

ABSTRACT

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The most recent attempt in developing a comprehensive classification system for occupations is the Occupational Information Network (O*NET). The O*NET uses a content model that includes descriptor domains such as, knowledges, skills and generalized work activities which allow jobs to be described in more general rather than occupation-specific terms.

The major purpose of this study was to explore the factor structures underlying the O*NET descriptor domains, specifically knowledges, skills and generalized work activities. The data used for this study were ratings of 1,100 occupations on the aforementioned descriptor domains. In addition, each of the descriptor domains was rated by subject matter experts on an abstract-concrete scale. Based on those ratings, each descriptor was then classified as either “abstract” or “concrete.” Once these classifications were made, the ratings on the 1,100 occupations were factor analyzed within the abstract and concrete categories. The research sought to identify which scale, Level or Importance, produced the most stable and differentiated factor structure.

Principal component analyses and principal axes analyses were applied to these data sets. The stability of the factors was estimated by coefficients of congruence.

The results indicate that the Level scales accounted for more variance, whereas, the Importance scales yielded more differentiated factor structures. There were no substantial differences in factor stability for either scale.

Factor Structures of the O*NET Occupational Descriptors

by

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BIOGRAPHY

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INTRODUCTION

An understanding of the world of work is essential in today's dynamic work environment. Human work is best understood in terms of the activities performed and the human attributes required. Nomothetic job descriptors (NJDs) are general descriptors that help to organize information about the world of work in terms of common dimensions rather than unique characteristics. NJDs are helpful in describing and comparing occupations. The two basic kinds of descriptors used in occupational analysis are generic activity statements and human attribute-requirement statements (Cunningham, 1996). The most recent attempt in the development of a broad job classification system, the Occupational Information Network (O*NET), uses both of these descriptors. More specifically, the O*NET content model contains information regarding knowledge, skills, abilities, and generalized work activities about occupations in today's labor market. For each of these domains, the O*NET has assessed the Level required and the Importance of each for a number of occupations.

Nomothetic job descriptors can be linked to human attributes, such as abilities, using the job component approach. More explicitly, the job component approach asserts that once ability requirements have been determined for a set of job components, then ability-requirement estimates can be derived for any job that has been analyzed on those components. In accordance with this approach, it is logical to conduct analyses to try to predict ability ratings from the knowledge, skills and generalized work activity components. If the O*NET ability ratings can be captured by ratings of the other O*NET descriptors, abilities would not have to be directly assessed for jobs. Consequently, this would reduce the rating load for incumbents and the potential difficulty associated with rating abstract ability requirements.

The objective of this study was to examine the underlying factor structure of the O*NET descriptor domains: knowledge, skills and generalized work activities. More specifically, the research sought to identify which scale, Level or Importance, produced the most meaningful and

stable factor structures. Each descriptor domain was analyzed individually. In addition, each of the O*NET descriptors were classified as either “abstract” or “concrete” and factor analyses were carried out within each of these two categories. The most stable and differentiated factors were retained and will be used as “job components” in subsequent efforts to policy capture ability requirements and numerically classify jobs (Levine, 2002; Wilson, 2002).

LITERATURE REVIEW

As the world of work continues to change, it is imperative that the framework with which we think about, analyze, and structure occupations be adaptable to the change. Cunningham (1996) suggests the use of generic job descriptors as the basic building blocks for a classification system. Generic job descriptors allow the description of occupations in terms of common dimensions rather than unique characteristics. This type of approach is known as a nomothetic approach. Conversely, an approach that emphasizes the unique characteristics of tasks and occupations is known as an idiographic one. Task and job descriptions could be considered idiographic whereas numerical profiles on a job analysis instrument could be considered nomothetic.

“General nomothetic job descriptors are useful in describing, comparing, and grouping a broad spectrum of jobs” (Cunningham, Powell, Wimpee, Wilson & Ballentine, 1996, p. 219). “The more generic the descriptor, the greater its range of applicability in nomothetic analysis” (Cunningham, 1996, p. 248). Generic descriptors, more specifically worker-oriented descriptors, may be more enduring than tasks in the face of technological change. This could potentially help to analyze occupations in today’s labor market (Cunningham, 1996). The establishment of a comprehensive system for describing occupations would allow cross-occupation comparisons, such that workers would be able to identify occupations that require their skill set and match their interests.

Over the years there have been many approaches and instruments devised to gain more information about jobs and their requirements. One of the more renowned attempts at providing a framework for describing the labor market is the Dictionary of Occupational Titles (DOT). The DOT is based on an idiographic mode of describing jobs. The DOT has been edited and revised several times since its first publication in 1939. The primary purpose of the revised efforts and methods was to gain more information (i.e. work performed, job content and skill level requirements) for the development of a more extensive and detailed information system. Despite its revisions, the DOT has three main weaknesses. The DOT is based on job analysts' descriptions of job tasks defined in different ways at different levels of generality. For the most part, the information in the DOT is job-specific which makes uniform organization and cross-job comparisons difficult. Level of job demands and required vocational preparation can not be compared. Likewise, the DOT is based on the *tasks* workers perform on their jobs instead of on information surrounding interests, knowledges, skills and abilities. In addition to the aforementioned shortcomings, the time and expense involved in updating the DOT's descriptive information is extensive. This is evident in the considerable amount of time that is invested and required to analyzing tasks (Dunnette, 1999).

The most recent attempt in the development of a broad job classification system that seeks to compensate for the DOT's weaknesses is the Occupational Information Network (O*NET) by Peterson, Mumford, Borman, Jeanneret, & Fleishman (1995). The O*NET is comprised of occupational information that allows occupations to be described in more general terms instead of occupation-specific terms. In this system, cross-occupation descriptors, such as the attributes of the occupation and the worker, can be compared. The content model of the O*NET combines cross-occupation descriptors from the following areas: worker requirements, worker characteristics, occupation characteristics, occupation-specific requirements, occupation requirements, and experience requirements. By integrating these content areas, the major attributes

related to work that are of interest to people are captured in one system (Mumford & Peterson, 1995). Unlike the DOT, the O*NET content model uses a set of cross-occupation variables to define and describe occupations in terms of the similarities and differences they display on cross-occupation descriptors (i.e. skills and GWAs) instead of viewing occupations as unique entities.

The two basic kinds of descriptors that have been used most often in nomothetic job analysis are generic activity statements and human attribute-requirement statements (Cunningham, 1996). These descriptors are used in the O*NET model. Generalized Work Activities (GWAs) are considered generic activity statements whereas, knowledge (K), and skills (S) are considered human attribute-requirement statements as identified by Cunningham (1996).

Synthetic Validity and the Job Component Approach

Nomothetic job descriptors (NJDs) are not only helpful in describing, comparing, and grouping a broad spectrum of jobs, they are potentially linkable to measurable human attributes, such as abilities and skills, work-related interests and needs (Cunningham, Powell, Wimpee, Wilson, & Ballentine, 1996). The method of linking NJDs to human attributes is known as the “job component” approach (McCormick, 1979). This approach involves determining which components are part of a job and which human attributes are relevant to those components. With this information, the attribute requirements for the job may be estimated. For example, if explosive strength (attribute) is required for heavy lifting (job component) and heavy lifting is required to be a firefighter (job) then explosive strength is hypothesized to be required for the job, firefighter (Powell, 1995).

The job component approach has its roots in the “synthetic validity” strategy (Jeanneret, 1992). Lawshe (1952) proposed the concept of synthetic validity as a new kind of predictive validity. It originated from the industrial engineering concept of predetermined time standards (PTS). PTS are times established for basic human motions that are used to build up the time for a job at a defined level of performance without direct observation and measurement. Put another

way, times are established for each motion and then used to estimate a standard time for a whole operation without directly measuring that operation.

Lawshe applied this concept of predetermined times and the term “synthetic validity” to the validation of tests. More specifically, several tests with pre-established validities for predicting job element performance could be ‘synthesized’ to establish the overall synthetic validity of the test battery for a job consisting of those elements. Therefore, synthetic validity is not a true type of validity but a logical process of inferring test-battery validity from predetermined validities of the tests for basic work components. Balma (1959) evolved the definition to emphasize the difference between synthetic validity and generalized validity and to incorporate the concept of job element. His definition of synthetic validity was used to denote the inferring of validity in a specific situation by analyzing jobs into their components, determining test validity for these components, and combining the validities into a whole. Generalized validity, on the other hand, involves global appraisals of job similarity.

McCormick stressed the need for job analysis in establishing synthetic validity. Since establishing synthetic validity requires the identification of common job elements or characteristics, he argued that job analysis was a necessary component. His emphasis on job analysis led him to coin the term “job component validity” (McCormick, DeNisi, & Shaw, 1979). Currently, job component validity is referred to as the methodological approach to establishing synthetic validity. There are two underlying hypotheses of the job component strategy: 1) when various jobs have a given component in common the attributes for fulfilling the requirement imposed by that component would be the same across various jobs and, 2) the validity of a predictor for a job requirement defined by a job component is reasonably consistent across jobs. When viewed using these hypotheses, the difference between job component validity and validity generalization is not clear (Jeanneret, 1992).

There are two basic ways of establishing attribute-requirements ratings for job components. One of the most frequently used methods is the use of expert raters. Using appropriate scales, the raters determine how relevant the attributes are to the job elements. A second method that can be used to derive requirement ratings for job components is by policy-capturing. Policy-capturing involves the use of regression analyses in which jobs' component scores are used to predict some external measure of the jobs' requirements for a particular attribute. The obtained regression coefficients are then used as the components' attribute weights (Cunningham, Powell, Wimpee, Wilson, & Ballentine, 1996). Previous research has utilized the policy capturing approach to derive ability requirements. Cunningham, Boese, Neeb, and Pass (1983) and McCormick, Jeanneret, and Mecham (1972) used test validity coefficients for jobs as their criterion in policy capturing ability requirements.

From the preceding review, it is clear that progress is being made in the world of work towards developing a comprehensive classification system for describing and comparing occupations. The content model of the O*NET combines cross-occupation descriptors allowing occupations to be described in more general rather than occupation-specific terms. This study explored the underlying factor structures of the O*NET descriptor domains (K,S, GWAs) to identify which scale, Level or Importance, produced the most stable and differentiated factor structures. In addition, these domains were classified into an "abstract" or "concrete" category and the resultant factor structures were examined. In accordance with the job component approach outlined previously, these factors will be used in subsequent research by Jason Wilson (2002) to policy capture ability requirements.

Considering the data for this research study were obtained for the O*NET project, each variable in terms of how they are defined are described below.

METHODS AND INSTRUMENTS

Sample

The O*NET data sample was composed of knowledge, skill, and generalized work activity ratings for occupational units as developed for the O*NET project. An occupational unit (OU) is an identification code for an occupation. It is an intermediary code between the Occupational Employment Statistics (OES) categories and the DOT classification codes. Over 12,000 DOT 9-digit occupations were numerically clustered with OES 5-digit category groups based on selected USES descriptor profiles. The resultant clusters were evaluated and revised by professional job analysts (Drewes, 1995; Nottingham & Golec, 1995 as cited in Wadden, 1998). This procedure produced over 1,100 OUs that were rated on O*NET descriptors.

OU Ratings

The 1,100 OUs were rated on Level by indicating on a 7-point scale with a NR option (not relevant for performance in this job). The scale consisted of task benchmarks, one high-level and one low-level description. If the descriptor was considered relevant, then the rater specified Importance according to a 5-point scale (1=not important and 5=extremely important). The data set for the proposed study will be the Level and Importance ratings.

The raters were employees of the Occupational Field Center and graduate students in Industrial/Organizational Psychology. Raters were familiar with occupational classification as indicated by education and/or work experience and were required to participate in a comprehensive training session. Raters were trained to rate knowledge, skills, and generalized work activities on level and importance using behaviorally anchored rating scales. In addition, the training session was comprised of information about the program, practice trials for rating OUs and training to avoid common rating errors (Wadden, 1998).

Abstract and Concrete Ratings

Knowledges, skills, GWAs, and abilities were rated on their levels of abstractness and concreteness using a 6-point scale (where 1=very abstract, 2=abstract, 3=somewhat abstract, 4=somewhat concrete, 5=concrete and 6=very concrete). The instrument consisted of a total of 190 dimensions and their descriptions. The instrument with rating instructions was given to 17 raters who were graduate students in Industrial/Organizational Psychology. The instructions raters received and the Abstract-Concrete instrument is listed in Appendix A.

O*NET Variables

Generalized Work Activities

The term ‘generalized work activity’ (GWA) originates from work by Outerbridge (as cited in Cunningham, 1996) who first identified ‘generalized work behaviors’ (GWBs). GWAs and GWBs are now grouped under the heading GWA. A general work activity should be broad in scope having applicability to a wide range of occupations, based on job-analytic research and characteristic of the underlying structure of work. Based on these three criteria, Jeanneret and Borman (1995) define a GWA as “a compilation of similar job activities and/or behaviors that underlie the accomplishment of major work functions” (p.3). An example of a GWA is *getting the information needed to do the job*.

As can be seen from the definitions, GWAs describe jobs in terms of broad classes of behaviors that occur across most occupations. GWAs do not include job specific content, such as individual job tasks, which lack the generality needed to formulate a capable set of job descriptors (Cunningham, 1996). Consequently, GWAs are crucial components needed to develop a comprehensive framework for describing the similarities and differences between jobs (Jeanneret, Borman, Kubisiak, & Hanson, 1999).

Cunningham (1996) proposes that GWA statements vary in degrees of specificity. Foundation work activities (FWAs) are the most general level. These are free of technological

content and are also referred to as “worker-oriented” activities. Using mathematics, working with hands and reading are all examples of FWAs. The second level of GWAs is termed intermediate work activities (IWAs). They possess more technological content than foundation work activities and do not cross as many occupations. Examples of intermediate work activities include repairing and setting up machinery, using medical/health information, and supervising others. The most specific level of generalized work activities is area work activities. These work activities are technologically or job-oriented and applicable within a narrow, specific group of occupations. Health care area work activities consist of examining patients, evaluating diagnostic tests, giving medications, and sterilizing instruments. The boundaries among the different levels of generalized work activities are not obvious. This is evident with intermediate work activities and area work activities as they are both technologically oriented which makes the distinction between these two somewhat unclear (Cunningham, 1996).

Knowledge

Knowledge impact person-job matching, job training and retraining, career counseling, vocational interests, and creation of job families or clusters. A knowledge is defined as “a collection of discrete but related and original facts, information and principles about a particular domain” (Fleishman, Costanza, Wetrogan, Uhlman & Marshall-Mies, 1995, p.71). Knowledges are acquired through formal education, training or through specific experiences.

Job-relevant knowledges are those facts and structures necessary for successful job performance. Identifying and clarifying which knowledges are most job-relevant and their appropriate level of specificity is part of the challenge in defining job-relevant knowledges. Some knowledges are considered to be more general than others when they are more important to successful performance in a greater variety of jobs in the economy. Other knowledges are more narrow and specific to a job or a limited set of jobs (Costanza, Fleishman, Marshall-Mies, 1999).

Prior to the development of the knowledge taxonomy for the O*NET, there was no comprehensive listing of knowledges to use as a foundation for creating a knowledge requirement inventory. This was due in part to the fact that much of the cognitive, vocational, training and job analysis literature focused on the structure and acquisition of knowledges rather than on the definitions of knowledge content required in jobs. The work-oriented knowledge taxonomy was initially developed by analyzing job descriptions and looking for tasks and behaviors that were representative of underlying knowledges (Fleishman et al., 1995). The Knowledge Requirements Taxonomy and measurement system was based on Fleishman's Ability Requirements approach (Fleishman, 1975). Fleishman's scales approach, used to determine ability requirements, was adapted for the development of scales for the knowledges in the knowledge taxonomy. The knowledge rating scales were refined to ensure the comprehensiveness of the taxonomy to cover all knowledge domains required by jobs, to standardize the level of specificity of the knowledges, and to reduce the rating demand on incumbents (Fleishman et al., 1995).

