Ideas and Reflection
T/F Scale: Objective Decision vs. Interpersonally Based Decisions
J/P: Systematic Discipline vs. Receptivity and Openness

44. D. When you are assigned to work on a project's Detailed Design Phase would you prefer to work with a diverse group of professionals, within your own firm, with varied input to the process or with trained professionals with backgrounds similar and equal to your own?

A	B	C	D	E *
Similar Group of Talents	Most of the time – A)	Some of the time – A)	Most of the time – E)	Diverse and Varied Talents

S/N: Factual and Detailed Perceptions vs. Possibilities and Abstract Observations

45. C. When you are assigned to work on a project's Construction Phase would you prefer to work with a diverse group of professionals, within your own firm, with varied input to the process or with trained professionals with backgrounds similar and equal to your own?

A	B	C	D	E *
Similar Group of Talents	Most of the time – A)	Some of the time – A)	Most of the time – E)	Diverse and Varied Talents

J/P: Systematic Discipline vs. Receptivity and Openness

46. G. If faced with the prospect of an increase in workload would you prefer to extend the deadlines and/or not accept as much work, or arrange for a prolonged period of extended overtime?

A	B	C	D	E *
Extended overtime to better service clients	Most of the time – A)	Some of the time – A)	Most of the time – E)	Cut back to better service clients

T/F Scale: Objective Decision vs. Interpersonally Based Decisions

47. G. Would you favor the inclusion of a copy of you're A/E in the Construction Contract Bid Documents?

A *	B	C	D	E
Very good idea	Most of the time – A)	May be beneficial	Most of the time – E)	Very bad idea

E/I: Action and Participation vs. Ideas and Reflection

48. P. If the owner during the planning (study and report) phase of the project is demanding that you simultaneously tie down budget, scope and schedule, and is unreponsive and uncooperative in giving in on any of these issues what tendency would you most likely follow?

A *	B	C	D	E
Withdraw from the project	Most of the time – A)	Some of the time – A)	Most of the time – E)	Continue, that owner's attitude will change when they gain experience in the process

E/I: Action and Participation vs. Ideas and Reflection

49. D. Recognizing the need to check the design documents for accuracy would your approach be to turn them over to another member of the firm (or team) to provide the side by side Spec/Drawing and coordination review, or would you feel more confident doing it yourself?

A *	B	C	D	E
Review them myself	Most of the time – A)	Some of the time – A)	Most of the time – E)	Have another review

E/I: Action and Participation vs. Ideas and Reflection

50. G. When called upon to receive a contractor's safety plan are you more comfortable reviewing the program for it's content and nature, or merely receiving it to verify it's existence?

A *	B	C	D	E
Review it for content	Most of the time – A)	Some of the time – A)	Most of the time – E)	Verify its existence

J/P: Systematic Discipline vs. Receptivity and Openness

51. C. Do you view the bidding phase as an opportunity to set the tone for the relationships between the owner, designer and contractors, or is this a "controlled" period only to let the market determine who the contractor will be?

A *	B	C	D	E
Time to integrate the team	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Explicit period of strict rules**

T/F Scale: Objective Decision vs. <u>Interpersonally Based Decisions</u>

52. C. In the event of the discovery of work that is not in conformance with the documents, and is rejected, a dispute will likely follow. Is the best way to resolve the problem and comply with the contract requirements to:

A) participate in a free-flow of alternatives and ideas (brainstorming) then selecting an answer that will suit all parties?

Or:

E) consider the circumstances, refer to the specifications and drawings and proceed to determine the correct course of action;

A *	B	C	D	E
Try to satisfy all parties to brainstorm a solution	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Evaluate the documents and meet the requirements, as contracted**

J/P: Systematic Discipline vs. <u>Receptivity and Openness</u>

APPENDIX C-2

Critical Success Factors (Removed Items)

From the Initial 52 Item Questionnaire those questions found to be "Unreliable Questions"

2. When performing a Study and Report as you conduct your investigation into a project being considered for design and construction:

A) are you most effective when you plan out the meeting schedule, meet with all the necessary departments and committees and then put your ideas in solid form:
or:
E) are you most effective when you meet only with key participants and use your own ideas to create the plan for the client?

4. When confronted with a problem during the Planning Phase of the project what position appeals to you more:

A) "knowing there is another way to do it out there its just a matter of *continuing to look until we find it*"
Or:
E) "*Relying on your experience* to know what the solution is"

7. When preparing the Study and Report are you most effective when the interactions with other teams members are:

A) a reaction to design situations, circumstances and new discoveries?
Or:
E) planned and scheduled,

11. In your participation on a Design team would you rather work on your own task, or would your prefered method of participation be through active interaction with the other integrated tasks of the design effort?

12. Do you see the project manager or team leader's role more as a facilitator or that of a director?

13. When a problem is identified during the Design Phase of a project please rate the effectiveness of the following two approaches

A). The project manager (architect, director, supervisor) discusses the problem with the consultant (structural, site, landscape, M/E/P, etc.) and reports back to the design team:
Or:
E). The design team professionals (any one of the members most directly impacted by the problem) interacts directly with the consultant, reporting the results to and coordinating the answer with the other team members:

14. When completing the Design on a project how important is it that it be reviewed by, and input received from suppliers and contractors, and will its impact actually improve the final design product?

15. How important is *cohesion* of the design team in improving the final design product?

16. If you are under severe time constraints to complete the design of a project how important is it that rules, regulations, procedures and policies are strictly followed even if it means delivering the project late?

19. Do you feel that you are in control of the tasks on the design projects, or do you feel that the outcome of your effort is controlled primarily by others on your team and/or the project manager?

21. How important is professional fulfillment when contrasted with the need to meet profit and fee expectations?

Least Important	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Very Important**

26. What is more important in the success of a project?

A) Clear and Accurate Scope Definition
Or:
E) Accurate Basic Design Data

27. What is more important in the success of a project?

Owner Profile and Experience	**Most of the time – A)**	**Some of the time – A)**	**Most of the time – E)**	**Construction/ Vendor Input**

29. What is your estimate of the number of manhours of Design worth for each hour of Planning effort?

9+	**7-8**	**5-6**	**3-4**	**1-2**

39. Once a project moves from the Planning Phase (which you worked on) to the Design Phase (which is assigned to another group), how long do you continue to "check-up" on the scope accuracy of the subsequent team?

5% Design Complete	**25%**	**50%**	**75%**	**95% Design Complete**

41. When the project moves through the Design Phase at what intervals do you perform (not should you, but do you) an estimate of probable cost for the project to effectively control the budget?

Continuously (15%, 35%, 65% & 90%)	**35%, 50%, 65% & 90%**	**50%, 65% & 90%**	**65% & 90%**	**Pre-Bid**

42. If the responsibility is retained by the owner to provide survey, soils and other technical services, to what degree do you believe it is the A/E's responsibility to independently re-check and verify the accuracy of this information?

43. When you are assigned to work on a project Study and Report would you prefer to work with a diverse group of professionals, within your own firm, with varied input to the process or with trained professionals with backgrounds similar and equal to your own?

46. If faced with the prospect of an increase in workload would you prefer to extend the deadlines and/or not accept as much work, or arrange for a prolonged period of extended overtime?

APPENDIX C-3

MBTI Dichotomies
and
Raw Point Range

[In order to determine if the CPSF questionnaire is balanced, both within and between personality dichotomies, the results of the pilot study are investigated. This Appendix maps each of the original 52 questions with the personality dichotomy with which it is most strongly correlated, and the direction of that correlation. This information then allowed the theoretical scoring of the questionnaire to determine if the instrument was in balance.]

APPENDIX C-3

Raw Score Range: With each Question answered with the correct "Implied Dichotomy" receiving 5 Points, and the wrong "Implied Dichotomy" scored with 1 Point.

Question Number	MBTI Personality							
	E	I	S	N	T	F	J	P
1					1	5		
2							1	5
3					1	5		
4					5	1		
5					1	5		
6					1	5		
7	5	1						
8			5	1				
9							5	1
10							5	1
11	5	1						
12							1	5
13	5	1						
14							5	1
15							5	1
16					1	5		
17	1	5						
18			5	1				
19			1	5				
20	5	1						
21	5	1						
22							5	1
23							1	5
24					5	1		
25			5	1				
26					5	1		
27							1	5
28							1	5
29			5	1				
30			1	5				
31			5	1				
32							1	5
33	1	5						
34							1	5
35					5	1		
36			1	5				
37					5	1		
38							5	1
39							5	1
40					1	5		
41	1	5						
42			5	1				
43	1	5						
44			5	1				
45							1	5
46					5	1		
47	1	5						
48	1	5						
49	1	5						
50							5	1
51					1	5		
52							1	5
Grand Total Predicted	**32**	**40**	**38**	**22**	**37**	**41**	**49**	**53**
	Extravert	**Introvert**	**Sensor**	**Intuitive**	**Thinker**	**Feeler**	**Judger**	**Perceiver**
% of Total Predicted	**44.4%**	**55.6%**	**63.3%**	**36.7%**	**47.4%**	**52.6%**	**48.0%**	**52.0%**
National Sample %	**49.3%**	**50.7%**	**73.3%**	**26.7%**	**40.2%**	**59.8%**	**54.1%**	**45.9%**
RAW SCORE RANGE	**E/I**	**12 to 60**	**S/N**	**10 to 55**	**T/F**	**13 to 65**	**J/P**	**17 to 85**

APPENDIX C-4

Factor Analysis

[This Appendix presents a Factor Analysis, through inter-correlation of the MBTI dichotomies with each of the original 52 questions. This allowed the mapping of both the dimension of personality most closely associated with each question, along with the associated performance direction of each dichotomy (i.e. E v. I, S v. N, etc.).]

Factor Analysis Correlations - Pilot Study

		EXTINT	SENSINTN	THNKFEEL	JUDGPERC
EXTINT	Pearson Correlation	1.000	0.021	0.243	(0.207)
	Sig. (2-tailed)	.	0.945	0.424	0.497
	N	13.000	13.000	13.000	13.000
SENSINTN	Pearson Correlation	0.021	1.000	(0.383)	0.324
	Sig. (2-tailed)	0.945	.	0.197	0.280
	N	13.000	13.000	13.000	13.000
THNKFEEL	Pearson Correlation	0.243	(0.383)	1.000	(0.092)
	Sig. (2-tailed)	0.424	0.197	.	0.765
	N	13.000	13.000	13.000	13.000
JUDGPERC	Pearson Correlation	(0.207)	0.324	(0.092)	1.000
	Sig. (2-tailed)	0.497	0.280	0.765	.
	N	13.000	13.000	13.000	13.000

VAR00001	Pearson Correlation	(0.142)	0.103	(0.491)	0.030	VAR00027	Pearson Correlation	(0.305)	(0.368)	0.272	(0.435)
	Sig. (2-tailed)	0.644	0.738	0.088	0.922		Sig. (2-tailed)	0.311	0.216	0.368	0.137
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00002	Pearson Correlation	(0.054)	(0.247)	0.218	(0.519)	VAR00028	Pearson Correlation	(0.259)	0.167	(0.195)	(0.572)
	Sig. (2-tailed)	0.861	0.415	0.473	0.069		Sig. (2-tailed)	0.394	0.585	0.522	0.041
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00003	Pearson Correlation	0.032	(0.255)	(0.597)	(0.228)	VAR00029	Pearson Correlation	0.045	0.406	0.053	(0.091)
	Sig. (2-tailed)	0.917	0.400	0.031	0.454		Sig. (2-tailed)	0.885	0.169	0.863	0.767
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00004	Pearson Correlation	(0.063)	0.106	0.333	0.151	VAR00030	Pearson Correlation	(0.226)	(0.641)	0.535	(0.482)
	Sig. (2-tailed)	0.838	0.731	0.266	0.622		Sig. (2-tailed)	0.458	0.018	0.060	0.095
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00005	Pearson Correlation	(0.071)	0.270	(0.288)	0.123	VAR00031	Pearson Correlation	0.061	0.490	0.007	0.146
	Sig. (2-tailed)	0.817	0.372	0.340	0.689		Sig. (2-tailed)	0.843	0.089	0.983	0.634
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00006	Pearson Correlation	(0.150)	0.268	(0.771)	0.245	VAR00032	Pearson Correlation	(0.006)	0.302	(0.034)	(0.534)
	Sig. (2-tailed)	0.626	0.377	0.002	0.420		Sig. (2-tailed)	0.984	0.316	0.913	0.060
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00007	Pearson Correlation	0.425	(0.178)	0.007	(0.565)	VAR00033	Pearson Correlation	(0.367)	0.132	(0.247)	0.140
	Sig. (2-tailed)	0.148	0.561	0.982	0.044		Sig. (2-tailed)	0.218	0.667	0.416	0.647
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00008	Pearson Correlation	(0.171)	0.496	(0.040)	0.425	VAR00034	Pearson Correlation	0.107	0.098	0.014	0.559
	Sig. (2-tailed)	0.578	0.085	0.897	0.148		Sig. (2-tailed)	0.727	0.749	0.963	0.047
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00009	Pearson Correlation	(0.320)	0.006	0.285	0.416	VAR00035	Pearson Correlation	0.156	(0.085)	0.505	0.285
	Sig. (2-tailed)	0.286	0.984	0.345	0.157		Sig. (2-tailed)	0.612	0.782	0.079	0.345
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00010	Pearson Correlation	(0.008)	0.197	0.357	0.639	VAR00036	Pearson Correlation	(0.040)	(0.590)	(0.037)	(0.126)
	Sig. (2-tailed)	0.979	0.519	0.231	0.019		Sig. (2-tailed)	0.898	0.034	0.904	0.683
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00011	Pearson Correlation	0.327	0.075	(0.132)	(0.082)	VAR00037	Pearson Correlation	(0.099)	(0.397)	0.416	(0.366)
	Sig. (2-tailed)	0.276	0.808	0.667	0.789		Sig. (2-tailed)	0.749	0.180	0.157	0.219
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000

VAR00012	Pearson Correlation	(0.228)	(0.189)	(0.175)	(0.433)	VAR00038	Pearson Correlation	(0.193)	0.215	0.112	0.688
	Sig. (2-tailed)	0.454	0.536	0.568	0.139		Sig. (2-tailed)	0.527	0.481	0.716	0.009
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00013	Pearson Correlation	0.359	(0.073)	(0.091)	0.004	VAR00039	Pearson Correlation	(0.198)	0.090	0.122	0.241
	Sig. (2-tailed)	0.229	0.812	0.768	0.989		Sig. (2-tailed)	0.517	0.770	0.691	0.428
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00014	Pearson Correlation	(0.072)	(0.211)	(0.025)	0.348	VAR00040	Pearson Correlation	(0.122)	0.469	(0.609)	0.246
	Sig. (2-tailed)	0.815	0.490	0.936	0.244		Sig. (2-tailed)	0.692	0.106	0.027	0.418
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00015	Pearson Correlation	0.080	(0.185)	0.077	0.187	VAR00041	Pearson Correlation	(0.572)	0.167	(0.021)	(0.026)
	Sig. (2-tailed)	0.796	0.545	0.802	0.540		Sig. (2-tailed)	0.041	0.585	0.945	0.934
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00016	Pearson Correlation	0.065	0.376	(0.393)	(0.120)	VAR00042	Pearson Correlation	(0.155)	0.390	(0.008)	(0.216)
	Sig. (2-tailed)	0.834	0.206	0.184	0.697		Sig. (2-tailed)	0.614	0.187	0.980	0.478
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00017	Pearson Correlation	(0.330)	0.116	(0.077)	(0.242)	VAR00043	Pearson Correlation	(0.368)	(0.052)	(0.368)	(0.366)
	Sig. (2-tailed)	0.271	0.706	0.802	0.425		Sig. (2-tailed)	0.217	0.867	0.216	0.218
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00018	Pearson Correlation	0.135	0.374	(0.005)	0.107	VAR00044	Pearson Correlation	(0.222)	0.308	0.074	0.256
	Sig. (2-tailed)	0.660	0.208	0.988	0.727		Sig. (2-tailed)	0.467	0.305	0.810	0.399
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00019	Pearson Correlation	(0.226)	(0.533)	0.467	(0.187)	VAR00045	Pearson Correlation	(0.161)	(0.364)	0.188	(0.544)
	Sig. (2-tailed)	0.458	0.061	0.107	0.541		Sig. (2-tailed)	0.599	0.222	0.538	0.054
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00020	Pearson Correlation	0.316	(0.301)	(0.110)	(0.161)	VAR00046	Pearson Correlation	(0.196)	(0.246)	0.408	0.362
	Sig. (2-tailed)	0.294	0.318	0.720	0.599		Sig. (2-tailed)	0.522	0.417	0.166	0.225
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00021	Pearson Correlation	0.487	(0.091)	(0.180)	0.353	VAR00047	Pearson Correlation	(0.520)	(0.113)	(0.100)	(0.102)
	Sig. (2-tailed)	0.091	0.767	0.556	0.237		Sig. (2-tailed)	0.069	0.712	0.745	0.741
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00022	Pearson Correlation	(0.164)	0.341	(0.067)	0.732	VAR00048	Pearson Correlation	(0.266)	0.211	(0.242)	(0.215)
	Sig. (2-tailed)	0.592	0.254	0.829	0.004		Sig. (2-tailed)	0.380	0.490	0.426	0.480
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00023	Pearson Correlation	(0.191)	(0.000)	(0.210)	(0.331)	VAR00049	Pearson Correlation	(0.312)	(0.014)	0.159	(0.028)
	Sig. (2-tailed)	0.533	0.999	0.492	0.269		Sig. (2-tailed)	0.299	0.965	0.603	0.927
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00024	Pearson Correlation	0.060	(0.206)	0.380	0.243	VAR00050	Pearson Correlation	(0.195)	(0.012)	0.149	0.517
	Sig. (2-tailed)	0.846	0.499	0.200	0.423		Sig. (2-tailed)	0.524	0.969	0.627	0.071
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00025	Pearson Correlation	(0.024)	0.286	0.036	0.079	VAR00051	Pearson Correlation	(0.363)	(0.071)	(0.646)	(0.077)
	Sig. (2-tailed)	0.937	0.343	0.908	0.798		Sig. (2-tailed)	0.222	0.819	0.017	0.803
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000
VAR00026	Pearson Correlation	0.380	(0.375)	0.438	(0.419)	VAR00052	Pearson Correlation	(0.020)	(0.205)	(0.250)	(0.620)
	Sig. (2-tailed)	0.200	0.207	0.134	0.154		Sig. (2-tailed)	0.947	0.503	0.410	0.024
	N	13.000	13.000	13.000	13.000		N	13.000	13.000	13.000	13.000

APPENDIX C-5 Reliability Analysis

Final 33-Item

Critical Success Factors Questionnaire

9-Planning Questions
10- Design Questions
8-Construction Questions
6-General Management Questions

[Once the Questionnaire's 19 weakest items were removed, the instrument was administered to the full research sample. The Reliability Analysis was performed on the full sample responses, verifying that the questionnaire's reliability did not weaken from that projected by the pilot study.]