The result was a set of 33 knowledges with a simple structure overlapping as little as possible with other knowledges (Fleishman et al., 1995). An example of a knowledge is *mechanical knowledge* which is the knowledge of how basic mechanical equipment works excluding knowledge of hand tools or common mechanical or electrical tools and their uses (Fleishman et al., 1995).

In addition to the 33 knowledges, 214 specialty areas were created. These specialty areas assist in gathering information on knowledges that apply to an incumbent's job. The specialty data allow the knowledges to be connected to other occupational and educational databases. The architecture of the knowledge scales permits a complete and accurate description and understanding of the world of work at both a cross job and job-specific level. Using the knowledge scales, in conjunction with other job descriptors in the O*NET, will assist in describing and understanding the broad spectrum of work more completely (Fleishman et al., 1995).

Skills

Mumford and Peterson (1995) define skills, as used in the O*NET, as “a set of general procedures that underlie the effective acquisition and application of knowledge in various domains of endeavor” (p. 4). This definition implies that skills: are inherently tied to knowledge, practice and expertise; can be viewed as general procedures required to perform multiple tasks lying in some broad domain; and are not necessarily stable attributes of the individual. Instead, they are attributes that develop as a function of the experience within the domain.

Mumford and Peterson (1995) categorize skills into three areas: basic, cross-functional, and occupation-specific. The first category, basic skills, is also known as learning-relevant skills, which facilitate the acquisition of new knowledge. Basic skills are divided into two categories: content and process skills. Basic content skills are the capabilities that allow people to acquire information and convey this information to others. Examples of basic content skills include *reading comprehension, active listening, writing, and speaking* (Mumford, Peterson, & Childs, 1999). Basic process skills facilitate the acquisition of content across domains. Not all information or content is equally valuable, consequently, one must learn to identify relevant information. Process skills are those skills that enable the acquisition of relevant information and include active learning, learning strategies, monitoring and critical thinking skills (Mumford & Peterson, 1995).

The second category of skills is known as cross-functional skills and they are defined as developed capacities that contribute to performance in a variety of job settings (Mumford and Peterson, 1995). Mumford and Peterson based their taxonomy of cross functional skills on Katz and Kahn’s (1978) socio-technical systems theory. This theory views work as a process by which raw materials are transformed into useful products by the interaction of technology and people. Along with on-going problem solving, this transformation process emphasizes the need for individuals to work with people, technology, a broad organizational system, and available resources to complete the work. The five general domains of cross-functional skills are: *problem-*

solving skills, social skills, technical skills, resource management skills and systems skills

(Mumford & Peterson, 1995).

Since problem-solving is not dependent solely on expertise, Mumford and Peterson's (1995) taxonomy of problem-solving skills strives to articulate the processes and procedures commonly applied when working with information to solve complex problems. They identified eight processes that are involved in problem-solving. These problem solving steps are: *problem identification, information organization, synthesis, reorganization, idea generation, idea evaluation, implementation planning and solution appraisal*. Measures of problem-solving skills are effective predictors of performance on relevant tasks and jobs that require problem-solving. In a rapidly changing world that demands innovation and analysis of information, these skills may prove of great importance (Mumford & Peterson, 1995).

Social skills are also categorized as cross-functional skills. Working with others is part of almost every job. In fact, some have even defined work in terms of social interaction (Hackman & Morris, 1975). Likewise, social skills are especially important to organizations that emphasize teamwork and customer service (Mumford & Peterson, 1995).

Research shows that social skills seem to be influenced by general intelligence and by experience in various social situations. There have been two approaches that have been used to identify essential social skills. The first approach is based on general intelligence studies. The second approach is based on empirical methodology and involves analyses of performance requirements involved in tasks requiring social interaction. Mumford and Peterson (1995) found similar sets of social skills from both approaches. Consequently, they proposed a six-variable taxonomy of social skills which can be organized in terms of a stimulus, operations, response model. *Social perceptiveness*, the capacity to make sense of social information, leads to behavioral adjustments in the social interaction. This behavioral change results in a *response coordination*, adjustment of one's behavior in relation to others, which is the second of the social

skills. This response might be intended to persuade or negotiate which correspond to the social skills *persuasion* and *negotiation*. In the same way, the response might be intended to facilitate others' actions through coaching or service-related activities which correspond to the social skills, *instructing*, and *service orientation*, respectively (Mumford & Peterson, 1995).

Technical skills have not acquired as much attention as the previously mentioned skills. Mumford and Peterson (1995) reviewed 48 job analyses of technical occupations and their tasks. All of these jobs involved activities associated with equipment design, equipment set-up, equipment operations and operations maintenance. The key procedures involved in each of these general activity areas were organized into a comprehensive taxonomy of technical skills. For example, the general activity of equipment design involves the procedures of *operation analysis*, *technical design*, and *equipment selection*. Twelve technical skills have been identified and appear to account for more than 90% of the technical tasks found on the 48 job analyses to develop the technical skills taxonomy (Mumford & Peterson, 1995).

System skills are those skills required to work in socio-technical systems, which are organizations where production is not based on the efforts of a single individual but many people and many pieces of equipment. The system skills focus on the social aspects of complex organizational systems. *Visioning*, *systems perception*, *identification of downstream consequences*, *identification of key causes*, *judgment and decision making* and *systems evaluation* are all system skills (Mumford and Peterson, 1995). Bass suggests these skills may be required in complex organizational systems where it is not obvious how actions in one part of the system will impact another part of the system (as cited in Mumford & Peterson, 1995).

Resource management skills represent the set of cross-functional skills needed to allocate available physical and personnel resources effectively. Mumford and Peterson's (1995) resource management taxonomy is comprised of four variables, management of personnel resources, management of material resources, management of financial resources and time management. The

first two variables are similar to those initially identified by Fleishman, Mumford, Zaccaro, Levin, Hein and Korotkin (1991) which focus mainly on organizational activities whereas the latter two variables are more “intrinsic to the individual” (Mumford & Peterson, 1995).

Occupation specific skills make up the third category of skills and they address the actual procedures needed to perform tasks on a certain job. These skills can be viewed as basic and cross-functional skills within the context of a specific job (Mumford & Peterson, 1995).

Abstract and concrete variables

Worker-oriented and job-oriented variables have been mentioned previously in the discussions of the O*NET variables. However, the O*NET content model does not fully examine the worker-oriented versus job-oriented dimensions. Worker-oriented variables describe basic human activities or specific human behaviors and have no technological content. In essence, they describe what the worker does. Examples of worker-oriented variables include making visual discriminations, making decisions, and moving objects by hand (McCormick, Cunningham, & Gordon, 1967). On the other hand, job-oriented variables describe what is accomplished by the worker. Therefore, job-oriented elements can be thought of as being associated with the technological aspects of the job. Examples of job-oriented elements include: grinds castings, galvanizes sheet metal, or bakes bread. McCormick (1959) suggested using worker-oriented elements for investigating indirect validity, which he described as a type of synthetic validity.

Exploratory attempts by J. W. Cunningham and colleagues to classify the O*NET descriptors as either “worker-oriented” or “job-oriented” were difficult, likely because of the complexity of this distinction. Consequently, for the purposes of this study, the variables were classified according to one aspect of the job/worker-oriented dimensions. They were rated according to their “abstractness” or “concreteness.” For the purposes of this research, the “abstract” descriptors are explained in terms of descriptors that tend to be disassociated with material content, expressing qualities or processes apart from tangible things or events. They lack

embodiment and are further removed than concrete descriptors from our immediate experience. They are usually less specific in detail and more general in scope. They are more difficult to understand and less likely to evoke visual images when we read them. For those reasons, they are likely to be more difficult for analysts or incumbents to use in rating jobs. An example of an abstract descriptor is the ability-requirement statement, “Inductive Reasoning-The ability to combine pieces of information to form general rules for conclusions.”

In comparison to abstract descriptors, “concrete” descriptors tend to be more content-specific, referring to material things, tangible subject matter, actions, events or outcomes, etc. The concrete descriptors are more closely related to our immediate experience, easier to understand, and more likely to evoke visual images when we read them. For those reasons, they should be easier for job incumbents and analysts or incumbents to use in rating jobs. An example of a concrete descriptor is the task statement, “Drives truck to deliver such items as food, medical supplies, or newspapers.”

ANALYSES

Abstract-Concrete Ratings

Each of the aforementioned domains, knowledges, skills and GWAs were grouped together and rated on the aforementioned six-point abstract-concrete scale. In addition to these domains, abilities were also rated on the degree of abstractness or concreteness. A descriptor (e.g. GWA1: Getting information needed to do the job) was considered “abstract” if it had a mean rating below 3.80. Likewise, a descriptor was considered “concrete” if it had a mean rating of 3.80 or above. This cutoff was determined by averaging the overall mean rating for the knowledges, skills, GWAs and abilities (3.83) with the overall mean rating of knowledges, skills and GWAs (3.76). In addition to partitioning the variables (K,S, and GWAs) into either the concrete or abstract category by using the 3.80 cutoff, several variables were discarded based on their standard deviations. The overall mean standard deviation for the knowledges, skills, GWAs and abilities was .99, and the

standard deviation of the standard deviation was .18. Therefore, one standard deviation above the mean standard deviation was 1.17, so any dimension with a standard deviation above 1.18 was eliminated from the data set. These dimensions were considered too extreme in terms of interrater disagreement. These criteria resulted in the retention of 49 Abstract dimensions and 53 Concrete dimensions. There were 13 abstract descriptors and 6 concrete descriptors that were not included in the data set based on the standard deviations exceeding 1.18. These are listed in Appendix B. Once the descriptors were classified as abstract or concrete, each of the categories was subjected to factor analyses based on OU ratings.

Coefficient Alpha

To determine interrater reliability estimates, coefficient alphas were computed on the ratings of the abstract-concrete survey (i.e. proc corr in SAS). Coefficient alphas were computed for: each of the domain ratings individually (knowledges, skills, abilities, GWAs), knowledges, skills, GWAs and abilities ratings together, and the knowledges, skills and GWAs together.

Factor Analyses

Consistent with the aforementioned objectives, Level and Importance scales for knowledges, skills, and generalized work activities domains, along with the abstract and concrete categories were factor analyzed. The following analytic procedure was applied to each set.

Principal Components Analyses

Principal component analyses were run separately on the data sets based on Level and Importance ratings of the OUs on knowledges, skills, and GWAs. In addition, principal component analyses were applied separately to the O*NET descriptors classified as either “abstract” or “concrete” (i.e. proc factor in SAS). The appropriate number of factors to rotate was determined by examining the eigenvalue pattern according to Kaiser’s rule of retaining the number of factors with eigenvalues \geq to 1.00 (Kaiser, 1974). The correlation matrix, eigenvalues, and rotated factor matrix for each of these solutions are displayed in Appendix C.

Principal Axes Analyses

Subsequently, principal axes analyses (with R^2 's as communality estimates) with normalized varimax solutions were run using the eigenvalues from the principal component analyses as a guide for determining the number of factors to rotate. Several rotated solutions (involving different numbers of rotated factors) were examined thoroughly for each data set and the most meaningful solution was chosen. The correlation matrix, eigenvalues, and rotated factor matrix for each of the factor solutions are displayed in Appendix D.

Coefficients of Congruence

Finally, coefficients of congruence were calculated on two comparable subsamples in order to examine the factor stability (Tucker, 1951). The factor stability analysis consisted of: (a) splitting the total OUs into two samples, each consisting of 561 OUs; (b) running principal axes analyses with normalized varimax rotation independently on each half-sample; (c) judgmentally matching factors between the two half-samples; (d) calculating the cosine between rotated factor loading vectors (i.e. the congruence coefficient). All of the congruence coefficients are summarized in Appendix E.

RESULTS

Each of the factor solutions reported below are summarized in the corresponding table. Factor names and the names of the variables with factor loadings of .38 or higher are listed. The percentage of variance accounted for by the factor and the congruence coefficients for the subsample analyses are also listed.

Knowledge, Level Scale

The 33 Knowledges using Level scale were factor analyzed and an eight-factor solution was determined accounting for a total of 65.26% of variance (see Table 1). Congruence coefficients were calculated between comparable subsamples, as indicators of factorial stability. These coefficients ranged from .954 to .996 with a mean of .975. A value of .90 or greater is

considered to be significant. All of the knowledge level congruence coefficients were greater than .90 revealing a strong replicable factor structure.

Knowledge, Importance Scale

Analyses using the Knowledges, Importance scale resulted in a nine-factor solution which accounted for 60.66% of variance (see Table 2). Congruence coefficients were calculated and ranged from .947 to .993 with a mean of .982. All of the congruence coefficients were above .95 indicating a strong replicable factor structure.

Skills, Level Scale

For the 46 Skills a five-factor solution was determined which accounted for 80.80% of variance (see Table 3). The subsample replication of these five factors revealed congruence coefficients ranging from .732 to .997 with a mean of .935. Four out of the five coefficients were above .95.

Skills, Importance Scale

For the Skills using Importance scale a seven-factor solution was chosen. This solution accounted for 76.77% of variance (see Table 4). Comparisons of the factor structure between the two subsamples generated congruence coefficients which ranged from .872 to .992 with a mean of .944.

Generalized Work Activities, Level Scale

Analyses carried out on the 42 Generalized Work Activities generated a six-factor solution accounting for a total of 77.63% of variance (see Table 5). Congruence coefficients calculated between the subsamples were very strong ranging from .960 to .999 with a mean of .985.

Generalized Work Activities, Importance Scale

Generalized Work Activities using Importance scale produced a seven-factor solution was chosen which accounted for 75.66% of variance. Congruence coefficients ranged from .914 to

.996 with a mean coefficient of .978. Again, a strong replicable factor structure was found (see Table 6).

Abstract, Level Scale

The 49 Abstract dimensions were analyzed and a five-factor solution was determined. This solution accounted for 83.52% of the variance. Congruence coefficients ranged from .994 to .999 with a mean of .997 (see Table 7).

Abstract, Importance Scale

Analyses on the Abstract dimensions using the Importance scale generated a seven-factor solution which accounted for 78.85% of variance. Coefficients of congruence ranged from .535 to .998 with a mean of .912 (see Table 8). Five of the seven coefficients were above .98 displaying a strong factor structure.

Concrete, Level Scale

The 53 Concrete dimensions analyses resulted in an eight-factor solution accounting for 56.85% of variance (see Table 9). Congruence coefficients ranged from .864 to .994 with a mean of .959. Six of the eight coefficients were above .98.

Concrete, Importance Scale

With the Importance scale, a nine-factor solution was determined which accounted for 59.32% of variance (see Table 10). Congruence coefficients ranged from .829 to .996 with a mean of .963.

Table 1 (1 of 2) (Knowledge Level) Eight-Factor Solution: Factor Titles, Salient Knowledges, Percentages of Variance Explained, and Coefficients of Congruence

O*NET LEVEL: Factor Title and Knowledges	Factor Loading	% Variance	Cong. Coeff.
<u>1. Management and Human Resources (11)</u>		13.39%	.996
KN3 Economics and Accounting	.82		
KN1 Administration and Management	.81		
KN6 Personnel and Human Resources	.77		
KN4 Sales and Marketing	.58		
KN14 Mathematics	.56		
KN30 Legal, Government and Jurisprudence	.51		
KN23 Education and Training	.50		
KN24 English Language	.46		
KN18 Psychology	.46		
KN2 Clerical	.43		
KN32 Communications and Media	.40		
<u>2. Applied Physical Sciences and Technology (6)</u>		11.57%	.996
KN10 Engineering and Technology	.89		
KN11 Design	.78		
KN15 Physics	.77		
KN13 Mechanical	.73		
KN12 Building and Construction	.65		
KN7 Production and Processing	.52		
<u>3. Humanities and Social Sciences (8)</u>		9.96%	.992
KN27 History and Archeology	.82		
KN19 Sociology and Anthropology	.76		
KN28 Philosophy	.75		
KN25 Foreign Language	.50		
KN24 English Language	.46		
KN20 Geography	.43		
KN32 Communications and Media	.41		
KN23 Education and Training	.38		
<u>4. Health Services (5)</u>		8.08%	.989
KN22 Therapy and Counseling	.82		
KN18 Psychology	.69		
KN21 Medicine and Dentistry	.66		
KN5 Customer and Personal Service	.49		
KN23 Education and Training	.47		

Table 1 (2 of 2)

O*NET LEVEL: Factor Title and Knowledges	Factor Loading	% Variance	Cong. Coeff.
<u>5. Information Processing and Communications (6)</u>		7.40%	.992
KN9 Computers and Electronics	.77		
KN31 Telecommunications	.59		
KN24 English Language	.54		
KN32 Communications and Media	.49		
KN14 Mathematics	.47		
KN2 Clerical	.44		
<u>6. Transportation and Safety (5)</u>		6.12%	.988
KN33 Transportation	.72		
KN20 Geography	.64		
KN29 Public Safety and Security	.63		
KN30 Legal, Government and Jurisprudence	.44		
KN31 Telecommunications	.39		
<u>7. Biology (4)</u>		5.89%	.975
KN17 Biology	.82		
KN16 Chemistry	.73		
KN21 Medicine and Dentistry	.49		
KN8 Food Production	.48		
<u>8. Fine Arts (2)</u>		2.85%	.954
KN26 Fine Arts	.53		
KN4 Sales and Marketing	.41		

Table 2 (1 of 2) (Knowledge Importance) Nine-Factor Solution: Factor Titles, Salient Knowledges, Percentages of Variance Explained, and Coefficients of Congruence

O*NET IMPORTANCE: Factor Title and Knowledges	Factor Loading	% Variance	Cong. Coeff.
<u>1. Applied Physical Sciences and Technology (5)</u>		10.01%	.992
KN10 Engineering and Technology	.87		
KN15 Physics	.75		
KN11 Design	.73		
KN13 Mechanical	.60		
KN12 Building and Construction	.55		
<u>2. Management and Human Resources (6)</u>		8.12%	.987
KN1 Administration and Management	.80		
KN6 Personnel and Human Resources	.78		
KN23 Education and Training	.50		
KN3 Economics and Accounting	.48		
KN24 English Language	.39		
KN18 Psychology	.39		
<u>3. Information Processing and Communications (6)</u>		8.08%	.990
KN9 Computers and Electronics	.76		
KN24 English Language	.63		
KN32 Communications and Media	.57		
KN31 Telecommunications	.56		
KN2 Clerical	.54		
KN14 Mathematics	.46		
<u>4. Health Services (5)</u>		8.01%	.985
KN22 Therapy and Counseling	.81		
KN18 Psychology	.72		
KN21 Medicine and Dentistry	.63		
KN5 Customer and Personal Service	.49		
KN23 Education and Training	.48		
<u>5. Humanities and Social Sciences (4)</u>		7.80%	.993
KN27 History and Archeology	.77		
KN28 Philosophy	.71		
KN19 Sociology and Anthropology	.71		
KN25 Foreign Language	.42		

Table 2 (2 of 2)

O*NET IMPORTANCE: Factor Title and Knowledges	Factor Loading	% Variance	Cong. Coeff.
<u>6. Transportation and Safety (5)</u>		6.09%	.991
KN33 Transportation	.73		
KN20 Geography	.66		
KN29 Public Safety and Security	.64		
KN30 Legal, Government and Jurisprudence	.43		
KN31 Telecommunications	.41		
<u>7. Biology (4)</u>		5.42%	.973
KN17 Biology	.80		
KN16 Chemistry	.68		
KN21 Medicine and Dentistry	.48		
KN8 Food Production	.44		
<u>8. Accounting and Sales (3)</u>		4.44%	.979
KN3 Economics and Accounting	.60		
KN4 Sales and Marketing	.57		
KN14 Mathematics	.45		
<u>9. Fine Arts (1)</u>		2.69%	.947
KN26 Fine Arts	.57		

Table 3 (1 of 3) (Skill Level) Five-Factor Solution: Factor Titles, Salient Skills, Percentages of Variance Explained, and Coefficients of Congruence

O*NET LEVEL: Factor Title and Skills	Factor Loading	% Variance	Cong. Coeff.
<u>1. Thinking and Problem-Solving (31)</u>		31.97%	.997
SK18 Information gathering	.83		
SK19 Information organization	.83		
SK8 Active learning	.83		
SK20 Synthesis/Reorganization	.83		
SK1 Reading comprehension	.82		
SK7 Critical thinking	.80		
SK3 Writing	.76		
SK22 Idea evaluation	.73		
SK24 Solution appraisal	.72		
SK5 Mathematics	.72		
SK21 Idea generation	.72		
SK17 Problem identification	.70		
SK41 Judgment and decision making	.70		
SK6 Science	.69		
SK10 Monitoring	.65		
SK39 Identification of downstream consequences	.65		
SK37 Visioning	.65		
SK40 Identification of key causes	.65		
SK38 Systems perceptions	.62		
SK23 Implementation planning	.62		
SK42 Systems evaluation	.62		
SK9 Learning strategies	.62		
SK4 Speaking	.61		
SK2 Active listening	.61		
SK29 Programming	.59		
SK25 Operations analysis	.56		
SK13 Persuasion	.46		
SK15 Instructing	.43		
SK30 Testing	.42		
SK43 Time management	.41		
SK12 Coordination	.38		
<u>2. Management (31)</u>		26.70%	.993
SK46 Management of personnel resources	.84		
SK43 Time management	.80		
SK44 Management of financial resources	.79		

Table 3 (2 of 3)

O*NET LEVEL: Factor Title and Skills		Factor Loading	% Variance	Cong. Coeff.
SK45	Management of material resources	.78		
SK12	Coordination	.75		
SK14	Negotiation	.75		
SK42	Systems evaluation	.70		
SK23	Implementation planning	.68		
SK39	Identification of downstream consequences	.68		
SK37	Visioning	.67		
SK38	Systems perceptions	.67		
SK40	Identification of key causes	.66		
SK13	Persuasion	.66		
SK41	Judgment and decision making	.62		
SK22	Idea evaluation	.59		
SK24	Solution appraisal	.59		
SK10	Monitoring	.59		
SK15	Instructing	.58		
SK21	Idea generation	.58		
SK11	Social Perceptiveness	.58		
SK9	Learning strategies	.54		
SK4	Speaking	.53		
SK17	Problem identification	.52		
SK7	Critical thinking	.49		
SK25	Operations analysis	.48		
SK2	Active listening	.47		
SK8	Active learning	.46		
SK18	Information gathering	.42		
SK20	Synthesis/Reorganization	.42		
SK3	Writing	.42		
SK16	Service orientation	.40		
<u>3. Equipment Maintenance and Repair (11)</u>			14.54%	.982
SK35	Troubleshooting	.91		
SK34	Equipment maintenance	.86		
SK31	Operation monitoring	.83		
SK36	Repairing	.82		
SK28	Installation	.79		
SK30	Testing	.78		
SK32	Operation and control	.73		
SK27	Equipment selection	.64		
SK26	Technical design	.63		
SK33	Product inspection	.58		
SK6	Science	.43		

Table 3 (3 of 3)

O*NET LEVEL: Factor Title and Skills	Factor Loading	% Variance	Cong. Coeff.
<u>4. Service (5)</u>		5.04%	.970
SK16 Service orientation	.68		
SK11 Social Perceptiveness	.59		
SK2 Active listening	.49		
SK4 Speaking	.45		
SK15 Instructing	.43		
<u>5. Technical Design (2)</u>		2.55%	-.732
SK26 Technical design	.47		
SK25 Operations analysis	.46		

Table 4 (1 of 3) (Skill Importance) Seven-Factor Solution: Factor Titles, Salient Skills, Percentages of Variance Explained, and Coefficients of Congruence

O*NET IMPORTANCE: Factor Title and Skills	Factor Loading	% Variance	Cong. Coeff.
<u>1. Thinking and Problem-Solving (33)</u>		36.38%	.985
SK22 Idea evaluation	.88		
SK40 Identification of key causes	.87		
SK7 Critical thinking	.87		
SK37 Visioning	.87		
SK38 Systems perceptions	.87		
SK39 Identification of downstream consequences	.86		
SK24 Solution appraisal	.86		
SK41 Judgment and decision making	.85		
SK21 Idea generation	.84		
SK8 Active learning	.84		
SK42 Systems evaluation	.83		
SK23 Implementation planning	.78		
SK20 Synthesis/Reorganization	.77		
SK18 Information gathering	.74		
SK9 Learning strategies	.74		
SK10 Monitoring	.73		
SK17 Problem identification	.72		
SK19 Information organization	.67		
SK43 Time management	.65		
SK1 Reading comprehension	.65		
SK13 Persuasion	.60		
SK3 Writing	.60		
SK12 Coordination	.59		
SK14 Negotiation	.57		
SK4 Speaking	.55		
SK46 Management of personnel resources	.55		
SK2 Active listening	.52		
SK15 Instructing	.51		
SK25 Operations analysis	.50		
SK44 Management of financial resources	.44		
SK6 Science	.43		
SK11 Social Perceptiveness	.43		
SK45 Management of material resources	.43		

Table 4 (2 of 3)

O*NET IMPORTANCE: Factor Title and Skills	Factor Loading	% Variance	Cong. Coeff.
<u>2. Equipment Maintenance and Repair (10)</u>		12.65%	.990
SK35 Troubleshooting	.91		
SK36 Repairing	.85		
SK34 Equipment maintenance	.82		
SK28 Installation	.78		
SK30 Testing	.74		
SK27 Equipment selection	.65		
SK31 Operation monitoring	.64		
SK26 Technical design	.59		
SK32 Operation and control	.49		
SK33 Product inspection	.41		
<u>3. Service (7)</u>		9.13%	.992
SK16 Service orientation	.77		
SK11 Social Perceptiveness	.76		
SK4 Speaking	.67		
SK2 Active listening	.66		
SK15 Instructing	.55		
SK13 Persuasion	.47		
SK12 Coordination	.42		
<u>4. Mathematics and Science (8)</u>		6.73%	.872
SK5 Mathematics	.60		
SK6 Science	.51		
SK1 Reading comprehension	.50		
SK19 Information organization	.50		
SK18 Information gathering	.49		
SK3 Writing	.45		
SK29 Programming	.44		
SK20 Synthesis/Reorganization	.40		
<u>5. Management (6)</u>		6.35%	.922
SK45 Management of material resources	.66		
SK44 Management of financial resources	.64		
SK46 Management of personnel resources	.60		
SK14 Negotiation	.46		
SK43 Time management	.45		
SK12 Coordination	.43		

Table 4 (3 of 3)

O*NET IMPORTANCE: Factor Title and Skills	Factor Loading	% Variance	Cong. Coeff.
<u>6. Equipment Operation and Monitoring (2)</u>		2.77%	.964
SK31 Operation monitoring	.64		
SK32 Operation and control	.63		
<u>7. Technical Design (3)</u>		2.75%	.882
SK27 Equipment selection	.43		
SK26 Technical design	.42		
SK25 Operations analysis	.39		

Table 5 (1 of 2) (Generalized Work Activities Level) Six-Factor Solution: Factor Titles, Salient GWAs, Percentages of Variance Explained, and Coefficients of Congruence

O*NET LEVEL: Factor Title and GWAs	Factor Loading	% Variance	Cong. Coeff.
<u>1. Analyzing and Problem Solving (28)</u>		33.56%	.999
GWA9 Analyzing data or information	.89		
GWA8 Processing information	.89		
GWA12 Updating and using job-relevant knowledge	.87		
GWA2 Identifying objects, actions, and events	.86		
GWA1 Getting information needed to do job	.86		
GWA25 Documenting/recording information	.83		
GWA10 Making decisions and solving problems	.83		
GWA26 Interpreting the meaning of information for others	.82		
GWA7 Evaluating information for compliance to standards	.81		
GWA6 Judging the qualities of objects, services, or persons	.77		
GWA19 Interacting with computers	.77		
GWA39 Providing consultation and advice to others	.72		
GWA22 Implementing ideas, programs, systems or products	.71		
GWA27 Communicating with supervisors, peers or subordinates	.70		
GWA3 Monitoring processes, materials, or surroundings	.69		
GWA5 Estimating the characteristics of materials, products, events or information	.68		
GWA13 Developing objectives and strategies	.64		
GWA15 Organizing, planning, and prioritizing work	.64		
GWA11 Thinking creatively	.57		
GWA28 Communicating with persons outside the organizations	.54		
GWA40 Performing administrative activities	.53		
GWA36 Teaching others	.46		
GWA21 Drafting, laying-out, and specifying technical devices, parts, and equipment	.42		
GWA14 Scheduling work and activities	.41		
GWA29 Establishing and maintaining interpersonal relationships	.40		
GWA34 Coordinating the work and activities of others	.39		
GWA17 Handling and moving objects	-.43		
GWA16 Performing general physical activities	-.46		
<u>2. Managing Others (18)</u>		21.73%	.998
GWA37 Guiding, directing and motivating subordinates	.88		
GWA35 Developing and building teams	.85		
GWA41 Staffing organizational units	.83		
GWA34 Coordinating the work and activities of others	.81		

Table 5 (2 of 2)

O*NET LEVEL: Factor Title and GWAs	Factor Loading	% Variance	Cong. Coeff.
GWA14 Scheduling work and activities	.77		
GWA38 Coaching and developing others	.75		
GWA42 Monitoring and controlling resources	.74		
GWA32 Resolving conflicts and negotiating with others	.66		
GWA40 Performing administrative activities	.63		
GWA13 Developing objectives and strategies	.56		
GWA15 Organizing, planning, and prioritizing work	.56		
GWA36 Teaching others	.55		
GWA27 Communicating with supervisors, peers or subordinates	.53		
GWA29 Establishing and maintaining interpersonal relationships	.53		
GWA31 Selling or influencing others	.47		
GWA39 Providing consultation and advice to others	.47		
GWA5 Estimating the characteristics of materials, products, events or information.	.41		
GWA10 Making decisions and solving problems	.40		
<u>3. Interacting with Others (6)</u>		9.24%	.995
GWA33 Performing for or working directly with the public	.80		
GWA30 Assisting and caring for others	.68		
GWA29 Establishing and maintaining interpersonal relationships	.63		
GWA28 Communicating with persons outside the organizations	.62		
GWA31 Selling or influencing others	.56		
GWA32 Resolving conflicts and negotiating with others	.46		
<u>4. Repairing and Maintaining Equipment (8)</u>		8.13%	.991
GWA23 Repairing and maintaining mechanical equipment	.77		
GWA4 Inspecting equipment, structures or materials	.75		
GWA18 Controlling machines and processes	.68		
GWA24 Repairing and maintaining electronic equipment	.58		
GWA16 Performing general physical activities	.53		
GWA17 Handling and moving objects	.51		
GWA3 Monitoring processes, materials, or surroundings	.43		
GWA20 Operating vehicles, mechanized devices, or equipment	.39		
<u>5. Drafting and Designing (3)</u>		3.02%	.960
GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	.53		
GWA11 Thinking creatively	.50		
GWA22 Implementing ideas, programs, systems or products	.39		
<u>6. Teaching Others (1)</u>		1.95%	.966
GWA36 Teaching others	.39		

Table 6 (1 of 2) (Generalized Work Activities Importance) Seven-Factor Solution: Factor Titles, Salient GWAs, Percentages of Variance Explained, and Coefficients of Congruence