Reliability Planning

```
 ****** Method 1 (space saver) will be used for this
analysis ******
  R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E
(A L P H A)
Reliability Coefficients

N of Cases =     88.0

Alpha =    .8099
```

Reliability Design – Contract Documents

```
 ****** Method 1 (space saver) will be used for this
analysis ******
  R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E
(A L P H A)
Reliability Coefficients

N of Cases =     88.0

Alpha =    .8740
```

Reliability Construction Administration

```
 ****** Method 1 (space saver) will be used for this
analysis ******
  R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E
(A L P H A)
Reliability Coefficients

N of Cases =     88.0

Alpha =    .9425
```

Reliability General Management

```
 ****** Method 1 (space saver) will be used for this
analysis ******
R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E
(A L P H A)
Reliability Coefficients

N of Cases =     88.0

Alpha =    .8783
```

APPENDIX C-6

Descriptive Statistics and Correlation Scores of the Respondent Results

Descriptive Statistics, Correlation and Significance for Individual Level Variables

	Variable	M	SD		1	2	3	4	5	6	7	8
1	Extraversion (-) Introversion (+)	-1.59	16.17	Corr.	1							
				Sig.	.							
2	Sensing (-) Intuition (+)	-7.22	12.79	Corr.	-0.13	1						
				Sig.	0.25	.						
3	Thinking (-) Feeling (+)	-10.51	11.26	Corr.	-0.04	0.06	1					
				Sig.	0.70	0.57	.					
4	Judging (-) Perceiving (+)	-10.81	14.16	Corr.	0.05	0.36 **	0.29 **	1				
				Sig.	0.62	0.00	0.01	.				
5	Planning- Concept Design	2.60	0.50	Corr.	-0.04	0.23 *	-0.01	0.24 *	1			
				Sig.	0.72	0.03	0.92	0.03	.			
6	Design- Contract Documents	3.33	0.48	Corr.	-0.07	-0.11	-0.13	-0.24 *	-0.07	1		
				Sig.	0.50	0.33	0.22	0.03	0.53	.		
7	Construction Administration	2.99	0.53	Corr.	-0.11	0.37 **	0.02	0.33 **	0.35 **	-0.23 *	1	
				Sig.	0.31	0.00	0.86	0.00	0.00	0.03	.	
8	Firm Management	3.25	0.53	Corr.	-0.08	0.02	0.07	-0.13	0.12	0.04	0.08	1
				Sig.	0.47	0.86	0.50	0.23	0.26	0.70	0.49	.

*** Correlation is significant at the 0.01 Level**
**** Correlation is significant at the 0.05**

N = 85

APPENDIX C-7

TYPE DISTRIBUTION OF THE RESEARCH SAMPLE AND THE NATIONAL REPRESENTATIVE SAMPLE (Base Population)

[This Appendix allows the comparison of the Research Sample's reported personality preferences with those of the general population. This summary covers single dimensions, pairs and whole-type combinations of personality dichotomies.]

TYPE DISTRIBUTION OF THE RESEARCH SAMPLE AND THE NATIONAL REPRESENTATIVE SAMPLE (Base Population)

	ISTJ	ISFJ	INFJ	INTJ
N	23	5	1	2
% of the Research Sample	27.06%	5.88%	1.18%	2.35%
% of the National Sample *	11.60%	13.80%	1.50%	2.10%
	2.33	0.43	0.78	1.12

	ISTP	ISFP	INFP	INTP
N	5	1	0	7
% of the Research Sample	5.88%	1.18%	0.00%	8.24%
% of the National Sample *	5.40%	8.80%	4.40%	3.30%
	1.09	0.13	0	2.50

	ESTP	ESFP	ENFP	ENTP
N	6	1	0	2
% of the Research Sample	7.06%	1.18%	0.00%	2.35%
% of the National Sample *	4.30%	8.50%	8.10%	3.20%
	1.64	0.14	0	0.74

	ESTJ	ESFJ	ENFJ	ENTJ
N	20	6	2	4
% of the Research Sample	23.53%	7.06%	2.35%	4.71%
% of the National Sample *	8.70%	12.30%	2.50%	1.80%
	2.70	0.57	0.94	2.61

(* Myers, et. Al, 1998, p. 298)

	N	Sample %	National %
E	41	48.24%	49.30%
I	44	51.76%	50.70%
S	67	78.82%	73.30%
N	18	21.18%	26.70%
T	69	81.18%	40.20%
F	16	18.82%	59.80%
J	63	74.12%	54.10%
P	22	25.88%	45.90%
IJ	31	36.47%	28.90%
IP	13	15.29%	21.80%
EP	9	10.59%	24.10%
EJ	32	37.65%	25.20%
ST	54	63.53%	29.90%
SF	13	15.29%	43.40%
NF	3	3.53%	16.40%
NT	15	17.65%	10.30%
SJ	54	63.53%	46.40%
SP	13	15.29%	27.00%
NP	9	10.59%	18.90%
NJ	9	10.59%	7.80%
TJ	49	57.65%	24.10%
TP	20	23.53%	16.10%
FP	2	2.35%	29.70%
FJ	14	16.47%	30.00%
IN	10	11.76%	11.20%
EN	8	9.41%	15.50%
IS	34	40.00%	39.50%
ES	33	38.82%	33.80%
ET	32	37.65%	17.90%
EF	9	10.59%	31.30%
IF	7	8.24%	28.40%
IT	37	43.53%	22.30%
ISTJ	23	27.06%	11.60%
ISTP	5	5.88%	5.40%
ESTP	6	7.06%	4.30%
ESTJ	20	23.53%	8.70%
ISFJ	5	5.88%	13.80%
ISFP	1	1.18%	8.80%
ESFP	1	1.18%	8.50%
ESFJ	6	7.06%	12.30%
INFJ	1	1.18%	1.50%
INFP	0	0.00%	4.40%
ENFP	0	0.00%	8.10%
ENFJ	2	2.35%	2.50%
INTJ	2	2.35%	2.10%
INTP	7	8.24%	3.30%
ENTP	2	2.35%	3.20%
ENTJ	4	4.71%	1.80%

APPENDIX C-8

ANOVA Results of Whole Type and Combination Influence v. Independent Dimensions of Personality

[There is a theory that combinations of dichotomy pairs and whole-type influence behavior, hence performance. This Appendix investigated the Attitude, Function, Temperament, Quadrant, Data Judging and Decision Judging dichotomy pairs. In addition, whole-type personalities were compared. This investigation found little support beyond the relationship observed between the construction phase questions and the perceiving (P) dimension of personality.]

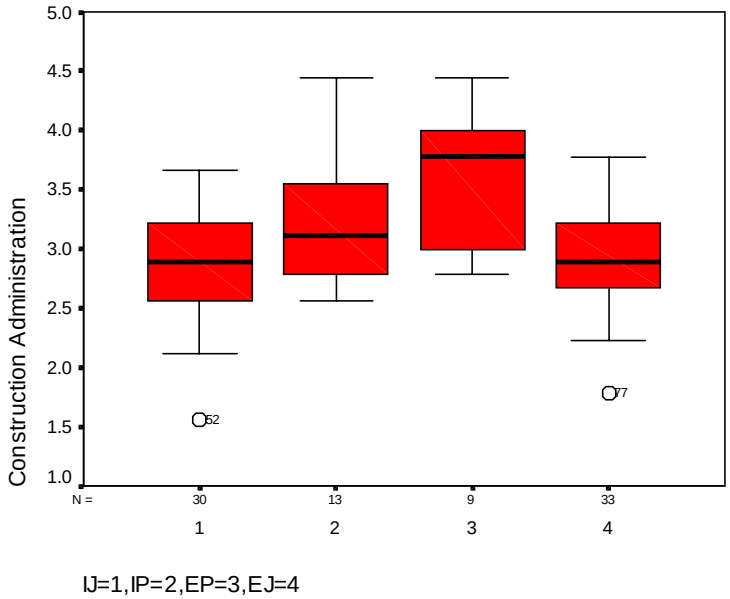
1. ATTITUDE PAIRS IJ=1, IP=2, EP=3, EJ=4 ONEWAY ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	1.003	3	.334	1.381	.254
	Within Groups	19.611	81	.242		
	Total	20.615	84			
Design -Contract Documents	Between Groups	.910	3	.303	1.311	.276
	Within Groups	18.738	81	.231		
	Total	19.648	84			
Construction Administration	Between Groups	4.644	3	1.548	6.602	.000
	Within Groups	18.994	81	.234		
	Total	23.638	84			
Firm Management	Between Groups	.226	3	7.536E-02	.259	.855
	Within Groups	23.606	81	.291		
	Total	23.832	84			

Case Processing Summary

Construction Administration		Cases		Missing		Total	
	IJ=1,IP=2,EP=3,EJ=4	N	Percent	N	Percent	N	Percent
	1	30	100.0%	0	.0%	30	100.0%
	2	13	100.0%	0	.0%	13	100.0%
	3	9	100.0%	0	.0%	9	100.0%
	4	33	100.0%	0	.0%	33	100.0%

Construction Administration



2. FUNCTION PAIRS ST=1, SF=2, NF=3, NT=4 ONEWAY ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	1.414	3	.471	1.989	.122
	Within Groups	19.200	81	.237		
	Total	20.615	84			
Design -Contract Documents	Between Groups	.586	3	.195	.830	.481
	Within Groups	19.062	81	.235		
	Total	19.648	84			
Construction Administration	Between Groups	1.598	3	.533	1.958	.127
	Within Groups	22.040	81	.272		
	Total	23.638	84			
Firm Management	Between Groups	.529	3	.176	.613	.608
	Within Groups	23.303	81	.288		
	Total	23.832	84			

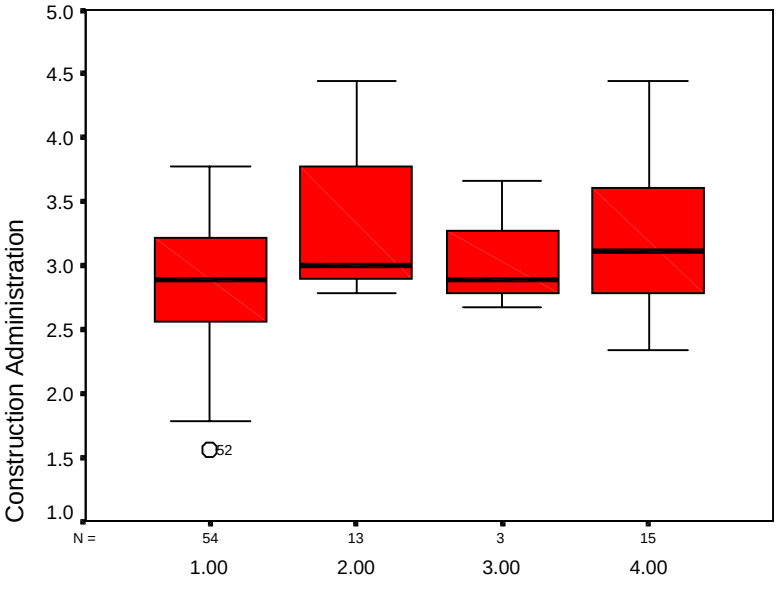
3. TEMPERAMENT PAIRS (KEIRSEY and BATES) SJ=1, SP=2, NF=3, NT=4 ONEWAY ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	.967	3	.322	1.329	.271
	Within Groups	19.648	81	.243		
	Total	20.615	84			
Design -Contract Documents	Between Groups	.513	3	.171	.723	.541
	Within Groups	19.135	81	.236		
	Total	19.648	84			
Construction Administration	Between Groups	3.162	3	1.054	4.169	.008
	Within Groups	20.476	81	.253		
	Total	23.638	84			
Firm Management	Between Groups	.101	3	3.373E-02	.115	.951
	Within Groups	23.731	81	.293		
	Total	23.832	84			

Case Processing Summary

Construction Administration		Cases		Missing		Total	
	TEMPPAIR	N	Percent	N	Percent	N	Percent
	1.00	54	100.0%	0	.0%	54	100.0%
	2.00	13	100.0%	0	.0%	13	100.0%
	3.00	3	100.0%	0	.0%	3	100.0%
	4.00	15	100.0%	0	.0%	15	100.0%

Construction Administration



4. QUADRANT PAIRS IS=1, ES=2, IN=3, EN=4 ONEWAY ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	1.104	3	.368	1.528	.214
	Within Groups	19.511	81	.241		
	Total	20.615	84			
Design -Contract Documents	Between Groups	.944	3	.315	1.363	.260
	Within Groups	18.704	81	.231		
	Total	19.648	84			
Construction Administration	Between Groups	1.920	3	.640	2.387	.075
	Within Groups	21.718	81	.268		
	Total	23.638	84			
Firm Management	Between Groups	7.028E-02	3	2.343E-02	.080	.971
	Within Groups	23.762	81	.293		
	Total	23.832	84			

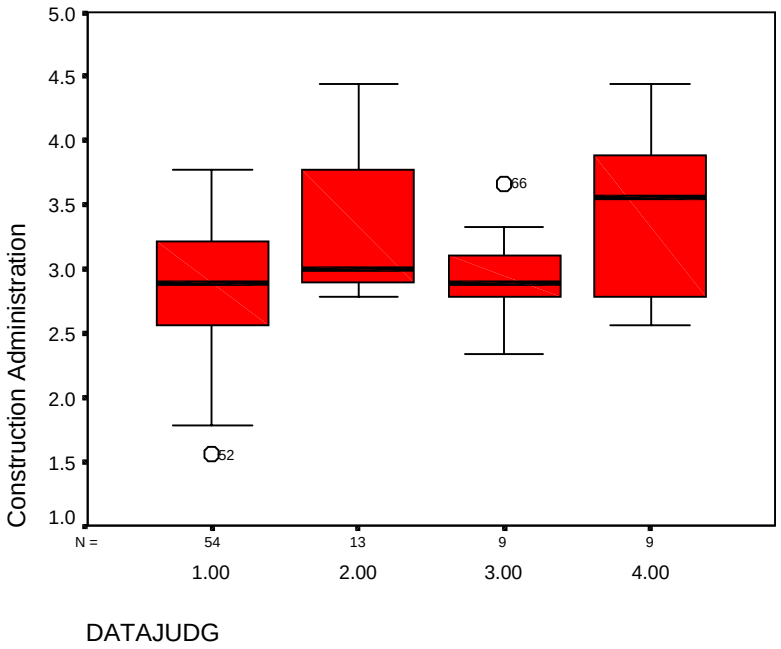
5. DATA JUDGING SJ=1, SP=2, NJ=3, NP=4 One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	1.625	3	.542	2.311	.082
	Within Groups	18.989	81	.234		
	Total	20.615	84			
Design -Contract Documents	Between Groups	.592	3	.197	.839	.476
	Within Groups	19.056	81	.235		
	Total	19.648	84			
Construction Administration	Between Groups	4.243	3	1.414	5.906	.001
	Within Groups	19.395	81	.239		
	Total	23.638	84			
Firm Management	Between Groups	.245	3	8.173E-02	.281	.839
	Within Groups	23.587	81	.291		
	Total	23.832	84			