O*NET IMPORTANCE: Factor Title and GWAs	Factor Loading	% Variance	Cong. Coeff.
<u>1. Analyzing and Problem-Solving (20)</u>		21.46%	.994
GWA2 Identifying objects, actions, and events	.83		
GWA9 Analyzing data or information	.83		
GWA8 Processing information	.81		
GWA1 Getting information needed to do job	.79		
GWA25 Documenting/recording information	.72		
GWA10 Making decisions and solving problems	.70		
GWA12 Updating and using job-relevant knowledge	.69		
GWA26 Interpreting the meaning of information for others	.67		
GWA7 Evaluating information for compliance to standards	.64		
GWA39 Providing consultation and advice to others	.60		
GWA6 Judging the qualities of objects, services, or persons	.59		
GWA19 Interacting with computers	.58		
GWA40 Performing administrative activities	.54		
GWA27 Communicating with supervisors, peers or subordinates	.53		
GWA13 Developing objectives and strategies	.48		
GWA15 Organizing, planning, and prioritizing work	.46		
GWA5 Estimating the characteristics of materials, products, events or information	.40		
GWA28 Communicating with persons outside the organizations	.40		
GWA16 Performing general physical activities	-.53		
GWA17 Handling and moving objects	-.55		
<u>2. Managing Others (16)</u>		20.20%	.996
GWA37 Guiding, directing and motivating subordinates	.91		
GWA35 Developing and building teams	.87		
GWA34 Coordinating the work and activities of others	.85		
GWA41 Staffing organizational units	.81		
GWA38 Coaching and developing others	.81		
GWA14 Scheduling work and activities	.76		
GWA36 Teaching others	.66		
GWA13 Developing objectives and strategies	.63		
GWA42 Monitoring and controlling resources	.62		
GWA15 Organizing, planning, and prioritizing work	.58		
GWA27 Communicating with supervisors, peers or subordinates	.57		
GWA32 Resolving conflicts and negotiating with others	.54		
GWA29 Establishing and maintaining interpersonal relationships	.49		
GWA40 Performing administrative activities	.47		

Table 6 (2 of 2)

O*NET IMPORTANCE: Factor Title and GWAs	Factor Loading	% Variance	Cong. Coeff.
GWA10 Making decisions and solving problems	.43		
GWA39 Providing consultation and advice to others	.42		
<u>3. Interacting with Others (8)</u>		11.66%	.992
GWA33 Performing for or working directly with the public	.85		
GWA30 Assisting and caring for others	.76		
GWA28 Communicating with persons outside the organizations	.73		
GWA29 Establishing and maintaining interpersonal relationships	.71		
GWA31 Selling or influencing others	.58		
GWA32 Resolving conflicts and negotiating with others	.50		
GWA26 Interpreting the meaning of information for others	.48		
GWA36 Teaching others	.40		
<u>4. Repairing and Maintaining Equipment (7)</u>		8.33%	.986
GWA4 Inspecting equipment, structures or materials	.75		
GWA23 Repairing and maintaining mechanical equipment	.71		
GWA24 Repairing and maintaining electronic equipment	.70		
GWA18 Controlling machines and processes	.64		
GWA3 Monitoring processes, materials, or surroundings	.60		
GWA17 Handling and moving objects	.53		
GWA16 Performing general physical activities	.42		
<u>5. Drafting and Designing (5)</u>		7.35%	.993
GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	.73		
GWA22 Implementing ideas, programs, systems or products	.71		
GWA11 Thinking creatively	.68		
GWA5 Estimating the characteristics of materials, products, events or information	.47		
GWA15 Organizing, planning, and prioritizing work	.41		
<u>6. Operating equipment (3)</u>		3.58%	.914
GWA20 Operating vehicles, mechanized devices, or equipment	.70		
GWA16 Performing general physical activities	.44		
GWA19 Interacting with computers	-.50		
<u>7. Controlling Resources (2)</u>		3.07%	.968
GWA42 Monitoring and controlling resources	.47		
GWA40 Performing administrative activities	.42		

Table 7 (1 of 3) (Abstract Level) Five-Factor Solution: Factor Titles, Salient Abstract Dimensions, Percentages of Variance Explained, and Coefficients of Congruence

ABSTRACT LEVEL: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
<u>1. Analysis and Problem-Solving (31)</u>		29.57%	.999
GWA12 Updating and using job-relevant knowledge	.84		
GWA9 Analyzing data or information	.84		
GWA2 Identifying objects, actions, and events	.80		
GWA1 Getting information needed to do job	.78		
GWA10 Making decisions and solving problems	.77		
SK6 Science	.76		
GWA26 Interpreting the meaning of information for others	.73		
SK18 Information gathering	.73		
SK8 Active learning	.72		
SK5 Mathematics	.72		
SK20 Synthesis/Reorganization	.70		
SK19 Information organization	.70		
SK7 Critical thinking	.70		
GWA3 Monitoring processes, materials, or surroundings	.68		
SK17 Problem identification	.64		
GWA39 Providing consultation and advice to others	.64		
SK22 Idea evaluation	.63		
SK24 Solution appraisal	.62		
SK41 Judgment and decision making	.60		
GWA13 Developing objectives and strategies	.59		
SK39 Identification of downstream consequences	.58		
GWA15 Organizing, planning, and prioritizing work	.58		
GWA11 Thinking creatively	.58		
SK42 Systems evaluation	.56		
SK37 Visioning	.56		
SK38 Systems perceptions	.55		
SK40 Identification of key causes	.55		
SK10 Monitoring	.53		
SK9 Learning strategies	.48		
SK2 Active listening	.44		
GWA36 Teaching others	.39		
<u>2. Management and Development (18)</u>		18.10%	.998
GWA37 Guiding, directing and motivating subordinates	.86		
GWA35 Developing and building teams	.81		
GWA34 Coordinating the work and activities of others	.80		

Table 7 (2 of 3)

ABSTRACT LEVEL: Factor Title and Variables		Factor Loading	% Variance	Cong. Coeff.
SK46	Management of personnel resources	.76		
GWA38	Coaching and developing others	.74		
GWA42	Monitoring and controlling resources	.65		
KN1	Administration and Management	.62		
GWA36	Teaching others	.57		
SK43	Time management	.56		
SK12	Coordination	.53		
SK15	Instructing	.52		
GWA32	Resolving conflicts and negotiating with others	.51		
GWA13	Developing objectives and strategies	.49		
GWA15	Organizing, planning, and prioritizing work	.48		
GWA29	Establishing and maintaining interpersonal relationships	.43		
GWA39	Providing consultation and advice to others	.41		
SK14	Negotiation	.39		
SK42	Systems evaluation	.38		
<u>3. Visioning and Evaluation (25)</u>			17.03%	.996
SK37	Visioning	.65		
SK40	Identification of key causes	.64		
SK38	Systems perceptions	.64		
SK39	Identification of downstream consequences	.64		
SK42	Systems evaluation	.62		
SK24	Solution appraisal	.60		
SK41	Judgment and decision making	.60		
SK43	Time management	.60		
SK22	Idea evaluation	.56		
SK10	Monitoring	.55		
SK14	Negotiation	.54		
SK13	Persuasion	.54		
SK12	Coordination	.53		
SK7	Critical thinking	.52		
SK9	Learning strategies	.52		
SK17	Problem identification	.50		
SK8	Active learning	.50		
SK20	Synthesis/Reorganization	.47		
SK46	Management of personnel resources	.46		
SK18	Information gathering	.46		
SK2	Active listening	.45		
SK11	Social Perceptiveness	.45		
KN1	Administration and Management	.44		
SK19	Information organization	.43		
SK15	Instructing	.39		

Table 7 (3 of 3)

ABSTRACT LEVEL: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
<u>4. Sales and Marketing (11)</u>		9.69%	.994
GWA31 Selling or influencing others	.70		
GWA32 Resolving conflicts and negotiating with others	.65		
GWA29 Establishing and maintaining interpersonal relationships	.57		
SK14 Negotiation	.55		
SK13 Persuasion	.51		
SK11 Social Perceptiveness	.46		
GWA42 Monitoring and controlling resources	.45		
SK2 Active listening	.44		
GWA39 Providing consultation and advice to others	.43		
GWA15 Organizing, planning, and prioritizing work	.41		
GWA13 Developing objectives and strategies	.39		
<u>5. Service (9)</u>		9.13%	.996
GWA30 Assisting and caring for others	.78		
KN22 Therapy and Counseling	.77		
SK11 Social Perceptiveness	.60		
GWA36 Teaching others	.55		
SK15 Instructing	.54		
GWA29 Establishing and maintaining interpersonal relationships	.49		
SK2 Active listening	.46		
GWA38 Coaching and developing others	.46		
SK9 Learning strategies	.46		

Table 8 (1 of 3) (Abstract Importance) Seven-Factor Solution: Factor Titles, Salient Abstract Dimensions, Percentages of Variance Explained, and Coefficients of Congruence

ABSTRACT IMPORTANCE: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
<u>1. Visioning and Evaluation (32)</u>		27.98%	.998
SK37 Visioning	.83		
SK24 Solution appraisal	.83		
SK40 Identification of key causes	.83		
SK39 Identification of downstream consequences	.82		
SK38 Systems perceptions	.82		
SK22 Idea evaluation	.81		
SK42 Systems evaluation	.80		
SK7 Critical thinking	.79		
SK41 Judgment and decision making	.78		
SK8 Active learning	.77		
SK17 Problem identification	.71		
SK18 Information gathering	.70		
SK10 Monitoring	.70		
SK20 Synthesis/Reorganization	.70		
SK9 Learning strategies	.69		
SK19 Information organization	.67		
SK43 Time management	.61		
SK13 Persuasion	.55		
SK12 Coordination	.53		
SK14 Negotiation	.52		
SK5 Mathematics	.47		
SK2 Active listening	.47		
SK6 Science	.46		
SK46 Management of personnel resources	.45		
GWA10 Making decisions and solving problems	.45		
SK15 Instructing	.43		
GWA1 Getting information needed to do job	.43		
GWA9 Analyzing data or information	.42		
KN1 Administration and Management	.40		
GWA39 Providing consultation and advice to others	.39		
GWA12 Updating and using job-relevant knowledge	.39		
GWA13 Developing objectives and strategies	.38		
<u>2. Management and Development (16)</u>		17.28%	.994
GWA37 Guiding, directing and motivating subordinates	.90		
GWA34 Coordinating the work and activities of others	.84		

Table 8 (2 of 3)

ABSTRACT IMPORTANCE: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
GWA35 Developing and building teams	.83		
SK46 Management of personnel resources	.80		
KN1 Administration and Management	.72		
GWA38 Coaching and developing others	.71		
GWA42 Monitoring and controlling resources	.63		
GWA36 Teaching others	.58		
GWA13 Developing objectives and strategies	.56		
GWA15 Organizing, planning, and prioritizing work	.55		
SK12 Coordination	.53		
GWA32 Resolving conflicts and negotiating with others	.52		
SK43 Time management	.52		
SK15 Instructing	.47		
GWA29 Establishing and maintaining interpersonal relationships	.45		
GWA10 Making decisions and solving problems	.39		
<u>3. Analysis and Problem-Solving (15)</u>		11.62%	.990
GWA9 Analyzing data or information	.74		
GWA2 Identifying objects, actions, and events	.68		
GWA1 Getting information needed to do job	.65		
GWA12 Updating and using job-relevant knowledge	.65		
GWA26 Interpreting the meaning of information for others	.60		
GWA10 Making decisions and solving problems	.54		
SK18 Information gathering	.54		
GWA39 Providing consultation and advice to others	.51		
SK19 Information organization	.46		
SK6 Science	.46		
SK20 Synthesis/Reorganization	.44		
SK5 Mathematics	.43		
SK7 Critical thinking	.41		
SK8 Active learning	.40		
GWA15 Organizing, planning, and prioritizing work	.39		
<u>4. Service (10)</u>		9.19%	.993
GWA30 Assisting and caring for others	.79		
KN22 Therapy and Counseling	.76		
SK11 Social Perceptiveness	.62		
SK15 Instructing	.59		
GWA36 Teaching others	.58		

Table 8 (3 of 3)

ABSTRACT IMPORTANCE: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
GWA29 Establishing and maintaining interpersonal relationships	.56		
SK2 Active listening	.50		
GWA38 Coaching and developing others	.50		
SK9 Learning strategies	.46		
GWA26 Interpreting the meaning of information for others	.43		
<u>5. Sales and Marketing (8)</u>		7.67%	.981
GWA31 Selling or influencing others	.71		
GWA32 Resolving conflicts and negotiating with others	.63		
SK14 Negotiation	.61		
SK13 Persuasion	.58		
GWA29 Establishing and maintaining interpersonal relationships	.50		
SK11 Social Perceptiveness	.49		
SK2 Active listening	.38		
GWA42 Monitoring and controlling resources	.38		
<u>6. Thinking Creatively (1)</u>		2.60%	.535
GWA11 Thinking creatively	.59		
<u>7. Monitoring Processes (1)</u>		2.51%	.896
GWA3 Monitoring processes, materials, or surroundings	.63		

Table 9 (1 of 3) (Concrete Level) Eight-Factor Solution: Factor Titles, Salient Abstract Dimensions, Percentages of Variance Explained, and Coefficients of Congruence

CONCRETE LEVEL: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
<u>1. Equipment Maintenance and Repair</u>		17.76%	.994
SK34 Equipment maintenance	.89		
SK35 Troubleshooting	.88		
SK36 Repairing	.84		
SK31 Operation monitoring	.82		
GWA23 Repairing and maintaining mechanical equipment	.80		
KN13 Mechanical	.78		
SK28 Installation	.75		
SK32 Operation and control	.74		
GWA4 Inspecting equipment, structures or materials	.71		
SK30 Testing	.70		
GWA24 Repairing and maintaining electronic equipment	.69		
GWA18 Controlling machines and processes	.64		
KN10 Engineering and Technology	.59		
SK27 Equipment selection	.51		
SK33 Product inspection	.50		
GWA17 Handling and moving objects	.41		
<u>2. Management</u>		16.45%	.991
GWA41 Staffing organizational units	.85		
GWA14 Scheduling work and activities	.84		
SK44 Management of financial resources	.82		
KN6 Personnel and Human Resources	.81		
GWA40 Performing administrative activities	.77		
SK45 Management of material resources	.76		
GWA27 Communicating with supervisors, peers or subordinates	.68		
KN3 Economics and Accounting	.67		
SK4 Speaking	.62		
GWA28 Communicating with persons outside the organizations	.59		
GWA5 Estimating the characteristics of materials, products, events or information	.58		
KN23 Education and Training	.57		
SK3 Writing	.56		
GWA22 Implementing ideas, programs, systems or products	.54		
KN4 Sales and Marketing	.49		
GWA25 Documenting/recording information	.48		
KN32 Communications and Media	.42		
KN14 Mathematics	.40		
GWA17 Handling and moving objects	-.41		

Table 9 (2 of 3)

CONCRETE LEVEL: Factor Title and Variables	Factor Loading	% Variance	Cong. Coeff.
<u>3. Information Processing and Communications</u>			.990
GWA19 Interacting with computers	.81		
KN9 Computers and Electronics	.80		
GWA25 Documenting/recording information	.71		
SK3 Writing	.67		
SK29 Programming	.63		
KN14 Mathematics	.58		
GWA27 Communicating with supervisors, peers or subordinates	.56		
KN2 Clerical	.53		
SK4 Speaking	.52		
KN32 Communications and Media	.51		
KN31 Telecommunications	.47		
GWA28 Communicating with persons outside the organizations	.46		
GWA40 Performing administrative activities	.44		
GWA22 Implementing ideas, programs, systems or products	.41		
GWA5 Estimating the characteristics of materials, products, events or information	.40		
GWA17 Handling and moving objects	-.49		
GWA16 Performing general physical activities	-.61		
<u>4. Design and Drafting</u>		7.35%	.988
KN11 Design	.82		
GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	.74		
KN12 Building and Construction	.62		
KN10 Engineering and Technology	.61		
SK27 Equipment selection	.52		
SK33 Product inspection	.42		
<u>5. Biology</u>		5.28%	.981
KN17 Biology	.87		
KN21 Medicine and Dentistry	.74		
KN16 Chemistry	.70		
<u>6. Transportation and Safety</u>		4.96%	.984
KN33 Transportation	.81		
GWA20 Operating vehicles, mechanized devices, or equipment	.71		
KN20 Geography	.67		
KN29 Public Safety and Security	.60		

Table 9 (3 of 3)

CONCRETE LEVEL: Factor Title and Variables		Factor Loading	% Variance	Cong. Coeff.
<u>7. Customer Service</u>			2.71%	.864
KN5	Customer and Personal Service	.55		
KN4	Sales and Marketing	.42		
<u>8. Production and Processing</u>			2.34%	.878
KN7	Production and Processing	.58		

Table 10 (1 of 2) (Concrete Importance) Nine-Factor Solution: Factor Titles, Salient Concrete Dimensions, Percentages of Variance Explained, and Coefficients of Congruence

CONCRETE IMPORTANCE: Factor Title and Variables		Factor Loading	% Variance	Cong. Coeff.
<u>1. Equipment Maintenance and Repair</u>			15.34%	.995
SK35	Troubleshooting	.90		
SK36	Repairing	.87		
SK34	Equipment maintenance	.84		
GWA23	Repairing and maintaining mechanical equipment	.79		
SK28	Installation	.74		
KN13	Mechanical	.73		
SK30	Testing	.72		
GWA24	Repairing and maintaining electronic equipment	.71		
GWA4	Inspecting equipment, structures or materials	.68		
SK31	Operation monitoring	.64		
KN10	Engineering and Technology	.56		
SK27	Equipment selection	.54		
SK32	Operation and control	.48		
GWA18	Controlling machines and processes	.42		
<u>2. Management</u>			12.33%	.996
GWA41	Staffing organizational units	.82		
KN6	Personnel and Human Resources	.81		
GWA14	Scheduling work and activities	.79		
SK44	Management of financial resources	.74		
SK45	Management of material resources	.71		
GWA27	Communicating with supervisors, peers or subordinates	.60		
GWA40	Performing administrative activities	.55		
SK4	Speaking	.54		
KN23	Education and Training	.53		
KN3	Economics and Accounting	.52		
GWA5	Estimating the characteristics of materials, products, events or information	.50		
GWA28	Communicating with persons outside the organizations	.45		
SK3	Writing	.43		
GWA22	Implementing ideas, programs, systems or products	.41		
KN4	Sales and Marketing	.40		
GWA17	Handling and moving objects	-.44		
<u>3. Information Processing and Communications</u>			11.98%	.986
KN9	Computers and Electronics	.82		
GWA19	Interacting with computers	.80		
GWA25	Documenting/recording information	.69		
SK3	Writing	.67		
KN2	Clerical	.61		

Table 10 (2 of 2)

CONCRETE IMPORTANCE: Factor Title and Variables		Factor Loading	% Variance	Cong. Coeff.
SK29	Programming	.53		
GWA40	Performing administrative activities	.52		
KN14	Mathematics	.52		
KN32	Communications and Media	.51		
KN31	Telecommunications	.51		
GWA27	Communicating with supervisors, peers or subordinates	.47		
SK4	Speaking	.47		
GWA28	Communicating with persons outside the organizations	.40		
KN12	Building and Construction	-.40		
GWA17	Handling and moving objects	-.43		
GWA16	Performing general physical activities	-.62		
<u>4. Design and Drafting</u>				.990
KN11	Design	.82		
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	.79		
KN10	Engineering and Technology	.55		
KN12	Building and Construction	.50		
SK27	Equipment selection	.47		
GWA22	Implementing ideas, programs, systems or products	.40		
<u>5. Transportation and Safety</u>				4.94%
KN33	Transportation	.80		
GWA20	Operating vehicles, mechanized devices, or equipment	.70		
KN20	Geography	.67		
KN29	Public Safety and Security	.58		
<u>6. Equipment/Processes Operation and Control</u>				4.86%
SK32	Operation and control	.65		
GWA18	Controlling machines and processes	.63		
KN7	Production and Processing	.52		
SK31	Operation monitoring	.52		
GWA17	Handling and moving objects	.42		
GWA28	Communicating with persons outside the organizations	-.41		
<u>7. Biology</u>				4.50%
KN17	Biology	.83		
KN21	Medicine and Dentistry	.67		
KN16	Chemistry	.67		
<u>8. Customer Service</u>				2.81%
KN5	Customer and Personal Service	.61		
<u>9. Economics and Accounting</u>				2.56%
KN3	Economics and Accounting	.51		
KN14	Mathematics	.43		

DISCUSSION

The results of this study should prove useful in explaining the factorial structures underlying the O*NET descriptors. The analyses produced meaningful factors that were shown to be replicable between subsamples. The results are discussed in more detail in the following sections.

Knowledge

The eight-factor solution determined for the Knowledge, Level scale and the nine-factor solution determined for the Importance scale were highly similar. The common eight factors were: Management and Human Resources, Applied Physical Sciences and Technology, Humanities and Social Sciences, Health Services, Information Processing and Communications, Transportation and Safety, Biology and Fine Arts. With the Importance scale one additional factor emerged, Accounting and Sales. The eight Level factors seemed to account for more variance than the nine Importance factors, 65.26% and 60.66%, respectively. The average congruence coefficient for the Importance scale overall (i.e. including all of the factors) was slightly higher than the Level scale. Yet, comparisons of the mean coefficients for the eight matched factors yielded a slightly higher coefficient for the Level scale. The factor structures for both solutions were replicable.

Skills

Between the Skill, Level and the Importance ratings, there were five common factors: Thinking and Problem-Solving, Management, Equipment Maintenance and Repair, Service, and Technical Design. Mathematics and Science and Equipment Operation and Monitoring were two additional factors that were identified with the Importance scale but not with the Level scale. As with the Knowledge factors, the Level scales seemed to explain more of the variance than the Importance scales. Interestingly, most of the factors were replicable in the subsamples with coefficients around .90 except for the Technical Design factor. With the Level scale, Technical Design had a congruence coefficient of .732 and with the Importance scale the coefficient was

.882. Comparisons of the stability of the Importance factors with the Level factors showed that the Importance factors had a higher mean coefficient overall (i.e. including all of the factors) and a higher coefficient for the five common factors, although the difference in the means between the two scales was small.

Generalized Work Activities

The six-factor solution determined for the GWA, Level scales and the seven-factor solution determined for the Importance scales shared five common factors: Analyzing and Problem-Solving, Managing Others, Interacting with Others, Repairing and Maintaining Equipment, and Drafting and Designing. For the Level scale, a distinctive factor, Teaching Others, emerged and with the Importance scales, two unique factors, Operating Equipment and Controlling Resources, were identified. Again, the Level factors explained slightly more variance, 77.63%, than the Importance factors, 76.65%. All of the Level and Importance factors seem to be very stable according to the subsample congruence coefficients. Further examination of the mean coefficients showed that the overall mean was higher for the Level scale. However, for the five common factors, the Importance scale had a slightly higher coefficient.

Abstract Descriptors

The five-factor solution for Abstract, Level and the seven-factor solution for Importance had five factors in common also. These factors were: Analysis and Problem-Solving, Management and Development, Visioning and Evaluation, Sales and Marketing, and Service. The two distinguishing factors with the Importance scales were Thinking Creatively and Monitoring Processes. The Level factor solution with five identifiable factors accounted for 83.52% of the variance and the seven-factor solution for the Importance scale accounted for 78.85% of the variance. The five common factors seemed to have very strong replicable factor structures, with all but one coefficient of .99. Unlike the common factors between the two scales, the factor, Thinking Creatively, did not appear to be a strong factor in the subsample replication with a low

congruence coefficient of .535. The comparison between the two scales overall showed a higher level of stability for the Level scale. However, a comparison of the five common factors showed little or no difference in congruence between the two scales.

Concrete Descriptors

The eight-factor solution for Concrete Level and the nine-factor solution for Importance were somewhat similar. The seven factors common to both were: Equipment Maintenance and Repair, Management, Information Processing and Communications, Design and Drafting, Biology, Transportation and Safety, and Customer Service. In addition to these seven, a Production and Processing factor emerged with the Level scale. In total, the Level factors explained 56.85% of the variance. With the Importance scale, two additional factors emerged, Equipment/Processes Operation and Control, and Economics and Accounting. This solution accounted for 59.32% of the variance. The Importance scale showed a slightly higher level of replication than the Level scales in the overall comparison and with the common factor comparison.

Coefficient Alphas

Coefficient alpha reliability estimates for the abstract-concrete ratings all exceeded .93, with the exception of the Knowledge domain (.82). These coefficients are presented in Table 11. This substantial level of interrater agreement provides more confidence in the concrete-abstract ratings.

Abstract, Concrete Ratings

Since abilities are assumed to be more difficult to rate because they are seemingly more abstract than the other O*NET domains, the results of the present study were surprising. In the present research, when abilities were rated on a six-point scale (1=very abstract and 6=very concrete), the overall mean (3.99) of the abilities domain was considered to be concrete (a mean of *3.80 and above*) rather than abstract. Knowledges and GWAs were considered to be concrete also with overall means of 4.12 and 3.84, respectively. On the other hand, the skills domain fell into the

abstract category with an overall mean rating of 3.43. These findings are somewhat inconsistent with the investigators' a priori assumption, and that of a previous panel of consultants, that the ability descriptors were more abstract than those of the knowledges, skills and GWAs.

Table 11 Results of O*NET Abstract^a and Concrete^b Ratings

Domain	Mean	STDEV	Coefficient Alpha
Knowledges	4.12	1.06	.817
Skills	3.43	.98	.955
GWAs	3.84	.91	.956
Abilities	3.99	1.04	.948
Overall incl. Abilities(K,S,A,GWAs)	3.83	.99	.940
Overall excl. Abilities (K,S,GWAs)	3.76	.98	.942
STDEV (K,S,A, GWAs)		.18	

^aAbstract= mean rating 3.79 and below

^bConcrete=mean rating 3.80 and above

Conclusion

The importance of this study is that it contributes information regarding the underlying factor structure of O*NET descriptors. Specifically, the analyses of the Level and Importance scales revealed that the Level scales accounted for more variance, but the Importance scales seem to produce more differentiated factor structures. Factor stability for the Level and Importance scales produced similar results in all of the domains. Moreover, there was little difference with either scale in factorial replicability between the abstract and concrete categories. This finding is contrary to expectations that factorial stability would be higher for concrete descriptors than for abstract descriptors.

Since no substantial differences in replication were found between the Level and Importance factors, the set of factors chosen for future research will depend on the purposes of the research. For example, the Level factors might be useful in job-component validity or job evaluation, whereas the Importance factors might provide a framework for training of transferable skills and knowledges. In sum, the present study has accomplished its main goal: to examine the

underlying factor structure of the O*NET descriptors. The resultant factors will be used as “job components” in subsequent research efforts to policy capture ability requirements (Wilson, 2002) and to numerically classify jobs (Levine, 2002).

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Appendix A.

Abstract and Concrete Survey of Occupational Descriptors

INSTRUCTIONS FOR RATING OCCUPATIONAL DESCRIPTORS

The U.S. Department of Labor’s Occupational Information Network (O*NET) contains ratings of occupations on a large number of descriptors that are classified into various categories called “domains.” The O*NET descriptors vary in terms of their degree of concreteness or abstractness.

In comparison to abstract descriptors, concrete descriptors tend to be more content-specific, referring to material things, tangible subject matter, actions, events, outcomes, etc. They are more closely related to our immediate experience, easier to understand, and more likely to evoke visual images when we read them. For those reasons, they should be easier for analysts or incumbents to use in rating jobs. An example of a concrete descriptor is the task statement, “Drives truck to deliver such items as food, medical supplies, or newspapers.”

Abstract descriptors, on the other hand, tend to be disassociated from material content, expressing qualities or processes apart from tangible things or events. They lack embodiment and are further removed than concrete descriptors from our immediate experience. Abstract descriptors are usually less specific in detail and more general in scope. They are more difficult to understand and less likely to evoke visual images when we read them. For those reasons, they are likely to be more difficult for analysts or incumbents to use in rating jobs. An example of an abstract descriptor is the ability-requirement statement, “Inductive Reasoning—The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).”

Five of the O*NET descriptor domains include *Skills, Generalized Work Activities, Abilities, Knowledge, and Work Styles*. We would like for you to rate the descriptors in these domains on their degree of abstractness or concreteness. You will be using the following 6-point scale to rate the descriptors:

Very Abstract	Abstract	Somewhat Abstract	Somewhat Concrete	Concrete	Very Concrete
1	2	3	4	5	6

This scale will be at the top of each page for your reference.

Step 1. The descriptors are numbered from 1 to 88 (Section A) and from 1-102 (Section B). Before you begin rating, **please review the entire list of descriptors** to get a feel of their potential range on the Abstractness-Concreteness dimension.

Step 2. After you’ve reviewed the entire list of descriptors, begin rating, starting with Section A, Item 1. Please use the enclosed Opscan answer sheets, entering each rating in the numbered item space that corresponds to the number of the descriptor in question. Items 1-88 (Section A) will be rated on one Opscan sheet, entitled **Section A**, and items 1-102 (Section B) will be rated on a separate Opscan sheet, entitled **Section B**. If you have any questions, please feel free to call me @ 834-4809. Thank you, Carri Clark

Very Abstract Abstract Somewhat Abstract Somewhat Concrete Concrete Very Concrete
 1 2 3 4 5 6

SECTION A (items 1-88)

Please use the 6-point scale above to rate the following descriptors.

SKILLS

1. Reading Comprehension	Understanding written sentences and paragraphs.
2. Listening/Questioning	Listening to what other people are saying and asking questions as appropriate.
3. Writing	Communicating with others in writing.
4. Speaking	Communicating with others by talking to them.
5. Mathematics	Using mathematics to solve problems.
6. Science	Using scientific procedures and principles to solve problems.
7. Critical Thinking	Using logic and reasoning to identify the strengths and weaknesses in arguments.
8. Active Learning	Working with new material or information to lay out its implications.
9. Learning Strategies	Identifying different approaches to be used in learning new things.
10. Monitoring	Assessing how well one is doing and changing approach to improve performance.
11. Social Perceptiveness	Being aware of others' reactions and understanding why they react as they do.
12. Coordination	Adjusting actions in relation to others' actions.
13. Persuasion	Persuading others to look at things differently.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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14. Negotiation	Getting others to agree to an approach through negotiations.
15. Coaching	Teaching others how to do something.
16. Service Orientation	Trying to help others get something done.
17. Problem Identification	Identifying the nature of problems and determining how to go about solving them.
18. Information Gathering	Knowing how to find information and identifying essential information needed in problem solving.
19. Information Organization	Organizing information using relevant concepts.
20. Synthesis/Reorganization	Reorganizing information to get a better approach to problems or tasks.
21. Idea Generation	Generating a number of different approaches to problems.
22. Idea Evaluation	Evaluating proposed problem solutions for workability or likely success.
23. Implementation Planning	Developing plans to achieve goals and implementing plans in a timely fashion.
24. Solution Appraisal	Observing and evaluating the outcomes of a problem solution to identify lessons learned or redirect efforts.
25. Operations Analysis	Analyzing needs and product requirements to determine required technology and tools.
26. Technology Design	Generating or adapting equipment and technology to serve user needs.

27. Components Selection	Determining the kind of tools and equipment needed to do a job.
28. Installation	Installing equipment, machines, wiring, or programs to meet specifications.
29. Programming	Writing computer programs for various purposes.
30. Testing	Conducting tests to determine whether machines or software are operating as expected.
31. Operations Monitoring	Watching gauges, dials, or other indicators to make sure a machine is working properly.
32. Operation and Control	Controlling operations of equipment or systems.
33. Product Inspection	Inspecting and evaluating the quality of products.
34. Equipment Maintenance	Performing routine maintenance and determining when and what kind of maintenance is needed.
35. Troubleshooting	Determining what is causing operating error and deciding what to do about it.
36. Repairing	Repairing machines or systems using the needed tools.
37. Visioning	Having a clear idea of how a system should work under Ideal conditions.
38. Systems Perception	Determining when important changes have occurred in a system or are likely to occur.
39. Identifying Downstream Consequences	Determining the long-term consequences of a change in operations.
40. Identification of key Causes	Identifying the changes in operations to achieve a goal.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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41. Judgment and Decision Making	Considering the short- and long-term consequences of actions with respect to many different outcomes.
42. Objective Evaluation	Looking at many indicators of system performance, taking into account their accuracy.
43. Time Management	Managing one's own time and the time of others.
44. Management of Financial Resources	Determining how money will be spent to get the work done, and accounting for these expenditures.
45. Management of Material Resources	Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
46. Management of Personnel Resources	Motivating, developing, and directing people as they work, identifying the best people for the job.