Case Processing Summary

Construction Administration		Cases		Missing		Total	
	DATAJUDG	N	Percent	N	Percent	N	Percent
	1.00	54	100.0%	0	.0%	54	100.0%
	2.00	13	100.0%	0	.0%	13	100.0%
	3.00	9	100.0%	0	.0%	9	100.0%
	4.00	9	100.0%	0	.0%	9	100.0%

Construction Administration



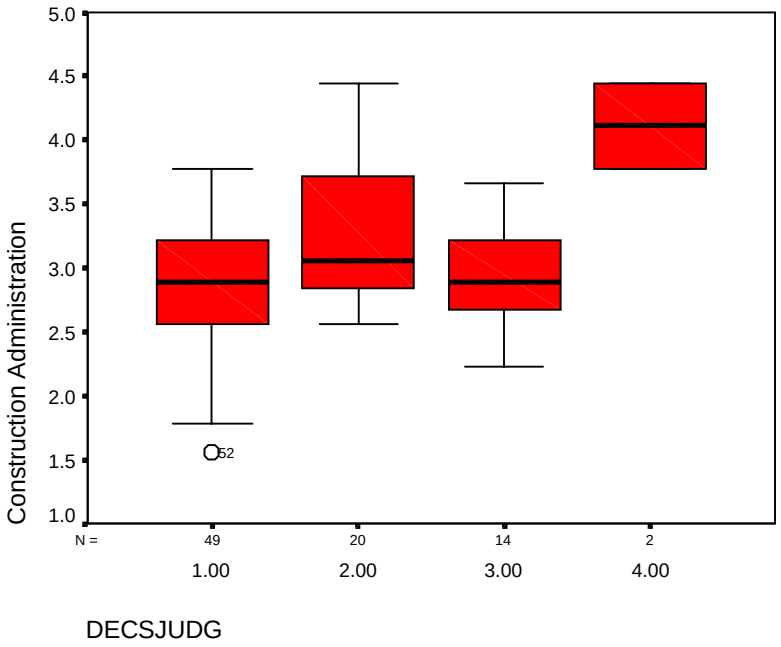
6. DECISION JUDGING TJ=1, TP=2, FJ=3, FP=4 One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	1.416	3	.472	1.991	.122
	Within Groups	19.199	81	.237		
	Total	20.615	84			
Design -Contract Documents	Between Groups	1.038	3	.346	1.505	.219
	Within Groups	18.610	81	.230		
	Total	19.648	84			
Construction Administration	Between Groups	5.274	3	1.758	7.754	.000
	Within Groups	18.364	81	.227		
	Total	23.638	84			
Firm Management	Between Groups	.539	3	.180	.625	.601
	Within Groups	23.294	81	.288		
	Total	23.832	84			

Case Processing Summary

Construction Administration		Cases		Missing		Total	
	DECSJUDG	N	Percent	N	Percent	N	Percent
	1.00	49	100.0%	0	.0%	49	100.0%
	2.00	20	100.0%	0	.0%	20	100.0%
	3.00	14	100.0%	0	.0%	14	100.0%
	4.00	2	100.0%	0	.0%	2	100.0%

Construction Administration



7. Whole Type ANOVA
(Cases where there are at least 3 or more respondents in each Type Category)

		Sum of Squares	df	Mean Square	F	Sig.
Planning - Conceptual Design	Between Groups	.922	6	.154	.810	.568
	Within Groups	8.730	46	.190		
	Total	9.652	52			
Design -Contract Documents	Between Groups	1.434	6	.239	.977	.452
	Within Groups	11.249	46	.245		
	Total	12.683	52			
Construction Administration	Between Groups	1.425	6	.238	1.001	.436
	Within Groups	10.914	46	.237		
	Total	12.340	52			
Firm Management	Between Groups	2.248	6	.375	1.451	.216
	Within Groups	11.879	46	.258		
	Total	14.127	52			

APPENDIX C-9

Critical Project Success Factors Questionnaire Results For the 85 Survey Respondents

[This Appendix provides a compilation of all of the answers to the final questionnaire's 33 items, listed by each of the 85 respondents.]

Question Service Category (P=Planning, D=Design, C=Construction, G=General Management	P	P	P	P	C	D	G	D	D	D	C	D
	Questions 1 through 33; Plus the Averages by Service Category											
Case	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	2	3	1	4	1	4	4	4	5	3	1	3
2	3	2	2	3	2	5	4	4	2	3	3	5
3	1	1	3	3	3	1	5	5	1	5	3	5
4	5	3	4	5	4	1	5	2	2	4	3	5
5	3	2	3	5	2	4	4	5	2	3	4	4
6	4	2	2	2	2	3	3	5	3	4	4	3
7	4	2	5	1	3	1	3	1	1	5	3	5
8	1	1	3	4	2	2	5	4	2	5	2	5
9	3	1	1	4	1	3	3	4	2	5	1	5
10	2	1	1	4	3	5	5	5	1	5	4	5
11	4	3	2	5	1	2	4	4	4	4	3	3
12	4	2	2	4	2	5	5	2	2	2	3	4
13	2	2	2	4	3	3	4	2	2	4	2	4
14	3	1	2	3	1	4	5	5	1	1	3	3
15	1	1	3	5	1	5	5	5	5	5	1	3
16	2	2	3	1	3	1	5	4	1	1	4	2
17	2	1	3	3	2	2	4	4	2	4	3	4
18	5	3	5	5	5	5	5	5	1	1	1	1
19	2	1	1	1	2	2	1	5	4	5	1	5
20	4	2	4	4	2	1	4	4	2	4	4	3
21	4	1	2	4	1	4	4	4	4	5	3	2
22	4	1	3	4	3	5	5	5	2	5	3	5
23	4	1	2	2	2	4	4	2	2	4	4	3
24	3	1	2	4	3	5	5	4	2	3	3	4
25	4	2	1	1	3	2	4	4	2	5	3	3
26	3	3	4	2	2	2	4	3	1	3	3	4
27	2	4	5	4	5	4	5	2	3	4	4	3
28	1	1	2	2	2	3	2	3	2	4	2	2
29	4	3	5	2	1	3	5	5	2	5	3	3
30	1	1	4	4	1	5	5	1	1	5	4	1
31	3	5	5	5	5	3	5	5	1	4	5	2
32	4	2	4	3	2	4	4	4	2	2	5	5
33	2	2	1	2	3	2	2	3	4	4	4	3
34	3	2	2	4	2	4	3	2	2	4	2	3
35	2	1	2	2	4	2	3	4	2	4	2	2
36	3	2	3	2	3	4	4	4	1	1	2	4
37	2	1	1	4	3	2	3	4	1	4	5	3
38	5	1	2	3	3	3	5	5	2	4	4	3
39	4	2	2	3	2	5	5	5	4	3	3	5
40	2	2	2	1	5	3	2	3	1	4	4	4
41	1	3	3	2	3	2	3	4	2	4	4	5
42	3	1	1	5	3	5	5	5	3	5	3	4
43	2	3	3	5	3	5	5	4	2	4	4	5
44	5	2	4	2	1	3	4	4	2	4	3	3
45	3	3	2	4	3	3	4	4	2	3	3	5

Question Service Category (P=Planning, D=Design,	P	P	P	P	C	D	G	D	D	D	C	D
C=Construction, G=General Management	Questions 1 through 33; Plus the Averages by Service Category											
Case	1	2	3	4	5	6	7	8	9	10	11	12
46	4	1	2	2	3	5	4	4	2	4	4	4
47	2	3	4	1	4	2	5	4	2	5	5	3
48	2	1	4	1	1	5	2	5	1	5	4	3
49	2	5	3	2	4	3	2	1	2	2	2	3
50	2	4	4	2	4	3	4	4	4	3	3	5
51	2	1	2	1	1	1	5	4	5	3	2	2
52	1	1	1	2	3	4	2	4	4	4	3	3
53	2	2	2	4	1	5	4	3	2	3	4	3
54	2	3	2	3	4	2	2	4	2	3	2	3
55	2	2	3	2	2	2	4	3	3	3	2	2
56	2	4	2	2	1	4	5	1	2	1	5	5
57	2	1	1	2	2	1	4	1	4	3	4	4
58	2	2	1	1	1	5	4	3	3	5	4	3
59	2	3	3	2	4	5	5	4	3	4	4	1
60	1	1	2	4	2	3	4	3	3	3	2	3
61	2	4	3	4	1	5	5	1	3	4	4	2
62	2	3	3	3	4	4	4	4	2	3	3	3
63	3	3	1	1	2	4	3	5	4	5	3	3
64	3	1	3	4	3	5	5	4	2	4	4	4
65	2	2	1	2	2	4	3	4	3	4	2	2
66	3	4	2	4	2	1	5	2	2	4	4	2
67	3	1	1	3	1	5	5	2	4	4	4	4
68	1	2	4	4	1	5	4	4	2	4	4	4
69	2	3	2	3	3	5	4	4	2	5	3	5
70	1	1	2	2	3	3	3	4	2	2	2	2
71	4	3	2	2	3	3	4	4	2	4	4	3
72	3	1	4	5	5	1	2	1	1	2	4	4
73	4	1	3	4	3	5	5	2	5	4	4	3
74	2	1	1	2	1	2	4	4	3	4	2	3
75	4	1	1	4	1	5	5	5	5	3	2	3
76	2	1	1	2	4	4	4	3	2	4	2	3
77	1	1	1	5	1	2	5	4	2	2	4	4
78	5	2	2	5	3	2	2	5	2	4	2	5
79	2	1	1	2	4	4	4	5	3	4	2	2
80	3	1	3	5	4	3	3	5	2	4	3	3
81	2	1	2	3	1	2	4	4	3	5	4	5
82	2	4	1	4	4	1	5	4	1	3	2	3
83	4	4	4	3	3	3	4	4	4	4	2	5
84	5	4	2	4	1	2	5	5	2	3	3	4
85	3	5	3	5	5	5	5	3	1	3	5	5

	D	P	D	D	G	C	G	P	P	C	C	P	D	G	C
Case	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**
1	3	2	5	4	3	1	2	1	1	1	5	1	4	2	1
2	5	4	4	3	3	2	1	2	2	3	4	3	4	3	2
3	4	5	4	3	1	4	2	3	1	2	3	1	5	1	1
4	4	4	4	3	2	1	3	5	1	5	5	3	5	3	4
5	4	4	4	2	3	1	2	3	4	3	5	2	3	4	2
6	4	4	4	3	2	4	3	3	1	2	1	4	4	4	4
7	1	4	5	5	4	5	3	1	1	3	5	1	2	4	1
8	3	3	5	5	4	1	2	1	1	4	5	2	5	4	4
9	2	5	5	4	1	3	3	3	1	1	3	3	2	2	1
10	4	2	3	5	4	2	1	5	1	1	5	5	5	4	1
11	4	2	4	4	2	4	2	4	1	1	5	2	4	2	2
12	5	4	5	3	4	1	4	2	3	4	5	3	5	4	4
13	2	3	3	5	2	1	3	4	1	5	3	3	5	2	4
14	2	5	1	5	3	4	2	3	1	1	1	5	5	5	1
15	4	2	5	5	2	3	2	5	1	1	3	2	4	1	5
16	5	3	2	4	2	4	2	1	1	3	5	5	4	3	1
17	1	5	3	5	3	3	4	3	3	3	3	3	4	4	3
18	4	3	3	1	1	4	4	4	4	5	5	1	5	5	5
19	3	2	1	5	2	2	3	2	2	5	2	2	2	1	1
20	2	2	4	4	2	3	5	3	1	1	3	2	4	4	2
21	4	2	4	2	2	4	4	3	2	2	3	5	3	4	3
22	5	3	5	2	1	4	3	3	1	3	3	3	5	2	1
23	5	5	2	3	1	4	5	5	2	4	3	3	4	4	2
24	2	4	4	2	2	2	2	4	1	3	4	4	4	5	1
25	2	1	4	5	3	3	3	4	2	2	5	2	4	3	2
26	4	2	5	4	3	1	3	5	2	3	1	1	4	3	2
27	2	4	2	5	4	1	4	4	3	5	5	3	5	4	5
28	3	5	1	2	3	4	1	3	2	2	3	3	3	3	2
29	5	2	3	5	2	4	2	3	1	1	1	3	5	4	4
30	5	2	3	3	2	4	5	1	1	5	5	1	5	5	1
31	5	3	5	5	5	1	3	5	1	1	5	1	4	3	1
32	2	4	1	3	2	5	2	5	2	4	4	3	4	4	2
33	2	2	2	2	2	4	4	2	4	2	2	2	4	4	4
34	4	3	3	1	3	2	2	4	1	4	5	4	3	2	2
35	1	1	1	1	2	4	2	3	4	5	5	2	3	2	4
36	4	5	3	5	1	1	3	5	1	3	3	1	5	3	1
37	3	4	1	5	1	4	2	2	2	2	5	3	4	2	2
38	5	5	1	5	4	5	2	3	1	1	3	3	5	5	3
39	5	3	4	5	3	4	2	2	1	3	3	2	3	2	2
40	2	3	4	4	2	3	3	2	2	2	4	2	5	3	1
41	3	3	5	5	1	2	4	3	2	3	2	3	4	3	2
42	5	2	5	2	1	2	5	1	1	1	5	1	5	1	5
43	5	1	5	3	1	4	3	3	3	1	3	2	4	4	2
44	5	3	5	5	3	3	5	3	2	2	5	1	4	4	1
45	4	3	4	2	3	4	2	2	3	3	3	2	4	4	1

	D	P	D	D	G	C	G	P	P	C	C	P	D	G	C
Case	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**
46	3	4	5	5	3	4	3	3	1	4	1	2	4	3	2
47	2	1	5	4	1	3	3	2	1	1	3	2	5	4	2
48	2	1	4	1	1	2	5	1	1	1	5	1	4	4	1
49	3	2	5	4	2	2	4	2	1	4	5	4	2	4	2
50	2	1	1	1	1	2	5	3	3	3	2	3	4	4	2
51	2	2	1	4	3	2	4	5	3	2	3	2	2	4	1
52	5	5	1	5	1	1	4	1	1	1	1	1	2	4	1
53	5	5	5	2	2	4	2	3	1	5	5	2	4	2	1
54	3	3	4	3	3	3	4	2	2	2	4	4	2	2	2
55	2	2	2	2	4	4	2	2	2	2	2	2	2	2	2
56	4	2	4	5	3	1	5	2	2	1	5	2	1	4	2
57	3	2	3	3	2	1	3	1	1	4	1	2	4	3	4
58	4	2	4	4	2	4	3	3	3	2	1	4	4	4	2
59	4	2	4	4	1	3	4	3	2	2	4	3	5	2	3
60	5	5	4	3	3	3	4	3	2	3	2	2	4	3	4
61	5	2	5	4	3	2	2	5	1	4	5	4	4	4	2
62	5	4	4	5	2	2	5	3	2	2	4	2	4	4	2
63	2	3	1	4	1	4	5	1	1	3	1	1	5	3	2
64	2	1	2	5	1	5	3	2	2	2	2	3	4	3	3
65	2	4	3	2	2	2	3	3	3	4	1	3	3	2	2
66	5	4	2	3	1	2	5	1	1	5	5	5	3	4	1
67	2	1	3	5	3	2	2	2	2	4	2	4	4	4	2
68	5	5	5	5	2	3	3	1	1	4	4	1	4	4	2
69	4	5	4	4	3	3	3	3	3	3	3	3	3	4	3
70	4	2	4	3	3	3	4	2	1	4	5	3	4	3	4
71	5	5	5	5	2	3	2	4	2	3	3	2	3	3	2
72	3	2	4	4	4	1	5	2	2	5	5	1	4	2	3
73	2	1	5	2	2	4	3	1	1	2	3	3	5	4	1
74	4	5	3	5	2	3	3	2	2	2	4	3	3	4	2
75	5	3	2	5	3	3	3	4	2	4	5	2	2	2	2
76	4	3	4	4	3	4	3	2	1	4	5	2	4	3	3
77	4	4	5	3	5	2	1	5	1	1	1	4	2	4	1
78	4	5	5	3	2	1	2	3	1	1	1	2	5	1	1
79	3	2	4	3	2	4	2	2	2	2	4	2	4	4	2
80	4	5	1	4	2	4	2	1	1	1	5	4	3	5	2
81	5	4	2	5	2	2	4	5	1	4	3	4	5	4	2
82	4	4	2	2	4	2	1	3	4	3	5	2	3	4	1
83	5	5	4	2	2	4	2	5	1	5	5	4	4	4	2
84	3	3	2	5	4	2	3	5	1	5	5	5	4	5	1
85	2	3	1	3	1	2	3	5	1	2	5	3	4	4	5