GENERALIZED WORK ACTIVITIES

47. Getting Information Needed to do the Job	Observing, receiving, and otherwise obtaining information from all relevant sources.
48. Identifying Objects, Actions, and Events	Identifying information received by making estimates or categorizations, recognizing differences or similarities, or sensing changes in circumstances or events.
49. Monitoring Processes, Materials, or Surroundings	Monitoring and reviewing information from materials, events, or the environment to detect problems or to find out when things are finished.
50. Inspecting Equipment, Structures, or Materials	Inspecting or diagnosing equipment, structures, or materials to identify the cause of errors or other problems or defects.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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51. Estimating the Characteristics of Materials, Products, Events, or Information	Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity.
52. Judging the Qualities of Objects, Services, or People	Making judgments or assessing the value, importance, or quality of things or people.
53. Evaluating Information for Compliance to Standards	Evaluating information against a set of standards and verifying that it is correct.
54. Processing Information	Compiling, coding, categorizing, calculating, tabulating, auditing, verifying or processing information or data.
55. Analyzing Data or Information	Identifying underlying principles, reasons, or facts by breaking down information or data into separate parts.
56. Making Decisions and Solving Problems	Combining, evaluating, and reasoning with information and data to make decisions and solve problems. These processes involve making decisions about the relative importance of information and choosing the best solution.
57. Thinking Creatively	Originating, inventing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.
58. Updating and Using Job-Relevant Knowledge	Keeping up-to-date technically and knowing one's own jobs' and related jobs' functions.
59. Developing Objectives and Strategies	Establishing long-range objectives and specifying the strategies and actions to achieve them.
60. Scheduling Work and Activities	Scheduling events, programs, and activities, as well as the work of others.
61. Organizing, Planning, and Prioritizing Work	Developing plans to accomplish work, and prioritizing and organizing one's own work.

62. Performing General Physical Activities	Performing physical activities that require moving one's whole body, such as in climbing, lifting, balancing, walking, stooping, where the activities often also require considerable use of the arms and legs, such as in the physical handling of materials.
63. Handling and Moving Objects	Using one's own hands and arms in handling, installing, forming, positioning, and moving materials, or in manipulating things, including the use of keyboards.
64. Controlling Machines and Processes	Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
65. Interacting with Computers	Controlling computer functions by using programs, setting up functions, writing software, or otherwise communicating with computer systems.
66. Operating Vehicles, Mechanized Devices, or Equipment	Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
67. Drafting, Laying-Out and Specifying Technical Devices, Parts, and Equipment	Providing documentation, detailed instructions, drawings, or specifications to inform others about how devices, parts, equipment, or structures are to be fabricated, constructed, assembled, modified, maintained, or used.
68. Implementing ideas, programs, systems or products	Conducting or carrying out work procedures and activities in accord with one's own ideas or information provided through directions/instructions for purposes of installing, modifying, preparing, delivering, constructing, integrating, finishing, or completing programs, systems, structures, or products.
69. Repairing and Maintaining Mechanical Equipment	Fixing, servicing, aligning, setting up, adjusting and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
70. Repairing and Maintaining Electronic Equipment	Fixing, servicing, adjusting, regulating, calibrating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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71. Documenting/Recording Information	Entering, transcribing, recording, storing, or maintaining information in either written form or by electronic/magnetic recording.
72. Interpreting the Meaning of Information for Others	Translating or explaining what information means and how it can be understood or used to support responses or feedback to others.
73. Communicating with Supervisors, Peers, or Subordinates	Providing information to supervisors, coworkers, and subordinates by telephone, in written form, e-mail, or in person.
74. Communicating with People Outside the Organization	Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged by telephone, in written form, email or in person.
75. Establishing and Maintaining Interpersonal Relationships	Developing constructive and cooperative working relationships with others.
76. Assisting and Caring for Others	Providing personal assistance or personal care to others.
77. Selling or Influencing Others	Convincing others to buy merchandise/goods or to otherwise change their minds or actions.
78. Resolving Conflicts and Negotiating with Others	Handling complaints, arbitrating disputes, and resolving grievances.
79. Performing for or Working Directly with the Public	Performing for people or dealing directly with the public including serving customers in restaurants and stores, and receiving clients or guests.
80. Coordinating the Work and Activities of Others	Coordinating members of a group to accomplish tasks.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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81. Developing and Building Teams	Encouraging and building mutual trust, respect, and cooperation among team members.
82. Teaching Others	Identifying educational needs and developing (or having others develop) formal training programs or classes.
83. Guiding, Directing, and Motivating Subordinates	Providing guidance and direction to subordinates, including setting performance standards and monitoring subordinates.
84. Coaching and Developing Others	Identifying the developmental needs of others and coaching or instructing others to improve their knowledge or skills.
85. Providing Consultation and Advice to Others	Providing consultation and expert advice to management or other groups on technical, systems-, or process-related topics.
86. Performing Administrative Activities	Approving requests, handling paperwork, and performing day-to-day administrative tasks.
87. Staffing Organizational Units	Recruiting, interviewing, selecting, hiring, and promoting employees in the organization.
88. Monitoring and Controlling Resources	Monitoring and controlling resources and overseeing the spending of money.

SECTION B (items 1-102)

Abilities

1. Oral Comprehension	The ability to listen to and understand information and ideas presented through spoken words and sentences.
2. Written Comprehension	The ability to read and understand information and ideas presented in writing.

3. Oral Expression	The ability to communicate information and ideas in speaking so others will understand.
4. Written Expression	The ability to communicate information and ideas in writing so others will understand.
5. Fluency of Ideas	The ability to come up with a number of ideas about a given topic (the <i>number</i> of ideas is important, <u>not</u> their quality, correctness, or creativity of the ideas).
6. Originality	The ability to come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem.
7. Problem Sensitivity	The ability to tell when something is wrong or is likely to go wrong. It does <u>not</u> involve solving the problem, only recognizing there is a problem.
8. Deductive Reasoning	The ability to apply general rules to specific problems to produce logical answers. It involves deciding if an answer makes sense.
9. Inductive Reasoning	The ability to combine separate pieces of information, or specific answers to problems, to form general rules or conclusions. It includes coming up with a logical explanation for why a series of seemingly unrelated events occur together.
10. Information Ordering	The ability to correctly follow a given rule or set of rules in order to arrange things or actions in a certain order. The things or actions can include numbers, letters, words, pictures, procedures, sentences and mathematical or logical operations.
11. Category Flexibility	The ability to produce many rules so that each rule tells how to group (or combine) a set of things in a different way.
12. Mathematical Reasoning	The ability to understand and organize a problem and then to select a mathematical method or formula to solve the problem.

Very Abstract	Abstract	Somewhat Abstract	Somewhat Concrete	Concrete	Very Concrete
1	2	3	4	5	6

65

13. Number Facility

The ability to add, subtract, multiply, or divide quickly and correctly.

14. Memorization

The ability to remember information such as words, numbers, pictures, and procedures.

15. Speed of Closure

The ability to quickly make sense of information that seems to be without meaning or organization. It involves quickly combining and organizing different pieces of information into a meaningful pattern.

16. Flexibility of Closure

The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.

17. Perceptual Speed

The ability to quickly and accurately compare letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.

18. Spatial Orientation

The ability to know your location in relation to the environment or to know where other objects are in relation to you.

19. Visualization

The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.

20. Selective Attention

The ability to concentrate and not be distracted while performing a task over a period of time.

21. Time Sharing

The ability to efficiently shift back and forth between two or more activities or sources of information (such as speech, sounds, touch, or other sources).

22. Arm-Hand Steadiness

The ability to keep the hand and arm steady while making an arm movement or while holding the arm and hand in one position.

23. Manual Dexterity

The ability to quickly make coordinated movements of one hand, a hand together with the arm, or two hands to grasp, manipulate, or assemble objects.

Very Abstract	Abstract	Somewhat Abstract	Somewhat Concrete	Concrete	Very Concrete
1	2	3	4	5	6

24. Finger Dexterity	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
25. Control Precision	The ability to quickly and repeatedly make precise adjustments in moving the controls of a machine or a vehicle to exact positions.
26. Multi-limb Coordination	The ability to coordinate movements of two or more limbs together (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does <u>not</u> involve performing the activities while the whole body is in motion.
27. Response Orientation	The ability to choose quickly between <i>two or more movements</i> in response to <i>two or more different signals</i> (lights, sounds, pictures, etc). It includes the <i>speed</i> with which the correct response is <i>started</i> with the hand, foot, or other body parts.
28. Rate Control	The ability to time the adjustments of a movement or equipment control in anticipation of changes in the speed and/or direction of a continuously moving object or scene.
29. Reaction Time	The ability to quickly respond (with the hand, finger, or foot) to one signal (sound, light, picture) when it appears.
30. Wrist-Finger Dexterity	The ability to make <i>fast, simple, repeated movements</i> of the <i>fingers, hands, and wrists</i> .
31. Speed of Limb Movement	The ability to <i>quickly</i> move the arms and legs.
32. Static Strength	The ability to exert maximum muscle force to lift, push, pull, or carry objects.
33. Explosive Strength	The ability to use short bursts of muscle force to propel oneself (as in jumping or sprinting) or to throw an object.
34. Dynamic Strength	The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.

35. Trunk Strength	The ability to use one's abdominal and lower back muscles to support part of the body repeatedly or continuously over time without "giving out" or fatiguing.
36. Stamina	The ability to exert one's self physically over long periods of time without getting winded or out of breath.
37. Extent Flexibility	The ability to bend, stretch, twist, or reach out with the body, arms, and/or legs.
38. Dynamic Flexibility	The ability to quickly and repeatedly bend, stretch, twist, or reach out with the body, arms, and/or legs.
39. Gross Body Coordination	The ability to coordinate the <i>movement of the arms, legs, and torso together</i> in activities where the whole body is in motion.
40. Gross Body Equilibrium	The ability to keep or regain one's body balance or stay upright when in an unstable position.
41. Near Vision	The ability to see details at a close range (within a few feet of the observer).
42. Far Vision	The ability to see details at a distance.
43. Visual Color Discrimination	The ability to match or detect differences between colors, including shades of color and brightness.
44. Night Vision	The ability to see under low-light conditions.
45. Peripheral Vision	The ability to see objects or movement of objects to one's side when the eyes are focused forward.
46. Depth Perception	The ability to judge which of several objects is closer or farther away from the observer, or to judge the distance between an object and an observer.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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47. Glare Sensitivity

The ability to see objects in the presence of a glare or bright lighting.

48. Hearing Sensitivity

The ability to detect or tell the differences between sounds that vary over broad ranges of pitch and loudness.

49. Auditory Attention

The ability to focus on a single source of auditory (hearing) information in the presence of other distracting sounds.

50. Sound Localization

The ability to tell the direction from which a sound originated.

51. Speech Recognition

The ability to identify and understand the speech of another person.

52. Speech Clarity

The ability to speak clearly so that it is understandable to a listener.

Knowledges**53. Administration and Management**

Knowledge of planning, coordination, and execution of business functions, resource allocation, and production.

54. Clerical

Knowledge of typing, filing, entering data, taking shorthand, and using and completing forms.

55. Economics and Accounting

Knowledge of economic and accounting principles and practices, the financial markets, banking, and the analysis and reporting of financial data.

56. Sales and Marketing

Knowledge of showing, promoting, and selling products or services.

Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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57. Customer and Personal Service	Knowledge of identifying and satisfying customer needs, including provision of services such as cleaning, personal care, child care, travel, lodging, and food preparation.
58. Personnel and Human Resources	Knowledge of hiring, benefits, labor relations, negotiation, and federal, state, and local employment regulations.
59. Production and Processing	Knowledge of inputs, outputs, raw materials, waste, quality control, costs, and techniques for maximizing the manufacture and distribution of goods.
60. Food Production	Knowledge of planning, growing, and harvesting of food for consumption using appropriate equipment and techniques.
61. Computers and Electronics	Knowledge of electric circuit boards, processors, chips, and computer hardware and software, including applications and programming.
62. Engineering and Technology	Knowledge of equipment, tools, mechanical devices, and their uses to produce motion, light, power, technology, and other applications.
63. Design	Knowledge of developing, producing, understanding and using plans, blueprints, and models, including the use of tools and instruments to produce precision technical drawings.
64. Building and Construction	Knowledge of materials, methods, and the appropriate tools to construct objects, structures, and buildings.
65. Mechanical	Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
66. Mathematics	Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
67. Physics	Knowledge and prediction of physical principles, laws, and applications including air, water, material dynamics, light, atomic principles, heat, electric theory, earth formations, and meteorological and related natural phenomena.

Very Abstract **Abstract** **Somewhat Abstract** **Somewhat Concrete** **Concrete** **Very Concrete**
 1 2 3 4 5 6

68. Chemistry	Knowledge of chemicals and their uses, interactions, dangers, production, and disposal.
69. Biology	Knowledge of plant and animal living tissue, cells, organisms, and entities, including their functions, interdependencies and interactions with each other and the environment.
70. Psychology	Knowledge of human behavior and performance, mental processes, and the assessment and treatment of behavioral and affective disorders.
71. Sociology and Anthropology	Knowledge of group behavior and dynamics, societal trends and influences, cultures and their history, migrations, ethnicity, and origins.
72. Geography	Knowledge of geographical locations, their relationships, and characteristics.
73. Medicine and Dentistry	Knowledge of the diagnosis and treatment of injuries, diseases, and deformities, including preventive health-care measures.
74. Therapy and Counseling	Knowledge of diagnosis and treatment of physical and mental ailments, and career guidance.
75. Education and Training	Knowledge of teaching, training, research, making presentations, lecturing, testing, and other instructional methods.
76. English Language	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
77. Foreign Language	Knowledge of the structure and content of a foreign (non-English) language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.

Very Abstract	Abstract	Somewhat Abstract	Somewhat Concrete	Concrete	Very Concrete
1	2	3	4	5	6

78. Fine Arts	Knowledge of theory and techniques required to produce, compose, and perform works of music, dance, visual arts, drama, and sculpture.
79. History and Archeology	Knowledge of past historical events and their causes, indicators, and impact on civilizations and cultures.
80. Philosophy	Knowledge of different philosophical systems including their basic principles, values, ethics, ways of thinking, customs and practices, and their impact on human culture.
81. Public Safety and Security	Knowledge of weaponry, public safety, and security operations, rules, regulations, precautions, prevention, and the protection of people, data, and property.
82. Law, Government and Jurisprudence	Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
83. Telecommunications	Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.
84. Communications and Media	Knowledge of the production, communication, and dissemination of information and ideas to inform and entertain via written, oral, and visual media.
85. Transportation	Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including costs and limits.

WORK STYLES

86. Achievement/Effort	Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.
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Very Abstract 1	Abstract 2	Somewhat Abstract 3	Somewhat Concrete 4	Concrete 5	Very Concrete 6
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87. Persistence	Job requires persistence in the face of obstacles.
88. Initiative	Job requires a willingness to take on responsibilities and challenges.
89. Energy	Job requires the energy and stamina to accomplish work tasks.
90. Leadership	Job requires a willingness to lead, take charge, and offer opinions and direction.
91. Cooperation	Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.
92. Concern for Others	Job requires being sensitive to others' needs and feelings, and being understanding and helpful to others on the job.
93. Social Orientation	Job requires preferring to work with others rather than alone, and being personally connected with others on the job.
94. Self-Control	Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.
95. Stress Tolerance	Job requires accepting criticism and dealing calmly and effectively with high-stress situations.
96. Adaptability/Flexibility	Job requires being open to change (positive or negative) and to considerable variety in the workplace.
97. Dependability	Job requires being reliable, responsible, and dependable, and fulfilling obligations.
98. Attention to Detail	Job requires being careful about details and thorough in completing tasks.
99. Integrity	Job requires being honest and ethical.

Very Abstract 1 Abstract 2 Somewhat Abstract 3 Somewhat Concrete 4 Concrete 5 Very Concrete 6

100. Independence

Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.

101. Innovation

Job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems.

102. Analytical Thinking

Job requires analyzing information and using logic to address work-related issues and problems.

**You are finished!!
Thank you so much for your time**

Appendix B.

Abstract and Concrete Variables Included In The Data Set

ABSTRACT DESCRIPTORS

GWA1	Getting information needed to do job
GWA2	Identifying objects, actions, and events
GWA3	Monitoring processes, materials, or surroundings
GWA9	Analyzing data or information
GWA10	Making decisions and solving problems
GWA11	Thinking creatively
GWA12	Updating and using job-relevant knowledge
GWA13	Developing objectives and strategies
GWA15	Organizing, planning, and prioritizing work
GWA26	Interpreting the meaning of information for others
GWA29	Establishing and maintaining interpersonal relationships
GWA30	Assisting and caring for others
GWA31	Selling or influencing others
GWA32	Resolving conflicts and negotiating with others
GWA34	Coordinating the work and activities of others
GWA35	Developing and building teams
GWA36	Teaching others
GWA37	Guiding, directing and motivating subordinates
GWA38	Coaching and developing others
GWA39	Providing consultation and advice to others
GWA42	Monitoring and controlling resources
KN1	Administration and Management
KN22	Therapy and Counseling
SK2	Active listening
SK5	Mathematics
SK6	Science
SK7	Critical thinking
SK8	Active learning
SK9	Learning strategies
SK10	Monitoring
SK11	Social Perceptiveness
SK12	Coordination
SK13	Persuasion
SK14	Negotiation
SK15	Instructing
SK17	Problem identification
SK18	Information gathering
SK19	Information organization
SK20	Synthesis/Reorganization
SK22	Idea evaluation
SK24	Solution appraisal
SK37	Visioning
SK38	Systems perceptions
SK39	Identification of downstream consequences
SK40	Identification of key causes
SK41	Judgment and decision making
SK42	Systems evaluation
SK43	Time management
SK46	Management of personnel resources

CONCRETE DESCRIPTORS

GWA4	Inspecting equipment, structures or materials Estimating the characteristics of materials, products, events or information
GWA5	
GWA14	Scheduling work and activities
GWA16	Performing general physical activities
GWA17	Handling and moving objects
GWA18	Controlling machines and processes
GWA19	Interacting with computers
GWA20	Operating vehicles, mechanized devices, or equipment Drafting, laying-out, and specifying technical devices, parts and equipment
GWA21	
GWA22	Implementing ideas, programs, systems or products
GWA23	Repairing and maintaining mechanical equipment
GWA24	Repairing and maintaining electronic equipment
GWA25	Documenting/recording information
GWA27	Communicating with supervisors, peers or subordinates
GWA28	Communicating with persons outside the organizations
GWA40	Performing administrative activities
GWA41	Staffing organizational units
KN2	Clerical
KN3	Economics and Accounting
KN4	Sales and Marketing
KN5	Customer and Personal Service
KN6	Personnel and Human Resources
KN7	Production and Processing
KN8	Food Production
KN9	Computers and Electronics
KN10	Engineering and Technology
KN11	Design
KN12	Building and Construction
KN13	Mechanical
KN14	Mathematics
KN16	Chemistry
KN17	Biology
KN20	Geography
KN21	Medicine and Dentistry
KN23	Education and Training
KN29	Public Safety and Security
KN31	Telecommunications
KN32	Communications and Media
KN33	Transportation
SK3	Writing
SK4	Speaking
SK27	Equipment selection
SK28	Installation
SK29	Programming
SK30	Testing
SK31	Operation monitoring
SK32	Operation and control
SK33	Product inspection
SK34	Equipment maintenance

SK35	Troubleshooting
SK36	Repairing
SK44	Management of financial resources
SK45	Management of material resources

Appendix C.

Abstract and Concrete Variables Excluded From The Data Set

Rating	Variable	Mean	STDEV
abstract	SK21 Idea generation	2.82	1.19
abstract	SK23 Implentation planning	3.24	1.20
abstract	GWA6 Judging the qualities of objects, services, or persons	2.29	1.21
abstract	SK26 Technical design	3.65	1.27
abstract	KN19 Sociology and Anthropology	3.41	1.28
abstract	SK16 Service orientation	3.47	1.28
abstract	SK1 Reading comprehension	3.24	1.30
abstract	KN18 Psychology	3.29	1.31
abstract	KN26 Fine Arts	3.41	1.37
abstract	KN15 Physics	3.59	1.37
abstract	GWA8 Processing information	3.76	1.39
abstract	SK25 Operations analysis	3.41	1.42
abstract	KN28 Philosophy	2.76	1.52
concrete	KN24 English Language	4.53	1.18
concrete	GWA33 Performing for or working directly with the public	3.94	1.20
concrete	KN25 Foreign Language	4.41	1.28
concrete	KN27 History and Archeology	4.06	1.30
concrete	KN30 Legal, Government and Jurisprudence	4.29	1.36
concrete	GWA7 Evaluating information for compliance to standards	3.82	1.42

Appendix D.

Principal Component Analyses:
Correlations, Eigenvalues and Factor Loadings

KN28	Philosophy			0.48979	0.46813	0.42590	0.12837	0.67473	1.00000	0.20721
0.38690	0.16143	0.42412	0.08140							
KN29	Public Safety and Security			0.26323	0.18688	0.18528	-0.20092	0.11942	0.20721	1.00000
0.57072	0.32990	0.15903	0.48684							
KN30	Legal, Government and Jurisprudence			0.42816	0.53315	0.24371	-0.14762	0.29759	0.38690	0.57072
1.00000	0.36953	0.46170	0.32717							
KN31	Telecommunications			0.29224	0.35820	0.20784	-0.03674	0.13632	0.16143	0.32990
0.36953	1.00000	0.48026	0.30001							
KN32	Communications and Media			0.53181	0.73480	0.34755	0.23770	0.39792	0.42412	0.15903
0.46170	0.48026	1.00000	0.13257							
KN33	Transportation			0.09827	0.04660	0.14283	-0.12233	0.04075	0.08140	0.48684
0.32717	0.30001	0.13257	1.00000							

PRINCIPAL COMPONENT ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE
SAS OUTPUT

The FACTOR Procedure
Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 33 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	9.04969654	4.71399637	0.2742	0.2742
2	4.33570017	1.60202779	0.1314	0.4056
3	2.73367237	0.59589789	0.0828	0.4885
4	2.13777449	0.20884060	0.0648	0.5532
5	1.92893388	0.33712812	0.0585	0.6117
6	1.59180576	0.16057717	0.0482	0.6599
7	1.43122859	0.31847167	0.0434	0.7033
8	1.11275691	0.30049150	0.0337	0.7370
9	0.81226542	0.01576030	0.0246	0.7616
10	0.79650511	0.11788586	0.0241	0.7858
11	0.67861925	0.00758150	0.0206	0.8063
12	0.67103775	0.05052285	0.0203	0.8267
13	0.62051490	0.08302346	0.0188	0.8455
14	0.53749145	0.06237483	0.0163	0.8618
15	0.47511662	0.01543785	0.0144	0.8762
16	0.45967877	0.06577256	0.0139	0.8901
17	0.39390621	0.01292642	0.0119	0.9020
18	0.38097979	0.07391120	0.0115	0.9136
19	0.30706859	0.02773838	0.0093	0.9229
20	0.27933021	0.01148655	0.0085	0.9313
21	0.26784366	0.01475085	0.0081	0.9395
22	0.25309281	0.03151197	0.0077	0.9471
23	0.22158084	0.00412045	0.0067	0.9538
24	0.21746039	0.01312603	0.0066	0.9604
25	0.20433436	0.01509693	0.0062	0.9666
26	0.18923742	0.02048285	0.0057	0.9724
27	0.16875458	0.01773060	0.0051	0.9775
28	0.15102398	0.00467545	0.0046	0.9820
29	0.14634853	0.01137370	0.0044	0.9865
30	0.13497483	0.02575081	0.0041	0.9906
31	0.10922402	0.00523519	0.0033	0.9939
32	0.10398883	0.00593586	0.0032	0.9970
33	0.09805297		0.0030	1.0000

8 factors will be retained by the MINEIGEN criterion.

PRINCIPAL COMPONENT ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

			1	2	3	4	5	6
7	8							
		1	0.62250	-0.18637	0.48331	0.38296	0.36954	0.21328
0.12197	0.02403	2	0.08745	0.90476	0.01959	-0.13709	0.24581	0.23521
0.15654	-0.11967	3	-0.33384	0.05247	0.02584	0.57308	-0.19001	-0.10624
0.68389	-0.20400	4	-0.55128	0.03753	0.69588	-0.00152	-0.10095	0.34532
0.21620	0.18509	5	0.03486	0.21023	0.35613	-0.06514	0.08667	-0.82568
0.04625	0.36348	6	0.40156	0.06466	0.16076	-0.27023	-0.76796	0.15060
0.28330	0.20734	7	0.12506	0.30485	-0.16832	0.65188	-0.32988	-0.02589
0.54349	0.18243	8	-0.10667	-0.03454	-0.31639	0.06255	0.22500	0.25210
0.26151	0.83716							

Rotated Factor Pattern

Factor6	Factor7	Factor8	Factor1	Factor2	Factor3	Factor4	Factor5
---------	---------	---------	---------	---------	---------	---------	---------

KN	Description	0.81743	0.02488	0.21509	0.19144	0.23776
KN1	Administration and Management	0.81743	0.02488	0.21509	0.19144	0.23776
0.04961	0.11369 -0.03473					
KN2	Clerical	0.46141	-0.33898	0.10456	0.08733	0.48687
0.06450	-0.00050 -0.19694					
KN3	Economics and Accounting	0.84073	-0.11295	0.10814	-0.07487	0.17609
0.11703	-0.04031 -0.02673					
KN4	Sales and Marketing	0.63842	-0.12927	0.00813	0.04367	0.04745
0.20658	-0.01979 0.46312					
KN5	Customer and Personal Service	0.40192	-0.27245	-0.01313	0.55452	0.06824
0.25399	-0.06139 0.26258					
KN6	Personnel and Human Resources	0.80279	-0.00889	0.09961	0.21794	0.00955
0.05890	-0.01826 -0.02645					
KN7	Production and Processing	0.14406	0.56021	-0.12223	-0.31524	-0.21602
0.17445	0.16187 0.07890					
KN8	Food Production	0.27055	-0.10119	-0.01520	-0.19257	-0.24377
0.14073	0.66618 0.10566					
KN9	Computers and Electronics	0.23221	0.13837	0.10229	0.05770	0.82955
0.02103	-0.03783 -0.04130					
KN10	Engineering and Technology	-0.06770	0.88716	-0.08517	-0.08866	0.22820
0.08544	0.08297 -0.07479					
KN11	Design	0.06789	0.80339	0.00939	-0.06827	0.22160
0.07425	-0.07847 0.25546					
KN12	Building and Construction	0.00330	0.72285	-0.03345	-0.05570	-0.23317
0.08508	-0.15072 -0.00256					
KN13	Mechanical	-0.26332	0.74803	-0.18386	-0.07970	-0.15355
0.18150	-0.06182 -0.15126					
KN14	Mathematics	0.57509	0.30336	0.17481	-0.03783	0.48116
0.06319	0.19871 -0.19526					
KN15	Physics	-0.13425	0.78498	0.02178	-0.01905	0.19586
0.13008	0.27218 -0.15795					
KN16	Chemistry	-0.09895	0.27446	0.03123	0.15990	0.07578
0.02336	0.78598 -0.10388					
KN17	Biology	0.03228	-0.07266	0.10602	0.37271	0.06739
0.01578	0.82306 -0.06575					
KN18	Psychology	0.47374	-0.15662	0.32885	0.68632	0.11211
0.06299	0.01744 0.01764					
KN19	Sociology and Anthropology	0.30479	-0.13560	0.76155	0.33653	0.10388
0.12249	-0.04101 0.01888					
KN20	Geography	0.13307	0.01051	0.45864	-0.09861	0.21524
0.67453	0.02717 0.06316					
KN21	Medicine and Dentistry	-0.05150	-0.09102	0.03222	0.73547	0.08173
0.04371	0.46656 -0.06986					
KN22	Therapy and Counseling	0.13587	-0.14548	0.23075	0.85252	0.04310
0.04587	0.10078 -0.05002					
KN23	Education and Training	0.52631	0.05300	0.38463	0.48651	0.19420
0.00300	0.12845 0.02740					
KN24	English Language	0.46940	-0.05917	0.46297	0.21778	0.53237
0.06767	0.17303 -0.05651					
KN25	Foreign Language	0.01238	-0.15293	0.59237	0.11753	0.11762
0.24074	0.03392 0.16415					
KN26	Fine Arts	-0.10481	0.01415	0.23651	-0.01988	-0.01678
0.17927	-0.06875 0.78490					
KN27	History and Archeology	0.09901	0.02304	0.87161	-0.06360	0.07802
0.04631	0.07202 0.08384					
KN28	Philosophy	0.19137	-0.04740	0.80409	0.22362	0.00661
0.03709	0.00672 -0.00965					
KN29	Public Safety and Security	0.13490	0.32015	0.13250	0.22856	0.04993
0.66619	0.10738 -0.24909					
KN30	Legal, Government and Jurisprudence	0.52825	-0.07936	0.30088	0.13376	0.19686
0.43446	0.03799 -0.24815					
KN31	Telecommunications	0.11473	0.03730	0.03214	0.12974	0.68589
0.43249	-0.08675 0.12306					
KN32	Communications and Media	0.41490	-0.12338	0.40266	0.08610	0.51682
0.08980	0.05151 0.28907					
KN33	Transportation	0.08542	0.06223	0.02820	-0.01403	0.01164
0.83661	0.00155 -0.02814					

Variance Explained by Each Factor

Factor8	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
1.4050979	4.7884188	4.1003244	3.5903704	3.0434956	2.7836312	2.3601333	2.2500971

Final Communality Estimates: Total = 24.321569

KN9	KN1	KN2	KN3	KN4	KN5	KN6	KN7	KN8
	KN10	KN11						
0.82483428	0.62635604	0.78393518	0.68607165	0.68531409	0.70656694	0.55842305	0.65494353	
0.77858572	0.87860113	0.78083221						
KN20	KN12	KN13	KN14	KN15	KN16	KN17	KN18	KN19
	KN21	KN22						
0.61107528	0.75226568	0.76785838	0.78936738	0.74651483	0.84301562	0.84529357	0.83231873	
0.74394488	0.78404647	0.83628726						
KN31	KN23	KN24	KN25	KN26	KN27	KN28	KN29	KN30
	KN32	KN33						
0.71941306	0.80673313	0.48814069	0.72073127	0.79453412	0.73700405	0.71037058	0.68430437	
0.71257529	0.71830094	0.71300932						

PRINCIPAL COMPONENT ANALYSES OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