	C	P	D	G	C	C	Service Category Average Scores			
Case	28	29	30	31	32	33	PLAN	DESIGN	CONSTRUCTION	MANAGEMENT
1	2	1	4	2	5	2	1.778	3.900	2.111	2.600
2	2	2	3	4	4	2	2.556	3.800	2.667	3.000
3	4	2	5	5	4	1	2.222	3.800	2.778	2.800
4	4	3	2	3	4	5	3.667	3.200	3.889	3.200
5	5	4	3	4	4	3	3.333	3.400	3.222	3.400
6	4	3	2	4	4	4	2.778	3.500	3.222	3.200
7	4	2	1	4	2	1	2.333	2.700	3.000	3.600
8	2	2	4	5	3	3	2.000	4.000	2.889	4.000
9	3	3	2	3	3	4	2.667	3.400	2.222	2.400
10	4	4	2	2	4	1	2.778	4.000	2.778	3.200
11	5	2	1	4	3	2	2.778	3.400	2.889	2.800
12	4	2	2	2	2	3	2.889	3.500	3.111	3.800
13	2	4	4	1	2	2	2.778	3.400	2.667	2.400
14	4	2	3	4	4	1	2.778	3.000	2.222	3.800
15	3	2	2	3	5	1	2.444	4.300	2.556	2.600
16	4	5	2	4	2	4	2.556	2.600	3.333	3.200
17	2	2	2	5	5	1	2.778	3.100	2.778	4.000
18	5	5	1	5	5	5	3.889	2.700	4.444	4.000
19	5	4	1	4	3	2	1.889	3.300	2.556	2.200
20	4	2	2	4	4	2	2.667	3.000	2.778	3.800
21	4	1	2	2	2	1	2.667	3.400	2.556	3.200
22	3	1	1	5	5	1	2.556	4.000	2.889	3.200
23	3	3	2	4	4	2	3.000	3.100	3.111	3.600
24	4	3	2	2	4	2	2.889	3.200	2.889	3.200
25	4	2	2	4	3	3	2.111	3.300	3.111	3.400
26	4	1	1	4	4	3	2.556	3.100	2.556	3.400
27	5	5	2	4	5	5	3.778	3.200	4.444	4.200
28	2	4	2	2	2	2	2.556	2.500	2.333	2.200
29	4	4	1	4	4	2	3.000	3.700	2.667	3.400
30	5	2	2	5	2	2	1.889	3.100	3.222	4.400
31	5	1	3	5	2	1	3.222	3.700	2.889	4.200
32	4	3	2	2	3	4	3.333	2.900	3.667	2.800
33	5	2	4	2	4	4	2.111	3.000	3.556	2.800
34	3	2	2	2	4	2	2.778	2.800	2.889	2.400
35	4	3	1	2	4	4	2.222	2.100	4.000	2.200
36	5	2	4	5	2	3	2.667	3.500	2.556	3.200
37	4	2	1	4	5	4	2.333	2.800	3.778	2.400
38	3	4	5	1	4	1	3.000	3.800	3.000	3.400
39	4	2	5	4	4	3	2.333	4.400	3.111	3.200
40	5	2	2	5	5	3	2.000	3.200	3.556	3.000
41	4	2	1	4	3	1	2.444	3.500	2.667	3.000
42	5	1	5	5	3	1	1.778	4.400	3.111	3.400
43	4	4	4	4	4	2	2.889	4.100	3.000	3.400
44	4	3	2	5	2	5	2.778	3.700	2.889	4.200
45	3	2	3	4	2	4	2.667	3.400	2.889	3.400

	C	P	D	G	C	C	Service Category Average Scores			
Case	28	29	30	31	32	33	PLAN	DESIGN	CONSTRUCTION	MANAGEMENT
46	4	4	2	3	2	2	2.556	3.800	2.889	3.200
47	4	2	3	4	4	1	2.000	3.500	3.000	3.400
48	2	2	2	4	5	2	1.556	3.200	2.556	3.200
49	5	4	1	1	2	4	2.778	2.600	3.333	2.600
50	4	2	3	4	4	2	2.667	3.000	2.889	3.600
51	5	3	2	5	2	1	2.333	2.600	2.111	4.200
52	1	3	2	2	2	1	1.778	3.400	1.556	2.600
53	5	2	1	1	4	5	2.556	3.300	3.778	2.200
54	4	4	4	2	4	4	2.778	3.000	3.222	2.600
55	4	3	3	3	3	3	2.222	2.400	2.667	3.000
56	5	2	1	5	5	5	2.222	2.800	3.333	4.400
57	2	4	1	5	4	5	1.778	2.700	3.000	3.400
58	3	4	4	4	3	2	2.444	3.900	2.444	3.400
59	4	2	4	4	4	3	2.444	3.800	3.444	3.200
60	3	4	3	3	4	4	2.667	3.400	3.000	3.400
61	4	2	2	3	4	3	3.000	3.500	3.222	3.400
62	4	3	2	4	3	2	2.778	3.600	2.889	3.800
63	3	2	5	4	2	1	1.778	3.800	2.333	3.200
64	5	4	3	4	5	2	2.556	3.500	3.444	3.200
65	2	3	1	3	4	2	2.556	2.800	2.333	2.600
66	5	4	1	5	5	4	3.111	2.500	3.667	4.000
67	3	4	3	2	4	2	2.333	3.600	2.667	3.200
68	3	2	2	4	4	4	2.333	4.000	3.222	3.400
69	4	3	3	3	4	4	3.000	3.900	3.333	3.400
70	2	4	2	4	3	4	2.000	3.000	3.333	3.400
71	3	4	2	3	2	2	3.111	3.600	2.778	2.800
72	4	4	1	3	4	2	2.667	2.500	3.667	3.200
73	3	4	1	5	3	2	2.444	3.400	2.778	3.800
74	2	3	2	4	3	4	2.333	3.300	2.556	3.400
75	4	2	1	4	4	3	2.556	3.600	3.111	3.400
76	4	2	2	4	4	4	1.778	3.400	3.778	3.400
77	2	2	4	5	1	3	2.667	3.200	1.778	4.000
78	5	2	4	5	5	5	3.000	3.900	2.667	2.400
79	3	2	2	5	4	2	1.778	3.400	3.000	3.400
80	4	2	1	4	2	2	2.778	3.000	3.000	3.200
81	3	2	2	4	4	2	2.667	3.800	2.778	3.600
82	4	2	4	1	2	3	2.889	2.700	2.889	3.000
83	4	3	2	2	2	2	3.667	3.700	3.222	2.800
84	3	2	2	1	2	2	3.444	3.200	2.667	3.600
85	5	4	4	2	5	5	3.556	3.100	4.333	3.000

APPENDIX C-10

Respondent MBTI® TYPE
Intensity (Clarity)of Personality Dimensions
and
Critical Project Success Factors
Questionnaire Results by Service Area
For the 85 Survey Respondents

[This Appendix presents the "answers" to the CPSF questionnaire and the MBTI Form M personality test for each of the 85 respondents. This is the average score raw data, by category of personality and performance, used in the research analysis.]

Case	TYPE	E/I	S/N	T/F	J/P	PLAN	DESIGN	CONSTRUCTION	MANAGEMENT
1	ISTJ	7	-13	-3	-22	1.778	3.900	2.111	2.600
2	ESTJ	-19	-14	-17	-30	2.556	3.800	2.667	3.000
3	ESTJ	-12	-2	-16	-21	2.222	3.800	2.778	2.800
4	ENTP	-23	12	-10	4	3.667	3.200	3.889	3.200
5	ISFJ	26	-7	4	-6	3.333	3.400	3.222	3.400
6	ESTJ	-7	-1	-9	-14	2.778	3.500	3.222	3.200
7	ISTP	15	-1	-3	12	2.333	2.700	3.000	3.600
8	ESTJ	-8	-12	-18	-26	2.000	4.000	2.889	4.000
9	ESTJ	-4	-24	-13	-7	2.667	3.400	2.222	2.400
10	ISTP	4	-16	-26	5	2.778	4.000	2.778	3.200
11	ESTP	-24	-1	-6	2	2.778	3.400	2.889	2.800
12	ISTP	6	-5	-21	3	2.889	3.500	3.111	3.800
13	ISTJ	11	-16	-24	-17	2.778	3.400	2.667	2.400
14	ISFJ	21	-2	2	-24	2.778	3.000	2.222	3.800
15	ESTJ	-4	-21	-27	-30	2.444	4.300	2.556	2.600
16	INTJ	25	30	-30	-26	2.556	2.600	3.333	3.200
17	ESFJ	-21	-14	2	-23	2.778	3.100	2.778	4.000
18	ESFP	-1	-13	11	17	3.889	2.700	4.444	4.000
19	ISTJ	26	-21	-21	-24	1.889	3.300	2.556	2.200
20	INTP	3	15	-8	10	2.667	3.000	2.778	3.800
21	ISTJ	3	-3	-3	-16	2.667	3.400	2.556	3.200
22	ESTJ	-17	-8	-15	-29	2.556	4.000	2.889	3.200
23	ISTJ	9	-23	-12	-12	3.000	3.100	3.111	3.600
24	ENFJ	-16	4	12	-4	2.889	3.200	2.889	3.200
25	ESFJ	-19	-4	10	-27	2.111	3.300	3.111	3.400
26	ESFJ	-12	-5	4	-7	2.556	3.100	2.556	3.400
27	INTP	7	15	-15	5	3.778	3.200	4.444	4.200
28	ISFJ	30	-30	1	-10	2.556	2.500	2.333	2.200
29	ISTJ	19	-30	-2	-11	3.000	3.700	2.667	3.400
30	ISTJ	6	-30	-24	-30	1.889	3.100	3.222	4.400
31	ISTJ	11	-28	-30	-29	3.222	3.700	2.889	4.200
32	INTP	3	17	-14	30	3.333	2.900	3.667	2.800
33	INTP	4	3	-15	5	2.111	3.000	3.556	2.800
34	ISTJ	12	-11	-8	-8	2.778	2.800	2.889	2.400
35	ESTP	-30	-4	-24	12	2.222	2.100	4.000	2.200
36	INTP	7	9	-7	3	2.667	3.500	2.556	3.200
37	ISFP	7	-8	4	8	2.333	2.800	3.778	2.400
38	ENTJ	-16	10	-18	-16	3.000	3.800	3.000	3.400
39	ISTP	9	-1	-7	2	2.333	4.400	3.111	3.200
40	ISFJ	18	-17	5	-10	2.000	3.200	3.556	3.000
41	ENFJ	-18	6	7	-23	2.444	3.500	2.667	3.000
42	ISFJ	14	-16	9	-17	1.778	4.400	3.111	3.400
43	ISTJ	17	-20	-24	-25	2.889	4.100	3.000	3.400
44	ESFJ	-18	-8	3	-14	2.778	3.700	2.889	4.200
45	ENTJ	-5	15	-25	-19	2.667	3.400	2.889	3.400

Case	TYPE	E/I	S/N	T/F	J/P	PLAN	DESIGN	CONSTRUCTION	MANAGEMENT
46	ISTJ	7	-8	-27	-18	2.556	3.800	2.889	3.200
47	ISTJ	14	-8	-5	-23	2.000	3.500	3.000	3.400
48	ISTJ	8	-6	-11	-5	1.556	3.200	2.556	3.200
49	INTP	10	9	-2	21	2.778	2.600	3.333	2.600
50	ISTJ	11	-13	-13	-21	2.667	3.000	2.889	3.600
51	ISTJ	8	-16	-6	-15	2.333	2.600	2.111	4.200
52	ISTJ	9	-30	-5	-4	1.778	3.400	1.556	2.600
53	ESTJ	-30	-12	-25	-24	2.556	3.300	3.778	2.200
54	ISTJ	18	-1	-3	-6	2.778	3.000	3.222	2.600
55	ISTJ	25	-27	-26	-21	2.222	2.400	2.667	3.000
56	ESTJ	-22	-20	-29	-30	2.222	2.800	3.333	4.400
57	ISTJ	8	-3	-11	-6	1.778	2.700	3.000	3.400
58	ISTJ	12	-27	-22	-30	2.444	3.900	2.444	3.400
59	ISTJ	7	-8	-24	-9	2.444	3.800	3.444	3.200
60	ESTJ	-4	-6	-2	-23	2.667	3.400	3.000	3.400
61	ESTJ	-19	-3	-30	-30	3.000	3.500	3.222	3.400
62	ISTP	8	-3	-9	5	2.778	3.600	2.889	3.800
63	ENTJ	-24	1	-1	-21	1.778	3.800	2.333	3.200
64	ESTJ	-3	-9	-14	-23	2.556	3.500	3.444	3.200
65	ESTJ	-7	-4	-16	-16	2.556	2.800	2.333	2.600
66	INFJ	1	13	7	-16	3.111	2.500	3.667	4.000
67	INTP	4	6	-8	14	2.333	3.600	2.667	3.200
68	ESTJ	-22	-5	-18	-25	2.333	4.000	3.222	3.400
69	ESFJ	-30	-2	2	-3	3.000	3.900	3.333	3.400
70	ESTJ	-6	-25	-4	-14	2.000	3.000	3.333	3.400
71	ESTP	-16	-22	-11	5	3.111	3.600	2.778	2.800
72	ESTJ	-11	-9	-8	-29	2.667	2.500	3.667	3.200
73	ENTJ	-30	11	-6	-4	2.444	3.400	2.778	3.800
74	ESTJ	-11	-17	-4	-19	2.333	3.300	2.556	3.400
75	INTJ	6	10	-15	-6	2.556	3.600	3.111	3.400
76	ESTP	-10	-11	-1	5	1.778	3.400	3.778	3.400
77	ESTJ	-18	-16	-30	-20	2.667	3.200	1.778	4.000
78	ESTJ	-13	-3	-17	-14	3.000	3.900	2.667	2.400
79	ESTP	-28	-7	-15	4	1.778	3.400	3.000	3.400
80	ESTP	-1	-8	-5	8	2.778	3.000	3.000	3.200
81	ISTJ	11	-12	-6	-5	2.667	3.800	2.778	3.600
82	ESTJ	-28	-15	-16	-29	2.889	2.700	2.889	3.000
83	ISTJ	30	-1	-29	-17	3.667	3.700	3.222	2.800
84	ESFJ	-30	-29	6	-8	3.444	3.200	2.667	3.600
85	ENTP	-15	15	-13	12	3.556	3.100	4.333	3.000

APPENDIX C-11

Inter-Correlation of the Original 52 Questionnaire Items Evaluated in the Reliability Test

[This Appendix presents the complete inter-correlation results of the original 52-item questionnaire completed by the 13 respondents of the pilot study. These inter-correlation results were investigated by direct observation to select the items to remain for an instrument of improved reliability and internal consistency.]

		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Q1	Pearson Correlation	1.00	(0.40)	0.19	0.27	0.16	0.45	(0.29)	(0.22)	0.08
	Sig. (2-tailed)	.	0.18	0.53	0.38	0.60	0.12	0.33	0.47	0.79
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q2	Pearson Correlation	(0.40)	1.00	0.05	(0.17)	(0.20)	(0.37)	0.21	(0.27)	(0.45)
	Sig. (2-tailed)	0.18	.	0.88	0.59	0.51	0.21	0.49	0.38	0.12
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q3	Pearson Correlation	0.19	0.05	1.00	(0.30)	0.41	0.55	0.19	(0.50)	(0.38)
	Sig. (2-tailed)	0.53	0.88	.	0.32	0.17	0.05	0.54	0.08	0.20
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q4	Pearson Correlation	0.27	(0.17)	(0.30)	1.00	0.41	(0.24)	(0.43)	(0.05)	0.37
	Sig. (2-tailed)	0.38	0.59	0.32	.	0.17	0.42	0.14	0.86	0.21
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q5	Pearson Correlation	0.16	(0.20)	0.41	0.41	1.00	0.16	(0.51)	(0.19)	0.18
	Sig. (2-tailed)	0.60	0.51	0.17	0.17	.	0.60	0.08	0.53	0.56
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q6	Pearson Correlation	0.45	(0.37)	0.55	(0.24)	0.16	1.00	0.29	0.13	(0.28)
	Sig. (2-tailed)	0.12	0.21	0.05	0.42	0.60	.	0.34	0.67	0.36
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q7	Pearson Correlation	(0.29)	0.21	0.19	(0.43)	(0.51)	0.29	1.00	0.32	(0.46)
	Sig. (2-tailed)	0.33	0.49	0.54	0.14	0.08	0.34	.	0.29	0.11
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q8	Pearson Correlation	(0.22)	(0.27)	(0.50)	(0.05)	(0.19)	0.13	0.32	1.00	0.21
	Sig. (2-tailed)	0.47	0.38	0.08	0.86	0.53	0.67	0.29	.	0.49
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q9	Pearson Correlation	0.08	(0.45)	(0.38)	0.37	0.18	(0.28)	(0.46)	0.21	1.00
	Sig. (2-tailed)	0.79	0.12	0.20	0.21	0.56	0.36	0.11	0.49	.
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q10	Pearson Correlation	(0.55)	(0.33)	(0.47)	0.05	0.03	(0.30)	(0.10)	0.42	0.58
	Sig. (2-tailed)	0.05	0.26	0.10	0.88	0.93	0.32	0.75	0.15	0.04
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q11	Pearson Correlation	(0.16)	0.30	(0.01)	(0.37)	(0.01)	0.05	0.13	0.02	(0.48)
	Sig. (2-tailed)	0.61	0.32	0.98	0.22	0.97	0.86	0.67	0.95	0.10
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q12	Pearson Correlation	0.53	0.15	0.01	0.24	0.11	0.02	(0.25)	(0.04)	(0.01)
	Sig. (2-tailed)	0.06	0.62	0.96	0.43	0.72	0.95	0.41	0.90	0.98
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q13	Pearson Correlation	(0.29)	0.21	0.19	(0.43)	(0.51)	0.29	1.00	0.32	(0.46)
	Sig. (2-tailed)	0.33	0.49	0.54	0.14	0.08	0.34	-	0.29	0.11
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q14	Pearson Correlation	0.51	(0.51)	(0.10)	(0.08)	(0.25)	0.22	(0.09)	0.03	0.11
	Sig. (2-tailed)	0.07	0.07	0.74	0.81	0.41	0.47	0.77	0.92	0.73
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q15	Pearson Correlation	(0.21)	0.25	(0.24)	(0.34)	(0.32)	(0.17)	0.18	0.15	(0.33)
	Sig. (2-tailed)	0.49	0.42	0.42	0.25	0.29	0.57	0.57	0.61	0.27
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q16	Pearson Correlation	0.07	0.34	0.39	(0.15)	0.31	0.44	0.36	0.14	(0.34)
	Sig. (2-tailed)	0.83	0.26	0.18	0.62	0.30	0.14	0.22	0.64	0.25
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q17	Pearson Correlation	0.32	0.14	(0.07)	0.49	0.26	(0.11)	(0.21)	0.12	0.42
	Sig. (2-tailed)	0.29	0.66	0.81	0.09	0.38	0.71	0.48	0.69	0.15
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q18	Pearson Correlation	(0.06)	(0.12)	(0.11)	0.11	0.05	(0.05)	0.15	0.30	(0.26)
	Sig. (2-tailed)	0.85	0.69	0.72	0.71	0.88	0.87	0.63	0.32	0.39
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q19	Pearson Correlation	(0.22)	0.44	(0.27)	(0.10)	(0.32)	(0.34)	(0.27)	(0.30)	(0.08)
	Sig. (2-tailed)	0.48	0.13	0.38	0.74	0.29	0.26	0.38	0.32	0.81
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q20	Pearson Correlation	0.03	(0.18)	0.51	(0.04)	0.04	0.44	0.27	(0.34)	(0.16)
	Sig. (2-tailed)	0.93	0.56	0.07	0.89	0.89	0.13	0.37	0.25	0.61
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q21	Pearson Correlation	(0.10)	(0.33)	0.34	(0.32)	0.03	0.43	0.35	(0.09)	(0.27)
	Sig. (2-tailed)	0.75	0.28	0.26	0.28	0.91	0.14	0.24	0.77	0.38
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q22	Pearson Correlation	0.31	(0.51)	(0.29)	0.03	0.04	0.23	(0.15)	0.33	0.61
	Sig. (2-tailed)	0.30	0.07	0.33	0.93	0.89	0.44	0.62	0.27	0.03
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q23	Pearson Correlation	0.76	0.12	0.07	0.34	0.24	0.06	(0.49)	(0.37)	(0.11)
	Sig. (2-tailed)	0.00	0.70	0.81	0.26	0.43	0.83	0.09	0.21	0.71
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q24	Pearson Correlation	0.36	(0.42)	(0.46)	0.25	(0.45)	(0.09)	0.07	0.25	0.32
	Sig. (2-tailed)	0.23	0.15	0.11	0.41	0.12	0.77	0.81	0.40	0.28
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q25	Pearson Correlation	0.04	0.14	(0.36)	(0.07)	(0.50)	0.07	0.57	0.63	(0.00)
	Sig. (2-tailed)	0.90	0.65	0.23	0.81	0.08	0.81	0.04	0.02	0.99
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q26	Pearson Correlation	0.00	(0.26)	0.02	0.39	0.21	(0.41)	(0.29)	(0.32)	0.33
	Sig. (2-tailed)	1.00	0.39	0.94	0.19	0.50	0.16	0.33	0.29	0.27
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q27	Pearson Correlation	(0.09)	0.75	(0.14)	(0.14)	(0.39)	(0.39)	(0.18)	(0.46)	(0.26)
	Sig. (2-tailed)	0.77	0.00	0.64	0.66	0.19	0.19	0.55	0.12	0.40
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q28	Pearson Correlation	0.08	0.16	0.22	0.21	0.26	0.19	(0.22)	(0.11)	(0.10)
	Sig. (2-tailed)	0.79	0.59	0.47	0.50	0.39	0.53	0.48	0.72	0.75
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q29	Pearson Correlation	(0.54)	0.46	(0.38)	(0.27)	(0.27)	(0.13)	0.42	0.64	(0.37)
	Sig. (2-tailed)	0.06	0.11	0.20	0.37	0.38	0.68	0.15	0.02	0.21
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q30	Pearson Correlation	0.04	0.09	(0.17)	0.23	(0.13)	(0.49)	(0.51)	(0.41)	0.35
	Sig. (2-tailed)	0.90	0.77	0.58	0.45	0.67	0.09	0.07	0.17	0.23
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q31	Pearson Correlation	0.49	(0.24)	(0.51)	0.50	(0.23)	0.03	0.04	0.35	0.08
	Sig. (2-tailed)	0.09	0.43	0.07	0.08	0.45	0.94	0.90	0.23	0.80
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q32	Pearson Correlation	(0.00)	(0.30)	0.05	(0.43)	(0.23)	0.23	0.10	(0.04)	0.08
	Sig. (2-tailed)	1.00	0.32	0.88	0.14	0.44	0.44	0.75	0.90	0.81
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q33	Pearson Correlation	0.26	0.03	(0.12)	0.18	0.11	(0.23)	(0.13)	0.24	0.28
	Sig. (2-tailed)	0.39	0.92	0.70	0.55	0.71	0.44	0.68	0.43	0.36
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q34	Pearson Correlation	0.05	(0.01)	(0.12)	(0.10)	(0.35)	0.27	0.40	0.09	(0.32)
	Sig. (2-tailed)	0.88	0.97	0.70	0.74	0.24	0.37	0.17	0.78	0.29
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q35	Pearson Correlation	(0.16)	(0.23)	(0.46)	0.50	0.18	(0.52)	(0.26)	0.18	0.71
	Sig. (2-tailed)	0.60	0.45	0.11	0.08	0.55	0.07	0.39	0.56	0.01
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q36	Pearson Correlation	(0.23)	(0.10)	0.48	(0.36)	(0.03)	0.32	0.13	(0.23)	(0.26)
	Sig. (2-tailed)	0.45	0.74	0.09	0.22	0.92	0.29	0.66	0.45	0.39
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q37	Pearson Correlation	(0.08)	0.16	0.02	0.19	(0.29)	(0.28)	0.01	(0.32)	0.02
	Sig. (2-tailed)	0.78	0.60	0.95	0.53	0.34	0.35	0.96	0.29	0.95
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q38	Pearson Correlation	(0.08)	(0.34)	(0.42)	0.01	(0.43)	0.32	0.28	0.51	0.13
	Sig. (2-tailed)	0.80	0.26	0.15	0.96	0.14	0.29	0.35	0.07	0.67
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q39	Pearson Correlation	(0.06)	0.39	(0.14)	0.12	(0.02)	0.22	0.22	0.22	(0.08)
	Sig. (2-tailed)	0.84	0.19	0.66	0.69	0.95	0.47	0.46	0.46	0.79
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q40	Pearson Correlation	0.61	(0.29)	(0.02)	(0.11)	(0.04)	0.49	0.16	0.45	(0.16)
	Sig. (2-tailed)	0.03	0.33	0.94	0.72	0.90	0.09	0.61	0.12	0.59
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q41	Pearson Correlation	0.24	0.28	(0.11)	0.54	0.19	(0.13)	(0.30)	(0.06)	0.36
	Sig. (2-tailed)	0.43	0.35	0.71	0.06	0.54	0.68	0.32	0.85	0.23
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q42	Pearson Correlation	(0.17)	0.47	(0.07)	0.17	(0.02)	(0.14)	(0.02)	(0.14)	(0.14)
	Sig. (2-tailed)	0.58	0.10	0.82	0.59	0.94	0.65	0.95	0.64	0.64
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q43	Pearson Correlation	(0.09)	0.63	0.29	(0.52)	0.04	(0.03)	(0.11)	(0.24)	(0.22)
	Sig. (2-tailed)	0.77	0.02	0.34	0.07	0.90	0.93	0.73	0.43	0.46
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q44	Pearson Correlation	(0.62)	0.40	(0.30)	(0.39)	(0.10)	(0.18)	0.22	0.55	(0.01)
	Sig. (2-tailed)	0.02	0.17	0.32	0.18	0.75	0.55	0.47	0.05	0.98
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q45	Pearson Correlation	0.14	0.45	(0.12)	0.37	(0.06)	(0.54)	(0.29)	(0.35)	0.00
	Sig. (2-tailed)	0.64	0.12	0.70	0.21	0.83	0.05	0.34	0.24	0.99
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q46	Pearson Correlation	(0.04)	(0.05)	(0.32)	0.31	0.07	(0.55)	(0.46)	(0.22)	0.75
	Sig. (2-tailed)	0.91	0.88	0.28	0.31	0.82	0.05	0.12	0.47	0.00
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q47	Pearson Correlation	0.32	(0.17)	0.15	0.31	0.59	(0.08)	(0.91)	(0.41)	0.42
	Sig. (2-tailed)	0.29	0.58	0.62	0.30	0.03	0.79	0.00	0.17	0.16
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q48	Pearson Correlation	0.51	(0.36)	(0.02)	0.35	(0.05)	0.28	(0.17)	0.06	0.07
	Sig. (2-tailed)	0.08	0.22	0.94	0.24	0.86	0.35	0.57	0.84	0.82
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q49	Pearson Correlation	0.06	0.08	0.16	0.56	0.60	(0.15)	(0.63)	(0.50)	0.37
	Sig. (2-tailed)	0.84	0.79	0.61	0.05	0.03	0.63	0.02	0.08	0.22
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q50	Pearson Correlation	0.19	(0.26)	(0.13)	0.36	0.04	(0.21)	(0.18)	(0.12)	0.59
	Sig. (2-tailed)	0.53	0.38	0.68	0.23	0.89	0.50	0.56	0.70	0.03
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q51	Pearson Correlation	0.35	(0.42)	0.60	(0.07)	0.46	0.42	(0.32)	(0.20)	0.07
	Sig. (2-tailed)	0.24	0.16	0.03	0.82	0.12	0.16	0.29	0.52	0.82
	N	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q52	Pearson Correlation	0.09	0.60	0.35	(0.44)	(0.36)	0.18	0.28	(0.35)	(0.82)
	Sig. (2-tailed)	0.76	0.03	0.25	0.13	0.23	0.56	0.36	0.24	0.00

	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Q1	(0.55)	(0.16)	0.53	(0.29)	0.51	(0.21)	0.07	0.32	(0.06)	(0.22)	0.03	(0.10)
	0.05	0.61	0.06	0.33	0.07	0.49	0.83	0.29	0.85	0.48	0.93	0.75
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q2	(0.33)	0.30	0.15	0.21	(0.51)	0.25	0.34	0.14	(0.12)	0.44	(0.18)	(0.33)
	0.26	0.32	0.62	0.49	0.07	0.42	0.26	0.66	0.69	0.13	0.56	0.28
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q3	(0.47)	(0.01)	0.01	0.19	(0.10)	(0.24)	0.39	(0.07)	(0.11)	(0.27)	0.51	0.34
	0.10	0.98	0.96	0.54	0.74	0.42	0.18	0.81	0.72	0.38	0.07	0.26
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q4	0.05	(0.37)	0.24	(0.43)	(0.08)	(0.34)	(0.15)	0.49	0.11	(0.10)	(0.04)	(0.32)
	0.88	0.22	0.43	0.14	0.81	0.25	0.62	0.09	0.71	0.74	0.89	0.28
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q5	0.03	(0.01)	0.11	(0.51)	(0.25)	(0.32)	0.31	0.26	0.05	(0.32)	0.04	0.03
	0.93	0.97	0.72	0.08	0.41	0.29	0.30	0.38	0.88	0.29	0.89	0.91
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q6	(0.30)	0.05	0.02	0.29	0.22	(0.17)	0.44	(0.11)	(0.05)	(0.34)	0.44	0.43
	0.32	0.86	0.95	0.34	0.47	0.57	0.14	0.71	0.87	0.26	0.13	0.14
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q7	(0.10)	0.13	(0.25)	1.00	(0.09)	0.18	0.36	(0.21)	0.15	(0.27)	0.27	0.35
	0.75	0.67	0.41	-	0.77	0.57	0.22	0.48	0.63	0.38	0.37	0.24
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q8	0.42	0.02	(0.04)	0.32	0.03	0.15	0.14	0.12	0.30	(0.30)	(0.34)	(0.09)
	0.15	0.95	0.90	0.29	0.92	0.61	0.64	0.69	0.32	0.32	0.25	0.77
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q9	0.58	(0.48)	(0.01)	(0.46)	0.11	(0.33)	(0.34)	0.42	(0.26)	(0.08)	(0.16)	(0.27)
	0.04	0.10	0.98	0.11	0.73	0.27	0.25	0.15	0.39	0.81	0.61	0.38
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q10	1.00	(0.03)	(0.57)	(0.10)	(0.13)	0.12	(0.41)	(0.22)	(0.09)	(0.00)	(0.09)	0.24
	.	0.92	0.04	0.75	0.68	0.71	0.17	0.47	0.77	0.99	0.78	0.43
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q11	(0.03)	1.00	0.22	0.13	(0.13)	0.75	0.18	(0.31)	(0.30)	0.38	0.03	0.49
	0.92	.	0.46	0.67	0.68	0.00	0.56	0.30	0.31	0.21	0.92	0.09
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q12	(0.57)	0.22	1.00	(0.25)	0.05	0.12	0.11	0.63	(0.30)	0.19	(0.09)	(0.35)
	0.04	0.46	.	0.41	0.86	0.71	0.73	0.02	0.32	0.54	0.78	0.23
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q13	(0.10)	0.13	(0.25)	1.00	(0.09)	0.18	0.36	(0.21)	0.15	(0.27)	0.27	0.35
	0.75	0.67	0.41	.	0.77	0.57	0.22	0.48	0.63	0.38	0.37	0.24
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q14	(0.13)	(0.13)	0.05	(0.09)	1.00	0.26	(0.28)	(0.38)	0.21	0.11	(0.20)	0.16
	0.68	0.68	0.86	0.77	.	0.39	0.36	0.21	0.48	0.71	0.52	0.60
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q15	0.12	0.75	0.12	0.18	0.26	1.00	(0.18)	(0.46)	(0.06)	0.50	(0.31)	0.35
	0.71	0.00	0.71	0.57	0.39	.	0.56	0.12	0.84	0.08	0.29	0.25
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q16	(0.41)	0.18	0.11	0.36	(0.28)	(0.18)	1.00	0.26	0.17	(0.36)	(0.04)	(0.06)
	0.17	0.56	0.73	0.22	0.36	0.56	.	0.39	0.58	0.23	0.91	0.85
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q17	(0.22)	(0.31)	0.63	(0.21)	(0.38)	(0.46)	0.26	1.00	(0.20)	(0.25)	(0.12)	(0.66)
	0.47	0.30	0.02	0.48	0.21	0.12	0.39	.	0.51	0.40	0.69	0.01
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q18	(0.09)	(0.30)	(0.30)	0.15	0.21	(0.06)	0.17	(0.20)	1.00	(0.49)	(0.51)	(0.25)
	0.77	0.31	0.32	0.63	0.48	0.84	0.58	0.51	.	0.09	0.07	0.42
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q19	(0.00)	0.38	0.19	(0.27)	0.11	0.50	(0.36)	(0.25)	(0.49)	1.00	(0.02)	0.01
	0.99	0.21	0.54	0.38	0.71	0.08	0.23	0.40	0.09	.	0.96	0.98
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q20	(0.09)	0.03	(0.09)	0.27	(0.20)	(0.31)	(0.04)	(0.12)	(0.51)	(0.02)	1.00	0.60
	0.78	0.92	0.78	0.37	0.52	0.29	0.91	0.69	0.07	0.96	.	0.03
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q21	0.24	0.49	(0.35)	0.35	0.16	0.35	(0.06)	(0.66)	(0.25)	0.01	0.60	1.00
	0.43	0.09	0.23	0.24	0.60	0.25	0.85	0.01	0.42	0.98	0.03	.
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q22	0.42	(0.12)	(0.20)	(0.15)	0.48	(0.03)	0.06	(0.01)	(0.10)	(0.13)	(0.22)	0.13
	0.15	0.70	0.52	0.62	0.10	0.92	0.84	0.98	0.75	0.67	0.48	0.68
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q23	(0.73)	0.04	0.72	(0.49)	0.29	(0.05)	0.19	0.39	0.01	0.14	(0.26)	(0.42)
	0.00	0.90	0.01	0.09	0.33	0.88	0.54	0.18	0.97	0.64	0.38	0.15
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q24	(0.01)	(0.36)	0.10	0.07	0.77	0.04	(0.31)	(0.02)	0.24	0.02	(0.19)	(0.12)
	0.97	0.23	0.74	0.81	0.00	0.89	0.30	0.95	0.44	0.95	0.53	0.71
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q25	(0.12)	(0.19)	0.04	0.57	0.09	(0.04)	0.43	0.29	0.34	(0.31)	(0.35)	(0.36)
	0.69	0.53	0.89	0.04	0.76	0.90	0.15	0.34	0.25	0.31	0.24	0.23
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q26	0.02	(0.34)	0.15	(0.29)	(0.09)	(0.45)	(0.39)	0.24	(0.08)	(0.10)	0.33	(0.10)
	0.95	0.25	0.63	0.33	0.76	0.13	0.19	0.44	0.80	0.74	0.27	0.74
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q27	(0.34)	0.12	0.17	(0.18)	(0.08)	0.25	(0.11)	(0.02)	(0.24)	0.74	(0.25)	(0.41)
	0.25	0.69	0.57	0.55	0.80	0.42	0.72	0.95	0.43	0.00	0.42	0.16
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q28	(0.37)	(0.23)	0.31	(0.22)	(0.55)	(0.65)	0.24	0.51	(0.15)	(0.08)	0.31	(0.41)
	0.21	0.44	0.30	0.48	0.05	0.02	0.43	0.07	0.63	0.79	0.29	0.16
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q29	0.11	0.47	0.00	0.42	(0.40)	0.41	0.37	(0.00)	0.25	0.03	(0.38)	(0.14)
	0.71	0.11	0.99	0.15	0.17	0.16	0.22	0.99	0.40	0.92	0.20	0.64
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q30	(0.12)	(0.33)	0.34	(0.51)	0.11	(0.21)	(0.52)	0.23	(0.34)	0.55	0.06	(0.42)
	0.69	0.27	0.25	0.07	0.71	0.49	0.07	0.46	0.26	0.05	0.84	0.15
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q31	(0.17)	(0.29)	0.18	0.04	0.22	(0.19)	0.02	0.34	0.41	(0.37)	(0.29)	(0.37)
	0.59	0.34	0.56	0.90	0.47	0.53	0.96	0.26	0.16	0.21	0.33	0.21
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q32	0.29	0.22	(0.35)	0.10	0.67	0.48	(0.23)	(0.70)	(0.19)	0.36	0.08	0.62
	0.34	0.46	0.25	0.75	0.01	0.10	0.45	0.01	0.54	0.23	0.80	0.02
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q33	(0.05)	(0.22)	0.35	(0.13)	0.04	0.09	0.01	0.53	0.28	(0.36)	(0.66)	(0.54)
	0.86	0.47	0.24	0.68	0.89	0.76	0.97	0.06	0.36	0.23	0.01	0.06
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q34	0.04	0.13	(0.44)	0.40	0.47	0.40	0.08	(0.59)	0.28	0.10	(0.09)	0.40
	0.89	0.67	0.13	0.17	0.10	0.17	0.79	0.03	0.35	0.74	0.76	0.18
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q35	0.62	(0.01)	0.10	(0.26)	(0.16)	0.04	(0.38)	0.34	(0.32)	0.02	(0.02)
	0.02	0.98	0.74	0.39	0.61	0.89	0.20	0.25	0.29	0.95	0.95
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q36	(0.04)	0.14	(0.08)	0.13	0.15	0.15	(0.23)	(0.50)	(0.29)	0.37	0.60
	0.90	0.64	0.79	0.66	0.63	0.64	0.45	0.08	0.34	0.21	0.03
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q37	(0.24)	(0.76)	(0.21)	0.01	0.05	(0.53)	(0.22)	0.04	0.29	0.04	0.06
	0.43	0.00	0.48	0.96	0.88	0.07	0.48	0.89	0.34	0.90	0.86
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q38	0.43	(0.12)	(0.43)	0.28	0.36	0.14	(0.17)	(0.36)	0.07	0.10	0.05
	0.14	0.71	0.14	0.35	0.23	0.65	0.57	0.22	0.82	0.76	0.87
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q39	(0.05)	0.28	0.11	0.22	(0.06)	0.19	0.54	0.12	(0.21)	0.33	(0.02)
	0.87	0.35	0.71	0.46	0.84	0.53	0.05	0.70	0.50	0.27	0.94
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q40	(0.35)	0.12	0.34	0.16	0.48	0.20	0.35	0.12	0.39	(0.42)	(0.41)
	0.25	0.70	0.26	0.61	0.10	0.51	0.24	0.70	0.18	0.15	0.16
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q41	(0.14)	(0.51)	0.25	(0.30)	(0.34)	(0.50)	0.18	0.77	(0.08)	(0.09)	(0.23)
	0.64	0.07	0.42	0.32	0.25	0.08	0.56	0.00	0.80	0.76	0.44
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q42	(0.08)	(0.28)	(0.26)	(0.02)	(0.63)	(0.45)	0.23	0.27	0.11	(0.12)	(0.08)
	0.79	0.35	0.39	0.95	0.02	0.12	0.45	0.37	0.72	0.69	0.80
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q43	(0.26)	0.39	0.26	(0.11)	(0.37)	0.23	0.30	0.16	(0.38)	0.31	(0.21)
	0.39	0.19	0.38	0.73	0.21	0.46	0.32	0.60	0.20	0.31	0.49
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q44	0.41	0.32	(0.26)	0.22	(0.26)	0.42	0.34	(0.10)	0.15	0.11	(0.56)
	0.16	0.28	0.39	0.47	0.40	0.15	0.25	0.74	0.62	0.71	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q45	(0.35)	(0.05)	0.62	(0.29)	(0.28)	0.04	(0.29)	0.55	(0.20)	0.25	(0.16)
	0.23	0.86	0.02	0.34	0.35	0.90	0.33	0.05	0.52	0.40	0.60
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q46	0.53	(0.22)	(0.10)	(0.46)	0.03	0.03	(0.48)	0.19	(0.38)	0.24	(0.21)
	0.06	0.47	0.74	0.12	0.92	0.93	0.10	0.54	0.20	0.43	0.50
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q47	(0.05)	(0.22)	0.33	(0.91)	0.03	(0.29)	(0.25)	0.29	(0.27)	0.23	(0.08)
	0.87	0.48	0.27	0.00	0.92	0.33	0.41	0.33	0.37	0.45	0.81
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q48	(0.35)	(0.60)	0.24	(0.17)	0.09	(0.63)	(0.14)	0.38	0.20	(0.34)	0.14
	0.24	0.03	0.44	0.57	0.78	0.02	0.64	0.20	0.51	0.26	0.65
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q49	0.04	(0.43)	(0.07)	(0.63)	(0.32)	(0.60)	0.01	0.33	(0.19)	0.09	0.12
	0.88	0.14	0.83	0.02	0.28	0.03	0.98	0.27	0.54	0.77	0.70
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q50	0.31	(0.68)	(0.37)	(0.18)	0.24	(0.32)	(0.25)	0.13	0.17	(0.28)	(0.24)
	0.30	0.01	0.21	0.56	0.42	0.29	0.41	0.66	0.58	0.35	0.43
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q51	(0.18)	(0.22)	0.22	(0.32)	0.03	(0.30)	(0.15)	0.14	(0.10)	(0.30)	0.26
	0.57	0.46	0.47	0.29	0.93	0.32	0.61	0.65	0.74	0.33	0.39
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q52	(0.78)	0.23	0.20	0.28	0.01	0.18	0.29	(0.20)	0.11	0.27	0.00
	0.00	0.45	0.51	0.36	0.97	0.56	0.34	0.52	0.72	0.36	0.99

	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33
Q1	0.31	0.76	0.36	0.04	0.00	(0.09)	0.08	(0.54)	0.04	0.49	(0.00)	0.26
	0.30	0.00	0.23	0.90	1.00	0.77	0.79	0.06	0.90	0.09	1.00	0.39
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q2	(0.51)	0.12	(0.42)	0.14	(0.26)	0.75	0.16	0.46	0.09	(0.24)	(0.30)	0.03
	0.07	0.70	0.15	0.65	0.39	0.00	0.59	0.11	0.77	0.43	0.32	0.92
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q3	(0.29)	0.07	(0.46)	(0.36)	0.02	(0.14)	0.22	(0.38)	(0.17)	(0.51)	0.05	(0.12)
	0.33	0.81	0.11	0.23	0.94	0.64	0.47	0.20	0.58	0.07	0.88	0.70
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q4	0.03	0.34	0.25	(0.07)	0.39	(0.14)	0.21	(0.27)	0.23	0.50	(0.43)	0.18
	0.93	0.26	0.41	0.81	0.19	0.66	0.50	0.37	0.45	0.08	0.14	0.55
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q5	0.04	0.24	(0.45)	(0.50)	0.21	(0.39)	0.26	(0.27)	(0.13)	(0.23)	(0.23)	0.11
	0.89	0.43	0.12	0.08	0.50	0.19	0.39	0.38	0.67	0.45	0.44	0.71
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q6	0.23	0.06	(0.09)	0.07	(0.41)	(0.39)	0.19	(0.13)	(0.49)	0.03	0.23	(0.23)
	0.44	0.83	0.77	0.81	0.16	0.19	0.53	0.68	0.09	0.94	0.44	0.44
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q7	(0.15)	(0.49)	0.07	0.57	(0.29)	(0.18)	(0.22)	0.42	(0.51)	0.04	0.10	(0.13)
	0.62	0.09	0.81	0.04	0.33	0.55	0.48	0.15	0.07	0.90	0.75	0.68
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q8	0.33	(0.37)	0.25	0.63	(0.32)	(0.46)	(0.11)	0.64	(0.41)	0.35	(0.04)	0.24
	0.27	0.21	0.40	0.02	0.29	0.12	0.72	0.02	0.17	0.23	0.90	0.43
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q9	0.61	(0.11)	0.32	(0.00)	0.33	(0.26)	(0.10)	(0.37)	0.35	0.08	0.08	0.28
	0.03	0.71	0.28	0.99	0.27	0.40	0.75	0.21	0.23	0.80	0.81	0.36
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q10	0.42	(0.73)	(0.01)	(0.12)	0.02	(0.34)	(0.37)	0.11	(0.12)	(0.17)	0.29	(0.05)
	0.15	0.00	0.97	0.69	0.95	0.25	0.21	0.71	0.69	0.59	0.34	0.86
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q11	(0.12)	0.04	(0.36)	(0.19)	(0.34)	0.12	(0.23)	0.47	(0.33)	(0.29)	0.22	(0.22)
	0.70	0.90	0.23	0.53	0.25	0.69	0.44	0.11	0.27	0.34	0.46	0.47
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q12	(0.20)	0.72	0.10	0.04	0.15	0.17	0.31	0.00	0.34	0.18	(0.35)	0.35
	0.52	0.01	0.74	0.89	0.63	0.57	0.30	0.99	0.25	0.56	0.25	0.24
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q13	(0.15)	(0.49)	0.07	0.57	(0.29)	(0.18)	(0.22)	0.42	(0.51)	0.04	0.10	(0.13)
	0.62	0.09	0.81	0.04	0.33	0.55	0.48	0.15	0.07	0.90	0.75	0.68
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q14	0.48	0.29	0.77	0.09	(0.09)	(0.08)	(0.55)	(0.40)	0.11	0.22	0.67	0.04
	0.10	0.33	0.00	0.76	0.76	0.80	0.05	0.17	0.71	0.47	0.01	0.89
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q15	(0.03)	(0.05)	0.04	(0.04)	(0.45)	0.25	(0.65)	0.41	(0.21)	(0.19)	0.48	0.09
	0.92	0.88	0.89	0.90	0.13	0.42	0.02	0.16	0.49	0.53	0.10	0.76
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q16	0.06	0.19	(0.31)	0.43	(0.39)	(0.11)	0.24	0.37	(0.52)	0.02	(0.23)	0.01
	0.84	0.54	0.30	0.15	0.19	0.72	0.43	0.22	0.07	0.96	0.45	0.97
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q17	(0.01)	0.39	(0.02)	0.29	0.24	(0.02)	0.51	(0.00)	0.23	0.34	(0.70)	0.53
	0.98	0.18	0.95	0.34	0.44	0.95	0.07	0.99	0.46	0.26	0.01	0.06
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q18	(0.10)	0.01	0.24	0.34	(0.08)	(0.24)	(0.15)	0.25	(0.34)	0.41	(0.19)	0.28
	0.75	0.97	0.44	0.25	0.80	0.43	0.63	0.40	0.26	0.16	0.54	0.36
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q19	(0.13)	0.14	0.02	(0.31)	(0.10)	0.74	(0.08)	0.03	0.55	(0.37)	0.36	(0.36)
	0.67	0.64	0.95	0.31	0.74	0.00	0.79	0.92	0.05	0.21	0.23	0.23
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q20	(0.22)	(0.26)	(0.19)	(0.35)	0.33	(0.25)	0.31	(0.38)	0.06	(0.29)	0.08	(0.66)
	0.48	0.38	0.53	0.24	0.27	0.42	0.29	0.20	0.84	0.33	0.80	0.01
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q21	0.13	(0.42)	(0.12)	(0.36)	(0.10)	(0.41)	(0.41)	(0.14)	(0.42)	(0.37)	0.62	(0.54)
	0.68	0.15	0.71	0.23	0.74	0.16	0.16	0.64	0.15	0.21	0.02	0.06
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q22	1.00	(0.02)	0.42	0.26	(0.30)	(0.30)	(0.44)	(0.21)	(0.23)	0.23	0.53	0.07
	.	0.96	0.16	0.39	0.32	0.32	0.13	0.49	0.45	0.45	0.06	0.81
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q23	(0.02)	1.00	0.16	(0.04)	0.01	0.35	0.23	(0.26)	0.27	0.34	(0.23)	0.27
	0.96	.	0.60	0.91	0.97	0.25	0.45	0.39	0.37	0.25	0.45	0.37
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q24	0.42	0.16	1.00	0.45	0.18	(0.12)	(0.42)	(0.24)	0.26	0.55	0.31	0.10
	0.16	0.60	.	0.12	0.56	0.68	0.16	0.43	0.39	0.05	0.29	0.75
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q25	0.26	(0.04)	0.45	1.00	(0.35)	(0.04)	(0.09)	0.50	(0.31)	0.60	(0.16)	0.29
	0.39	0.91	0.12	.	0.24	0.88	0.76	0.08	0.31	0.03	0.60	0.34
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q26	(0.30)	0.01	0.18	(0.35)	1.00	(0.24)	0.24	(0.46)	0.62	(0.06)	(0.31)	(0.12)
	0.32	0.97	0.56	0.24	.	0.42	0.42	0.12	0.02	0.84	0.30	0.70
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q27	(0.30)	0.35	(0.12)	(0.04)	(0.24)	1.00	0.11	0.09	0.45	(0.13)	(0.02)	(0.04)
	0.32	0.25	0.68	0.88	0.42	.	0.73	0.77	0.12	0.66	0.94	0.89
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q28	(0.44)	0.23	(0.42)	(0.09)	0.24	0.11	1.00	0.04	0.28	0.03	(0.71)	(0.19)
	0.13	0.45	0.16	0.76	0.42	0.73	.	0.89	0.35	0.91	0.01	0.53
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q29	(0.21)	(0.26)	(0.24)	0.50	(0.46)	0.09	0.04	1.00	(0.42)	0.10	(0.27)	0.07
	0.49	0.39	0.43	0.08	0.12	0.77	0.89	.	0.15	0.74	0.37	0.82
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q30	(0.23)	0.27	0.26	(0.31)	0.62	0.45	0.28	(0.42)	1.00	(0.17)	(0.09)	(0.11)
	0.45	0.37	0.39	0.31	0.02	0.12	0.35	0.15	.	0.58	0.78	0.71
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q31	0.23	0.34	0.55	0.60	(0.06)	(0.13)	0.03	0.10	(0.17)	1.00	(0.36)	0.32
	0.45	0.25	0.05	0.03	0.84	0.66	0.91	0.74	0.58	.	0.23	0.29
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q32	0.53	(0.23)	0.31	(0.16)	(0.31)	(0.02)	(0.71)	(0.27)	(0.09)	(0.36)	1.00	(0.31)
	0.06	0.45	0.29	0.60	0.30	0.94	0.01	0.37	0.78	0.23	.	0.30
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q33	0.07	0.27	0.10	0.29	(0.12)	(0.04)	(0.19)	0.07	(0.11)	0.32	(0.31)	1.00
	0.81	0.37	0.75	0.34	0.70	0.89	0.53	0.82	0.71	0.29	0.30	.
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q34	0.36	(0.10)	0.34	0.29	(0.63)	0.09	(0.60)	0.07	(0.49)	0.25	0.59	(0.19)
	0.23	0.75	0.26	0.34	0.02	0.78	0.03	0.81	0.09	0.42	0.04	0.54
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q35	0.26	(0.21)	0.19	(0.12)	0.48	(0.31)	(0.25)	(0.11)	0.22	0.05	(0.06)	0.20
	0.40	0.48	0.53	0.69	0.10	0.30	0.42	0.72	0.47	0.88	0.85	0.51
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q36	(0.32)	(0.29)	(0.14)	(0.51)	0.14	(0.03)	0.07	(0.23)	0.25	(0.69)	0.44	(0.57)
	0.28	0.34	0.66	0.08	0.64	0.92	0.82	0.46	0.41	0.01	0.13	0.04
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q37	(0.33)	0.01	0.29	0.11	0.39	0.33	0.28	(0.30)	0.55	0.12	(0.23)	(0.10)
	0.27	0.98	0.34	0.71	0.19	0.27	0.35	0.31	0.05	0.70	0.45	0.75
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q38	0.51	(0.39)	0.43	0.35	(0.47)	(0.14)	(0.29)	0.13	(0.28)	0.31	0.48	(0.28)
	0.08	0.19	0.14	0.24	0.11	0.64	0.34	0.66	0.36	0.29	0.10	0.35
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q39	0.30	0.11	0.03	0.38	(0.54)	0.22	(0.02)	0.35	(0.23)	0.06	0.16	(0.22)
	0.32	0.72	0.92	0.20	0.06	0.47	0.95	0.24	0.46	0.85	0.60	0.48
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q40	0.35	0.41	0.32	0.51	(0.48)	(0.28)	(0.20)	0.20	(0.51)	0.55	0.04	0.48
	0.25	0.16	0.29	0.08	0.10	0.36	0.52	0.52	0.07	0.05	0.89	0.09
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q41	0.06	0.35	(0.09)	0.24	(0.07)	0.31	0.45	(0.09)	0.18	0.36	(0.56)	0.45
	0.84	0.24	0.78	0.44	0.81	0.31	0.12	0.76	0.55	0.23	0.05	0.12
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q42	(0.24)	(0.01)	(0.44)	0.17	(0.19)	0.40	0.51	0.22	(0.10)	0.24	(0.59)	0.02
	0.44	0.99	0.14	0.58	0.53	0.18	0.07	0.48	0.76	0.42	0.03	0.96
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q43	(0.20)	0.20	(0.65)	(0.13)	(0.41)	0.57	0.20	0.25	0.00	(0.47)	(0.10)	0.21
	0.51	0.51	0.02	0.68	0.16	0.04	0.51	0.41	0.99	0.10	0.75	0.50
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q44	0.19	(0.38)	(0.27)	0.36	(0.60)	0.13	(0.25)	0.76	(0.39)	(0.22)	0.11	0.17
	0.54	0.20	0.37	0.23	0.03	0.67	0.41	0.00	0.19	0.47	0.72	0.57
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q45	(0.56)	0.45	(0.07)	(0.12)	0.34	0.50	0.27	(0.06)	0.52	0.14	(0.58)	0.46
	0.05	0.13	0.83	0.69	0.26	0.08	0.37	0.85	0.07	0.65	0.04	0.11
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q46	0.41	(0.07)	0.13	(0.24)	0.19	0.17	(0.38)	(0.42)	0.35	(0.10)	0.21	0.30
	0.17	0.83	0.66	0.43	0.53	0.57	0.20	0.15	0.25	0.74	0.50	0.31
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q47	0.04	0.47	(0.21)	(0.64)	0.30	0.16	0.37	(0.53)	0.56	(0.27)	(0.10)	0.12
	0.91	0.11	0.49	0.02	0.32	0.59	0.21	0.06	0.05	0.38	0.75	0.70
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q48	(0.13)	0.31	0.25	0.16	0.25	(0.11)	0.62	(0.25)	0.24	0.58	(0.49)	0.08
	0.67	0.30	0.41	0.61	0.41	0.71	0.02	0.42	0.43	0.04	0.09	0.79
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q49	0.01	0.23	(0.30)	(0.45)	0.28	0.19	0.46	(0.48)	0.38	(0.15)	(0.27)	(0.10)
	0.96	0.45	0.31	0.12	0.35	0.53	0.12	0.10	0.21	0.62	0.37	0.74
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q50	0.48	(0.06)	0.35	0.11	0.06	(0.07)	(0.37)	(0.52)	0.04	0.27	0.14	0.42
	0.10	0.85	0.24	0.73	0.85	0.82	0.22	0.07	0.91	0.37	0.66	0.16
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q51	(0.19)	0.13	(0.31)	(0.52)	0.21	(0.30)	0.36	(0.46)	0.10	(0.29)	(0.11)	0.21
	0.54	0.68	0.30	0.07	0.50	0.32	0.23	0.11	0.73	0.34	0.73	0.50
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q52	(0.55)	0.36	(0.20)	0.11	(0.33)	0.62	0.24	0.21	0.02	(0.07)	(0.10)	(0.15)
	0.05	0.22	0.52	0.73	0.27	0.02	0.42	0.48	0.94	0.81	0.75	0.63

	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45
Q1	0.05	(0.16)	(0.23)	(0.08)	(0.08)	(0.06)	0.61	0.24	(0.17)	(0.09)	(0.62)	0.14
	0.88	0.60	0.45	0.78	0.80	0.84	0.03	0.43	0.58	0.77	0.02	0.64
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q2	(0.01)	(0.23)	(0.10)	0.16	(0.34)	0.39	(0.29)	0.28	0.47	0.63	0.40	0.45
	0.97	0.45	0.74	0.60	0.26	0.19	0.33	0.35	0.10	0.02	0.17	0.12
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q3	(0.12)	(0.46)	0.48	0.02	(0.42)	(0.14)	(0.02)	(0.11)	(0.07)	0.29	(0.30)	(0.12)
	0.70	0.11	0.09	0.95	0.15	0.66	0.94	0.71	0.82	0.34	0.32	0.70
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q4	(0.10)	0.50	(0.36)	0.19	0.01	0.12	(0.11)	0.54	0.17	(0.52)	(0.39)	0.37
	0.74	0.08	0.22	0.53	0.96	0.69	0.72	0.06	0.59	0.07	0.18	0.21
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q5	(0.35)	0.18	(0.03)	(0.29)	(0.43)	(0.02)	(0.04)	0.19	(0.02)	0.04	(0.10)	(0.06)
	0.24	0.55	0.92	0.34	0.14	0.95	0.90	0.54	0.94	0.90	0.75	0.83
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q6	0.27	(0.52)	0.32	(0.28)	0.32	0.22	0.49	(0.13)	(0.14)	(0.03)	(0.18)	(0.54)
	0.37	0.07	0.29	0.35	0.29	0.47	0.09	0.68	0.65	0.93	0.55	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q7	0.40	(0.26)	0.13	0.01	0.28	0.22	0.16	(0.30)	(0.02)	(0.11)	0.22	(0.29)
	0.17	0.39	0.66	0.96	0.35	0.46	0.61	0.32	0.95	0.73	0.47	0.34
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q8	0.09	0.18	(0.23)	(0.32)	0.51	0.22	0.45	(0.06)	(0.14)	(0.24)	0.55	(0.35)
	0.78	0.56	0.45	0.29	0.07	0.46	0.12	0.85	0.64	0.43	0.05	0.24
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q9	(0.32)	0.71	(0.26)	0.02	0.13	(0.08)	(0.16)	0.36	(0.14)	(0.22)	(0.01)	0.00
	0.29	0.01	0.39	0.95	0.67	0.79	0.59	0.23	0.64	0.46	0.98	0.99
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q10	0.04	0.62	(0.04)	(0.24)	0.43	(0.05)	(0.35)	(0.14)	(0.08)	(0.26)	0.41	(0.35)
	0.89	0.02	0.90	0.43	0.14	0.87	0.25	0.64	0.79	0.39	0.16	0.23
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q11	0.13	(0.01)	0.14	(0.76)	(0.12)	0.28	0.12	(0.51)	(0.28)	0.39	0.32	(0.05)
	0.67	0.98	0.64	0.00	0.71	0.35	0.70	0.07	0.35	0.19	0.28	0.86
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q12	(0.44)	0.10	(0.08)	(0.21)	(0.43)	0.11	0.34	0.25	(0.26)	0.26	(0.26)	0.62
	0.13	0.74	0.79	0.48	0.14	0.71	0.26	0.42	0.39	0.38	0.39	0.02
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q13	0.40	(0.26)	0.13	0.01	0.28	0.22	0.16	(0.30)	(0.02)	(0.11)	0.22	(0.29)
	0.17	0.39	0.66	0.96	0.35	0.46	0.61	0.32	0.95	0.73	0.47	0.34
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q14	0.47	(0.16)	0.15	0.05	0.36	(0.06)	0.48	(0.34)	(0.63)	(0.37)	(0.26)	(0.28)
	0.10	0.61	0.63	0.88	0.23	0.84	0.10	0.25	0.02	0.21	0.40	0.35
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q15	0.40	0.04	0.15	(0.53)	0.14	0.19	0.20	(0.50)	(0.45)	0.23	0.42	0.04
	0.17	0.89	0.64	0.07	0.65	0.53	0.51	0.08	0.12	0.46	0.15	0.90
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q16	0.08	(0.38)	(0.23)	(0.22)	(0.17)	0.54	0.35	0.18	0.23	0.30	0.34	(0.29)
	0.79	0.20	0.45	0.48	0.57	0.05	0.24	0.56	0.45	0.32	0.25	0.33
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q17	(0.59)	0.34	(0.50)	0.04	(0.36)	0.12	0.12	0.77	0.27	0.16	(0.10)	0.55
	0.03	0.25	0.08	0.89	0.22	0.70	0.70	0.00	0.37	0.60	0.74	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q18	0.28	(0.32)	(0.29)	0.29	0.07	(0.21)	0.39	(0.08)	0.11	(0.38)	0.15	(0.20)
	0.35	0.29	0.34	0.34	0.82	0.50	0.18	0.80	0.72	0.20	0.62	0.52
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q19	0.10	0.02	0.37	0.04	0.10	0.33	(0.42)	(0.09)	(0.12)	0.31	0.11	0.25
	0.74	0.95	0.21	0.90	0.76	0.27	0.15	0.76	0.69	0.31	0.71	0.40
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q20	(0.09)	(0.02)	0.60	0.06	0.05	(0.02)	(0.41)	(0.23)	(0.08)	(0.21)	(0.56)	(0.16)
	0.76	0.95	0.03	0.86	0.87	0.94	0.16	0.44	0.80	0.49	0.05	0.60
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q21	0.40	0.01	0.54	(0.47)	0.28	0.03	(0.07)	(0.73)	(0.47)	(0.22)	(0.12)	(0.56)
	0.18	0.96	0.06	0.10	0.36	0.91	0.81	0.00	0.11	0.46	0.69	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q22	0.36	0.26	(0.32)	(0.33)	0.51	0.30	0.35	0.06	(0.24)	(0.20)	0.19	(0.56)
	0.23	0.40	0.28	0.27	0.08	0.32	0.25	0.84	0.44	0.51	0.54	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q23	(0.10)	(0.21)	(0.29)	0.01	(0.39)	0.11	0.41	0.35	(0.01)	0.20	(0.38)	0.45
	0.75	0.48	0.34	0.98	0.19	0.72	0.16	0.24	0.99	0.51	0.20	0.13
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q24	0.34	0.19	(0.14)	0.29	0.43	0.03	0.32	(0.09)	(0.44)	(0.65)	(0.27)	(0.07)
	0.26	0.53	0.66	0.34	0.14	0.92	0.29	0.78	0.14	0.02	0.37	0.83
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q25	0.29	(0.12)	(0.51)	0.11	0.35	0.38	0.51	0.24	0.17	(0.13)	0.36	(0.12)
	0.34	0.69	0.08	0.71	0.24	0.20	0.08	0.44	0.58	0.68	0.23	0.69
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q26	(0.63)	0.48	0.14	0.39	(0.47)	(0.54)	(0.48)	(0.07)	(0.19)	(0.41)	(0.60)	0.34
	0.02	0.10	0.64	0.19	0.11	0.06	0.10	0.81	0.53	0.16	0.03	0.26
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q27	0.09	(0.31)	(0.03)	0.33	(0.14)	0.22	(0.28)	0.31	0.40	0.57	0.13	0.50
	0.78	0.30	0.92	0.27	0.64	0.47	0.36	0.31	0.18	0.04	0.67	0.08
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q28	(0.60)	(0.25)	0.07	0.28	(0.29)	(0.02)	(0.20)	0.45	0.51	0.20	(0.25)	0.27
	0.03	0.42	0.82	0.35	0.34	0.95	0.52	0.12	0.07	0.51	0.41	0.37
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q29	0.07	(0.11)	(0.23)	(0.30)	0.13	0.35	0.20	(0.09)	0.22	0.25	0.76	(0.06)
	0.81	0.72	0.46	0.31	0.66	0.24	0.52	0.76	0.48	0.41	0.00	0.85
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q30	(0.49)	0.22	0.25	0.55	(0.28)	(0.23)	(0.51)	0.18	(0.10)	0.00	(0.39)	0.52
	0.09	0.47	0.41	0.05	0.36	0.46	0.07	0.55	0.76	0.99	0.19	0.07
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q31	0.25	0.05	(0.69)	0.12	0.31	0.06	0.55	0.36	0.24	(0.47)	(0.22)	0.14
	0.42	0.88	0.01	0.70	0.29	0.85	0.05	0.23	0.42	0.10	0.47	0.65
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q32	0.59	(0.06)	0.44	(0.23)	0.48	0.16	0.04	(0.56)	(0.59)	(0.10)	0.11	(0.58)
	0.04	0.85	0.13	0.45	0.10	0.60	0.89	0.05	0.03	0.75	0.72	0.04
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q33	(0.19)	0.20	(0.57)	(0.10)	(0.28)	(0.22)	0.48	0.45	0.02	0.21	0.17	0.46
	0.54	0.51	0.04	0.75	0.35	0.48	0.09	0.12	0.96	0.50	0.57	0.11
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q34	1.00	(0.31)	(0.03)	(0.05)	0.68	0.44	0.28	(0.21)	(0.03)	(0.27)	0.16	(0.47)
	.	0.30	0.91	0.88	0.01	0.13	0.35	0.50	0.93	0.36	0.60	0.11
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q35	(0.31)	1.00	(0.24)	(0.24)	(0.03)	(0.03)	(0.31)	0.09	(0.26)	(0.32)	(0.01)	0.23
	0.30	.	0.43	0.43	0.91	0.91	0.30	0.76	0.39	0.29	0.98	0.46
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q36	(0.03)	(0.24)	1.00	0.08	0.07	(0.09)	(0.37)	(0.55)	(0.46)	(0.01)	(0.21)	(0.23)
	0.91	0.43	.	0.80	0.81	0.78	0.22	0.05	0.12	0.96	0.50	0.46
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q37	(0.05)	(0.24)	0.08	1.00	(0.02)	(0.23)	(0.39)	0.31	0.37	(0.25)	(0.34)	0.24
	0.88	0.43	0.80	.	0.94	0.45	0.19	0.30	0.21	0.41	0.26	0.42
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q38	0.68	(0.03)	0.07	(0.02)	1.00	0.41	0.15	(0.08)	(0.03)	(0.46)	0.18	(0.55)
	0.01	0.91	0.81	0.94	.	0.17	0.63	0.79	0.91	0.11	0.55	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q39	0.44	(0.03)	(0.09)	(0.23)	0.41	1.00	0.07	0.25	0.10	0.10	0.41	(0.22)
	0.13	0.91	0.78	0.45	0.17	.	0.81	0.41	0.75	0.74	0.16	0.46
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q40	0.28	(0.31)	(0.37)	(0.39)	0.15	0.07	1.00	(0.03)	(0.24)	(0.01)	0.08	(0.17)
	0.35	0.30	0.22	0.19	0.63	0.81	.	0.92	0.43	0.97	0.80	0.57
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q41	(0.21)	0.09	(0.55)	0.31	(0.08)	0.25	(0.03)	1.00	0.65	0.20	(0.02)	0.47
	0.50	0.76	0.05	0.30	0.79	0.41	0.92	.	0.02	0.50	0.96	0.10
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q42	(0.03)	(0.26)	(0.46)	0.37	(0.03)	0.10	(0.24)	0.65	1.00	0.26	0.13	0.22
	0.93	0.39	0.12	0.21	0.91	0.75	0.43	0.02	.	0.38	0.67	0.47
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q43	(0.27)	(0.32)	(0.01)	(0.25)	(0.46)	0.10	(0.01)	0.20	0.26	1.00	0.42	0.28
	0.36	0.29	0.96	0.41	0.11	0.74	0.97	0.50	0.38	.	0.15	0.36
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q44	0.16	(0.01)	(0.21)	(0.34)	0.18	0.41	0.08	(0.02)	0.13	0.42	1.00	(0.28)
	0.60	0.98	0.50	0.26	0.55	0.16	0.80	0.96	0.67	0.15	.	0.35
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q45	(0.47)	0.23	(0.23)	0.24	(0.55)	(0.22)	(0.17)	0.47	0.22	0.28	(0.28)	1.00
	0.11	0.46	0.46	0.42	0.05	0.46	0.57	0.10	0.47	0.36	0.35	.
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q46	(0.08)	0.69	(0.28)	0.01	(0.02)	(0.06)	(0.38)	0.34	(0.01)	0.03	0.02	0.27
	0.80	0.01	0.36	0.96	0.96	0.83	0.20	0.25	0.97	0.93	0.95	0.37
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q47	(0.53)	0.12	0.12	0.05	(0.39)	(0.23)	(0.20)	0.34	(0.03)	0.25	(0.28)	0.29
	0.06	0.70	0.71	0.87	0.19	0.46	0.51	0.25	0.93	0.41	0.35	0.33
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q48	(0.25)	(0.25)	(0.11)	0.46	0.09	(0.31)	0.23	0.39	0.29	(0.31)	(0.57)	0.21
	0.42	0.41	0.73	0.12	0.77	0.30	0.44	0.18	0.34	0.30	0.04	0.49
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q49	(0.28)	0.15	(0.08)	0.33	(0.22)	0.09	(0.52)	0.62	0.46	0.06	(0.23)	0.18
	0.36	0.62	0.79	0.26	0.47	0.77	0.07	0.02	0.11	0.86	0.44	0.55
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q50	0.24	0.28	(0.42)	0.35	0.19	(0.15)	(0.04)	0.46	0.18	(0.29)	(0.13)	0.01
	0.43	0.35	0.15	0.24	0.53	0.64	0.90	0.12	0.55	0.34	0.68	0.98
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q51	(0.49)	(0.18)	0.39	(0.04)	(0.34)	(0.56)	0.11	0.02	(0.18)	0.16	(0.41)	0.10
	0.09	0.56	0.18	0.89	0.26	0.05	0.73	0.96	0.55	0.59	0.16	0.75
	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q52	0.17	(0.84)	0.20	0.26	(0.22)	0.07	0.15	(0.06)	0.25	0.48	(0.03)	0.21
	0.58	0.00	0.52	0.39	0.46	0.81	0.62	0.84	0.40	0.10	0.92	0.49

	Q46	Q47	Q48	Q49	Q50	Q51	Q52
Q1	(0.04)	0.32	0.51	0.06	0.19	0.35	0.09
	0.91	0.29	0.08	0.84	0.53	0.24	0.76
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q2	(0.05)	(0.17)	(0.36)	0.08	(0.26)	(0.42)	0.60
	0.88	0.58	0.22	0.79	0.38	0.16	0.03
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q3	(0.32)	0.15	(0.02)	0.16	(0.13)	0.60	0.35
	0.28	0.62	0.94	0.61	0.68	0.03	0.25
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q4	0.31	0.31	0.35	0.56	0.36	(0.07)	(0.44)
	0.31	0.30	0.24	0.05	0.23	0.82	0.13
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q5	0.07	0.59	(0.05)	0.60	0.04	0.46	(0.36)
	0.82	0.03	0.86	0.03	0.89	0.12	0.23
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q6	(0.55)	(0.08)	0.28	(0.15)	(0.21)	0.42	0.18
	0.05	0.79	0.35	0.63	0.50	0.16	0.56
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q7	(0.46)	(0.91)	(0.17)	(0.63)	(0.18)	(0.32)	0.28
	0.12	0.00	0.57	0.02	0.56	0.29	0.36
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q8	(0.22)	(0.41)	0.06	(0.50)	(0.12)	(0.20)	(0.35)
	0.47	0.17	0.84	0.08	0.70	0.52	0.24
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q9	0.75	0.42	0.07	0.37	0.59	0.07	(0.82)
	0.00	0.16	0.82	0.22	0.03	0.82	0.00
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q10	0.53	(0.05)	(0.35)	0.04	0.31	(0.18)	(0.78)
	0.06	0.87	0.24	0.88	0.30	0.57	0.00
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q11	(0.22)	(0.22)	(0.60)	(0.43)	(0.68)	(0.22)	0.23
	0.47	0.48	0.03	0.14	0.01	0.46	0.45
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q12	(0.10)	0.33	0.24	(0.07)	(0.37)	0.22	0.20
	0.74	0.27	0.44	0.83	0.21	0.47	0.51
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q13	(0.46)	(0.91)	(0.17)	(0.63)	(0.18)	(0.32)	0.28
	0.12	0.00	0.57	0.02	0.56	0.29	0.36
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q14	0.03	0.03	0.09	(0.32)	0.24	0.03	0.01
	0.92	0.92	0.78	0.28	0.42	0.93	0.97
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q15	0.03	(0.29)	(0.63)	(0.60)	(0.32)	(0.30)	0.18
	0.93	0.33	0.02	0.03	0.29	0.32	0.56
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q16	(0.48)	(0.25)	(0.14)	0.01	(0.25)	(0.15)	0.29
	0.10	0.41	0.64	0.98	0.41	0.61	0.34
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q17	0.19	0.29	0.38	0.33	0.13	0.14	(0.20)
	0.54	0.33	0.20	0.27	0.66	0.65	0.52
	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q18	(0.38)	(0.27)	0.20	(0.19)	0.17	(0.10)	0.11
	0.20	0.37	0.51	0.54	0.58	0.74	0.72
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q19	0.24	0.23	(0.34)	0.09	(0.28)	(0.30)	0.27
	0.43	0.45	0.26	0.77	0.35	0.33	0.36
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q20	(0.21)	(0.08)	0.14	0.12	(0.24)	0.26	0.00
	0.50	0.81	0.65	0.70	0.43	0.39	0.99
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q21	(0.14)	(0.32)	(0.43)	(0.31)	(0.22)	0.05	(0.13)
	0.64	0.29	0.15	0.30	0.46	0.87	0.68
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q22	0.41	0.04	(0.13)	0.01	0.48	(0.19)	(0.55)
	0.17	0.91	0.67	0.96	0.10	0.54	0.05
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q23	(0.07)	0.47	0.31	0.23	(0.06)	0.13	0.36
	0.83	0.11	0.30	0.45	0.85	0.68	0.22
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q24	0.13	(0.21)	0.25	(0.30)	0.35	(0.31)	(0.20)
	0.66	0.49	0.41	0.31	0.24	0.30	0.52
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q25	(0.24)	(0.64)	0.16	(0.45)	0.11	(0.52)	0.11
	0.43	0.02	0.61	0.12	0.73	0.07	0.73
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q26	0.19	0.30	0.25	0.28	0.06	0.21	(0.33)
	0.53	0.32	0.41	0.35	0.85	0.50	0.27
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q27	0.17	0.16	(0.11)	0.19	(0.07)	(0.30)	0.62
	0.57	0.59	0.71	0.53	0.82	0.32	0.02
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q28	(0.38)	0.37	0.62	0.46	(0.37)	0.36	0.24
	0.20	0.21	0.02	0.12	0.22	0.23	0.42
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q29	(0.42)	(0.53)	(0.25)	(0.48)	(0.52)	(0.46)	0.21
	0.15	0.06	0.42	0.10	0.07	0.11	0.48
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q30	0.35	0.56	0.24	0.38	0.04	0.10	0.02
	0.25	0.05	0.43	0.21	0.91	0.73	0.94
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q31	(0.10)	(0.27)	0.58	(0.15)	0.27	(0.29)	(0.07)
	0.74	0.38	0.04	0.62	0.37	0.34	0.81
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q32	0.21	(0.10)	(0.49)	(0.27)	0.14	(0.11)	(0.10)
	0.50	0.75	0.09	0.37	0.66	0.73	0.75
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q33	0.30	0.12	0.08	(0.10)	0.42	0.21	(0.15)
	0.31	0.70	0.79	0.74	0.16	0.50	0.63
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q34	(0.08)	(0.53)	(0.25)	(0.28)	0.24	(0.49)	0.17
	0.80	0.06	0.42	0.36	0.43	0.09	0.58
	13.00	13.00	13.00	13.00	13.00	13.00	13.00

Q35	0.69	0.12	(0.25)	0.15	0.28	(0.18)	(0.84)
	0.01	0.70	0.41	0.62	0.35	0.56	0.00
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q36	(0.28)	0.12	(0.11)	(0.08)	(0.42)	0.39	0.20
	0.36	0.71	0.73	0.79	0.15	0.18	0.52
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q37	0.01	0.05	0.46	0.33	0.35	(0.04)	0.26
	0.96	0.87	0.12	0.26	0.24	0.89	0.39
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q38	(0.02)	(0.39)	0.09	(0.22)	0.19	(0.34)	(0.22)
	0.96	0.19	0.77	0.47	0.53	0.26	0.46
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q39	(0.06)	(0.23)	(0.31)	0.09	(0.15)	(0.56)	0.07
	0.83	0.46	0.30	0.77	0.64	0.05	0.81
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q40	(0.38)	(0.20)	0.23	(0.52)	(0.04)	0.11	0.15
	0.20	0.51	0.44	0.07	0.90	0.73	0.62
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q41	0.34	0.34	0.39	0.62	0.46	0.02	(0.06)
	0.25	0.25	0.18	0.02	0.12	0.96	0.84
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q42	(0.01)	(0.03)	0.29	0.46	0.18	(0.18)	0.25
	0.97	0.93	0.34	0.11	0.55	0.55	0.40
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q43	0.03	0.25	(0.31)	0.06	(0.29)	0.16	0.48
	0.93	0.41	0.30	0.86	0.34	0.59	0.10
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q44	0.02	(0.28)	(0.57)	(0.23)	(0.13)	(0.41)	(0.03)
	0.95	0.35	0.04	0.44	0.68	0.16	0.92
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q45	0.27	0.29	0.21	0.18	0.01	0.10	0.21
	0.37	0.33	0.49	0.55	0.98	0.75	0.49
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q46	1.00	0.36	(0.30)	0.41	0.69	(0.12)	(0.58)
	.	0.23	0.31	0.16	0.01	0.70	0.04
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q47	0.36	1.00	0.22	0.69	0.12	0.58	(0.17)
	0.23	.	0.47	0.01	0.70	0.04	0.58
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q48	(0.30)	0.22	1.00	0.16	0.08	0.41	0.11
	0.31	0.47	.	0.60	0.79	0.17	0.73
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q49	0.41	0.69	0.16	1.00	0.37	0.18	(0.22)
	0.16	0.01	0.60	.	0.21	0.56	0.47
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q50	0.69	0.12	0.08	0.37	1.00	(0.04)	(0.45)
	0.01	0.70	0.79	0.21	.	0.91	0.12
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q51	(0.12)	0.58	0.41	0.18	(0.04)	1.00	(0.02)
	0.70	0.04	0.17	0.56	0.91	.	0.94
	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Q52	(0.58)	(0.17)	0.11	(0.22)	(0.45)	(0.02)	1.00
	0.04	0.58	0.73	0.47	0.12	0.94	.

APPENDIX D

PLAN OF STUDY

Department and Course No.	Course Title	Year Planned	Credit
Cornell University	Various	1976	26
CE 7994	Dissertation Research	Summer 98	3
CE 5044	Construction Research Presentation	Fall 98	3
CE 5024	Construction Administration And Claims Resolution	Fall 98	3
CE 6014	Project and Company Management	Fall 98	3
MGT 5314	Organizational Behavior	Fall 98	3
STAT 5665	Statistics for Behavioral Science	Fall 98	3
CE 7994	Dissertation Research	Spring 99	12
MGT 5335	Management of Change	Spring 99	Audit
CE 7994	Dissertation Research	Summer I 99	6
CE 7994	Dissertation Research	Summer II 99	6
CE 7994	Dissertation Research	Fall 99	12
CE 7994	Dissertation Research	Spring 00	12
CE 7994	Dissertation Research	Summer I 00	3
CE 7994	Dissertation Research	Summer II 00	3
CE 7994	Dissertation Research	Fall 00	3
		Total	101

APPENDIX E

Resume

Paul G. Carr, P.E.
25425 Indian Point ~ Chaumont, New York 13622 ~ USA
Home Phone 315-649-5232 ~ Email pcarr@vt.edu

EDUCATION

Doctor of Philosophy (June 1998 – December 2000 (Expected)**)**
Virginia Polytechnic Institute, Blacksburg, Virginia
Civil Engineering - Construction Engineering and Management
QCA = 4.0/4.0

Master of Engineering (May 1976)
Cornell University, Ithaca, New York
Civil Engineering – Systems Engineering

Bachelor of Engineering (June 1975)
Rochester Institute of Technology, Rochester, New York
Civil Engineering - Engineering Technology
QCA= 3.87/4.0
Graduated with Highest Honors

Continuing Education
Legal Aspects of Architecture, Engineering and Construction
New York Construction Law, Federal Publications
Richardson School of Construction Estimating, Richardson Estimating
Planning and Scheduling with Primavera, Commint Technical Services
Myers-Briggs Type Indicator Psychological Administrator and Interrupter

EMPLOYMENT and PROFESSIONAL DUTIES

1998-Present ***Ph.D. Student***
CE 4014 Cost Engineering - Instructor
Virginia Polytechnic Institute (VirginiaTech)

2000-Present ***Associate Professor/ Visiting Lecturer***
CEE 591/592 Engineering Management Project
Cornell University

1998- Present ***Management Consultant***
The Bernier - Carr Group of Companies

1985-1998 ***Chairman and Chief Executive Officer***
Bernier - Carr and Associates, P.C. Engineers - Architects - Surveyors

1981-1985 ***General Partner***
Bernier, Peck, Gozalkowski and Carr - Engineers and Surveyors

1980-1981 ***Principal and Sole Proprietor***
Paul G. Carr, P.E. Consulting Engineer

1978-1980 ***Project Engineer***
Robert E. Witt, P.E. Engineering Consultant

1977-1978 ***Assistant Project Engineer***
Stearns and Wheler Consulting Engineers and Scientists

1976-1977 ***Project Engineer and Vice President of Corporate Planning***
Kelly Construction Company

1975 (Summer) ***Project Engineer and Assistant Superintendent***
Vincent J. Fasano General Construction Company

1973 - 1975 (Three-3 Month Co-op Terms) ***Engineering Technician***
New York State Department of Environmental Conservation

1970-1973 (Five - 3 Month Terms) ***Assistant Regional Quality Control Engineer***
The General Crushed Stone Company

PROJECTS

The major projects that define the scope of my career comprise a number of municipal and institutional building programs. The primary focus of my Professional Engineering practice has been in the planning, design and construction management of approximately $400,000,000 in primary and secondary schools, water treatment and distribution works, sewage collection and treatment programs, bridges, municipal offices and libraries.

HONORS & PROFESSIONAL AFFILIATIONS

- Member - National Society of Professional Engineers
- Member - American Consulting Engineers Council
- Member - American Society of Civil Engineers
- Member – The Cornell Society of Engineers
- Phi Kappa Phi - National Scientific Honor Society
- Chi Epsilon - National Civil Engineering Honor Society
- Associated General Contractors (AGC) Scholarship Recipient
- Northern New York Builders Exchange Scholarship Recipient
- Environmental Protection Agency Scholar - Cornell University
- Past President and 1989 Construction Man of the Year NNY Builders Exchange
- Member Representative - American Arbitration Association
- Pilot Proficiency Award Program - Phase III - Federal Aviation Administration

INTERESTS & ACTIVITIES

Licensed Helicopter Pilot
Licensed Airplane Pilot - Single Engine – Multi-Engine - Instrument Ratings
International Air Race Competition
Sport Fishing
Alpine Skiing
Scuba Diving