KN8	KN9	KN10	KN11	KN1	KN2	KN3	KN4	KN5	KN6	KN7
KN1	Administration and Management			1.00000	0.31447	0.63208	0.38158	0.22471	0.76700	-0.15247
0.12043	0.23723	-0.13711	-0.03954							
KN2	Clerical			0.31447	1.00000	0.44471	0.18645	0.32343	0.23720	-0.25401
0.02801	0.43259	-0.31249	-0.27472							
KN3	Economics and Accounting			0.63208	0.44471	1.00000	0.52220	0.29342	0.49276	-0.15245
0.05012	0.22605	-0.24596	-0.09889							
KN4	Sales and Marketing			0.38158	0.18645	0.52220	1.00000	0.45189	0.29551	-0.10754
0.07337	0.05390	-0.22281	-0.04449							
KN5	Customer and Personal Service			0.22471	0.32343	0.29342	0.45189	1.00000	0.21542	-0.32613
0.01607	0.03434	-0.37396	-0.20497							
KN6	Personnel and Human Resources			0.76700	0.23720	0.49276	0.29551	0.21542	1.00000	-0.09119
0.09943	0.10367	-0.17229	-0.10986							
KN7	Production and Processing			-0.15247	-0.25401	-0.15245	-0.10754	-0.32613	-0.09119	1.00000
0.11329	-0.16184	0.37055	0.32012							
KN8	Food Production			0.12043	-0.02801	0.05012	0.07337	0.01607	0.09943	0.11329
1.00000	-0.14629	-0.09748	-0.13321							
KN9	Computers and Electronics			0.23723	0.43259	0.22605	0.05390	0.03434	0.10367	-0.16184
0.14629	1.00000	0.16282	0.15676							
KN10	Engineering and Technology			-0.13711	-0.31249	-0.24596	-0.22281	-0.37396	-0.17229	0.37055
0.09748	0.16282	1.00000	0.60403							
KN11	Design			-0.03954	-0.27472	-0.09889	-0.04449	-0.20497	-0.10986	0.32012
0.13321	0.15676	0.60403	1.00000							
KN12	Building and Construction			-0.17819	-0.38282	-0.15777	-0.13701	-0.27165	-0.13419	0.16303
0.08368	-0.20490	0.45520	0.49125							
KN13	Mechanical			-0.40790	-0.39615	-0.38650	-0.27204	-0.33576	-0.27651	0.39457
0.08476	-0.15843	0.67969	0.30370							
KN14	Mathematics			0.46877	0.35288	0.57101	0.24478	0.05635	0.28427	0.01678
0.03112	0.40223	0.13270	0.19710							
KN15	Physics			-0.11974	-0.28939	-0.26607	-0.24856	-0.32476	-0.13953	0.26696
0.06486	0.07608	0.73064	0.43639							
KN16	Chemistry			-0.02707	-0.10609	-0.19555	-0.13491	-0.08831	-0.07872	0.13413
0.21044	-0.07289	0.18954	-0.01193							
KN17	Biology			0.15410	0.02141	-0.05835	-0.03286	0.09242	0.04060	-0.17926
0.41123	-0.06594	-0.13219	-0.17292							
KN18	Psychology			0.52664	0.26941	0.27697	0.30511	0.49681	0.45833	-0.32562
0.00569	0.13476	-0.30517	-0.17895							
KN19	Sociology and Anthropology			0.42947	0.22637	0.25768	0.24516	0.31204	0.29756	-0.30251
0.02857	0.11876	-0.30674	-0.15020							
KN20	Geography			0.20186	0.16948	0.20112	0.19133	0.17157	0.09844	-0.23885
0.00754	0.11352	-0.06185	-0.03056							
KN21	Medicine and Dentistry			0.11357	0.12390	-0.05201	-0.03345	0.28278	0.06496	-0.24204
0.06562	0.02794	-0.14999	-0.17951							
KN22	Therapy and Counseling			0.26558	0.17661	0.04858	0.03683	0.39665	0.24482	-0.29978
0.00016	0.04752	-0.24628	-0.20238							
KN23	Education and Training			0.60195	0.21304	0.29511	0.26831	0.33217	0.50385	-0.23099
0.06789	0.21492	-0.14040	-0.07167							
KN24	English Language			0.60789	0.53622	0.44409	0.30695	0.30789	0.40690	-0.32253
0.01707	0.47129	-0.21803	-0.12646							
KN25	Foreign Language			0.15061	0.11873	0.08960	0.11167	0.13812	0.13776	-0.19019
0.02467	0.11577	-0.14010	-0.10031							
KN26	Fine Arts			-0.05395	-0.16166	-0.08876	0.06685	0.00133	-0.02848	0.00542
0.08501	-0.09677	-0.13671	0.22071							
KN27	History and Archeology			0.17241	0.09026	0.12190	0.07033	0.03631	0.08965	-0.15368
0.00151	0.09031	-0.10910	-0.02434							
KN28	Philosophy			0.27995	0.12637	0.16287	0.14796	0.17438	0.16558	-0.18874
0.01038	0.08685	-0.20393	-0.12528							
KN29	Public Safety and Security			0.16219	0.03346	0.03644	-0.01101	0.11584	0.14073	-0.05948
0.03286	0.08369	0.20546	0.02325							
KN30	Legal, Government and Jurisprudence			0.45473	0.31408	0.48075	0.20739	0.18145	0.36410	-0.25759
0.05322	0.16734	-0.19355	-0.12945							
KN31	Telecommunications			0.26366	0.37111	0.28505	0.22205	0.22871	0.17454	-0.28665
0.08175	0.50926	-0.03192	-0.02746							
KN32	Communications and Media			0.46891	0.38641	0.36223	0.36557	0.20291	0.32841	-0.22653
0.03986	0.40229	-0.18724	-0.05827							
KN33	Transportation			0.06337	0.07342	0.05927	0.07313	0.13351	0.07189	-0.07388
0.03801	-0.02291	0.02413	-0.11180							
Correlations										
KN19	KN20	KN21	KN22	KN12	KN13	KN14	KN15	KN16	KN17	KN18
KN1	Administration and Management			-0.17819	-0.40790	0.46877	-0.11974	-0.02707	0.15410	0.52664
0.42947	0.20186	0.11357	0.26558							
KN2	Clerical			-0.38282	-0.39615	0.35288	-0.28939	-0.10609	0.02141	0.26941
0.22637	0.16948	0.12390	0.17661							
KN3	Economics and Accounting			-0.15777	-0.38650	0.57101	-0.26607	-0.19555	-0.05835	0.27697
0.25768	0.20112	-0.05201	0.04858							
KN4	Sales and Marketing			-0.13701	-0.27204	0.24478	-0.24856	-0.13491	-0.03286	0.30511
0.24516	0.19133	-0.03345	0.03683							
KN5	Customer and Personal Service			-0.27165	-0.33576	0.05635	-0.32476	-0.08831	0.09242	0.49681
0.31204	0.17157	0.28278	0.39665							
KN6	Personnel and Human Resources			-0.13419	-0.27651	0.28427	-0.13953	-0.07872	0.04060	0.45833
0.29756	0.09844	0.06496	0.24482							
KN7	Production and Processing			0.16303	0.39457	0.01678	0.26696	0.13413	-0.17926	-0.32562
0.30251	-0.23885	-0.24204	-0.29978							
KN8	Food Production			-0.08368	-0.08476	0.03112	-0.06486	0.21044	0.41123	0.00569
0.02857	-0.00754	0.06562	0.00016							
KN9	Computers and Electronics			-0.20490	-0.15843	0.40223	0.07608	-0.07289	-0.06594	0.13476
0.11876	0.11352	0.02794	0.04752							
KN10	Engineering and Technology			0.45520	0.67969	0.13270	0.73064	0.18954	-0.13219	-0.30517
0.30674	-0.06185	-0.14999	-0.24628							
KN11	Design			0.49125	0.30370	0.19710	0.43639	-0.01193	-0.17292	-0.17895
0.15020	-0.03056	-0.17951	-0.20238							
KN12	Building and Construction			1.00000	0.47007	-0.07162	0.33836	-0.03418	-0.16745	-0.26119
0.22661	-0.06640	-0.17363	-0.20115							
KN13	Mechanical			0.47007	1.00000	-0.22493	0.49917	0.08689	-0.22564	-0.42786
0.42255	-0.16293	-0.18215	-0.28843							
KN14	Mathematics			-0.07162	-0.22493	1.00000	0.20568	0.10489	0.08374	0.20068
0.14362	0.17687	0.00781	0.02953							
KN15	Physics			0.33836	0.49917	0.20568	1.00000	0.33677	0.04296	-0.20292
0.21102	0.09650	-0.02011	-0.13145							
KN16	Chemistry			-0.03418	0.08689	0.10489	0.33677	1.00000	0.56146	-0.00089
0.07872	-0.07995	0.37295	0.09621							

KN17	Biology			-0.16745	-0.22564	0.08374	0.04296	0.56146	1.00000	0.25471
0.12809	-0.00784	0.63775	0.35309							
KN18	Psychology			-0.26119	-0.42786	0.20068	-0.20292	-0.00089	0.25471	1.00000
0.68178	0.16334	0.42486	0.75305							
KN19	Sociology and Anthropology			-0.22661	-0.42255	0.14362	-0.21102	-0.07872	0.12809	0.68178
1.00000	0.37344	0.18795	0.47330							
KN20	Geography			-0.06640	-0.16293	0.17687	0.09650	-0.07995	-0.00784	0.16334
0.37344	1.00000	-0.02665	0.01127							
KN21	Medicine and Dentistry			-0.17363	-0.18215	0.00781	-0.02011	0.37295	0.63775	0.42486
0.18795	-0.02665	1.00000	0.61728							
KN22	Therapy and Counseling			-0.20115	-0.28843	0.02953	-0.13145	0.09621	0.35309	0.75305
0.47330	0.01127	0.61728	1.00000							
KN23	Education and Training			-0.18663	-0.31655	0.29376	-0.03008	0.04285	0.23399	0.67844
0.52749	0.14506	0.29313	0.56322							
KN24	English Language			-0.32764	-0.52820	0.45970	-0.14403	-0.00513	0.17042	0.56951
0.52628	0.24572	0.22828	0.36435							
KN25	Foreign Language			-0.09521	-0.18371	-0.00230	-0.06333	-0.04594	0.00794	0.18800
0.35602	0.30019	0.10291	0.15516							
KN26	Fine Arts			0.00509	-0.18083	-0.17764	-0.11237	-0.04396	-0.10469	0.02404
0.09214	-0.05759	-0.09373	-0.03469							
KN27	History and Archeology			-0.06398	-0.19713	0.08801	0.00403	-0.01053	0.05296	0.20187
0.55564	0.32284	0.00261	0.08762							
KN28	Philosophy			-0.15567	-0.25393	0.09677	-0.12273	-0.02500	0.10205	0.44177
0.64730	0.23681	0.13206	0.35010							
KN29	Public Safety and Security			0.08380	0.13974	0.09517	0.29590	0.16916	0.07313	0.17263
0.14339	0.34318	0.19482	0.09968							
KN30	Legal, Government and Jurisprudence			-0.14636	-0.31915	0.32168	-0.11707	-0.03294	0.06576	0.34717
0.40026	0.39374	0.11509	0.17331							
KN31	Telecommunications			-0.19090	-0.20270	0.17702	-0.03086	-0.16421	-0.10322	0.21588
0.20194	0.38101	0.02092	0.09630							
KN32	Communications and Media			-0.27257	-0.43109	0.29266	-0.11009	-0.07493	0.01882	0.40190
0.43907	0.30435	0.05312	0.18474							
KN33	Transportation			-0.01250	0.08158	0.02211	0.12094	-0.10224	-0.09007	0.04169
0.04763	0.58488	-0.01169	-0.01325							

SAS OUTPUT PRINCIPAL COMPONENT ANALYSES OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE

The FACTOR Procedure

Correlations

KN30	KN31	KN32	KN33	KN23	KN24	KN25	KN26	KN27	KN28	KN29
KN1	Administration and Management			0.60195	0.60789	0.15061	-0.05395	0.17241	0.27995	0.16219
0.45473	0.26366	0.46891	0.06337							
KN2	Clerical			0.21304	0.53622	0.11873	-0.16166	0.09026	0.12637	0.03346
0.31408	0.37111	0.38641	0.07342							
KN3	Economics and Accounting			0.29511	0.44409	0.08960	-0.08876	0.12190	0.16287	0.03644
0.48075	0.28505	0.36223	0.05927							
KN4	Sales and Marketing			0.26831	0.30695	0.11167	0.06685	0.07033	0.14796	-0.01101
0.20739	0.22205	0.36557	0.07313							
KN5	Customer and Personal Service			0.33217	0.30789	0.13812	0.00133	0.03631	0.17438	0.11584
0.18145	0.22871	0.20291	0.13351							
KN6	Personnel and Human Resources			0.50385	0.40690	0.13776	-0.02848	0.08965	0.16558	0.14073
0.36410	0.17454	0.32841	0.07189							
KN7	Production and Processing			-0.23099	-0.32253	-0.19019	0.00542	-0.15368	-0.18874	-0.05948
0.25759	-0.28665	-0.22653	-0.07388							
KN8	Food Production			0.06789	0.01707	-0.02467	-0.08501	-0.00151	0.01038	0.03286
0.05322	-0.08175	-0.03986	0.03801							
KN9	Computers and Electronics			0.21492	0.47129	0.11577	-0.09677	0.09031	0.08685	0.08369
0.16734	0.50926	0.40229	-0.02291							
KN10	Engineering and Technology			-0.14040	-0.21803	-0.14010	-0.13671	-0.10910	-0.20393	0.20546
0.19355	-0.03192	-0.18724	0.02413							
KN11	Design			-0.07167	-0.12646	-0.10031	0.22071	-0.02434	-0.12528	0.02325
0.12945	-0.02746	-0.05827	-0.11180							
KN12	Building and Construction			-0.18663	-0.32764	-0.09521	0.00509	-0.06398	-0.15567	0.08380
0.14636	-0.19090	-0.27257	-0.01250							
KN13	Mechanical			-0.31655	-0.52820	-0.18371	-0.18083	-0.19713	-0.25393	0.13974
0.31915	-0.20270	-0.43109	0.08158							
KN14	Mathematics			0.29376	0.45970	-0.00230	-0.17764	0.08801	0.09677	0.09517
0.32168	0.17702	0.29266	0.02211							
KN15	Physics			-0.03008	-0.14403	-0.06333	-0.11237	0.00403	-0.12273	0.29590
0.11707	-0.03086	-0.11009	0.12094							
KN16	Chemistry			0.04285	-0.00513	-0.04594	-0.04396	-0.01053	-0.02500	0.16916
0.03294	-0.16421	-0.07493	-0.10224							
KN17	Biology			0.23399	0.17042	0.00794	-0.10469	0.05296	0.10205	0.07313
0.06576	-0.10322	0.01882	-0.09007							
KN18	Psychology			0.67844	0.56951	0.18800	0.02404	0.20187	0.44177	0.17263
0.34717	0.21588	0.40190	0.04169							
KN19	Sociology and Anthropology			0.52749	0.52628	0.35602	0.09214	0.55564	0.64730	0.14339
0.40026	0.20194	0.43907	0.04763							
KN20	Geography			0.14506	0.24572	0.30019	-0.05759	0.32284	0.23681	0.34318
0.39374	0.38101	0.30435	0.58488							
KN21	Medicine and Dentistry			0.29313	0.22828	0.10291	-0.09373	0.00261	0.13206	0.19482
0.11509	0.02092	0.05312	-0.01169							
KN22	Therapy and Counseling			0.56322	0.36435	0.15516	-0.03469	0.08762	0.35010	0.09968
0.17331	0.09630	0.18474	-0.01325							
KN23	Education and Training			1.00000	0.58287	0.24563	0.00988	0.27264	0.42405	0.19643
0.30135	0.20908	0.43362	0.02108							
KN24	English Language			0.58287	1.00000	0.33438	-0.04724	0.31130	0.36398	0.16182
0.49148	0.40905	0.72152	0.04722							
KN25	Foreign Language			0.24563	0.33438	1.00000	0.04103	0.39500	0.33696	0.17984
0.19209	0.20015	0.29121	0.17419							
KN26	Fine Arts			0.00988	-0.04724	0.04103	1.00000	0.14985	0.08694	-0.19259
0.13215	-0.07290	0.18813	-0.13393							
KN27	History and Archeology			0.27264	0.31130	0.39500	0.14985	1.00000	0.60540	0.05189
0.19190	0.09155	0.27739	0.00385							
KN28	Philosophy			0.42405	0.36398	0.33696	0.08694	0.60540	1.00000	0.12706
0.25759	0.12092	0.33062	0.03019							
KN29	Public Safety and Security			0.19643	0.16182	0.17984	-0.19259	0.05189	0.12706	1.00000
0.51770	0.26192	0.13225	0.44232							
KN30	Legal, Government and Jurisprudence			0.30135	0.49148	0.19209	-0.13215	0.19190	0.25759	0.51770
1.00000	0.32165	0.36122	0.23920							
KN31	Telecommunications			0.20908	0.40905	0.20015	-0.07290	0.09155	0.12092	0.26192
0.32165	1.00000	0.49866	0.28982							
KN32	Communications and Media			0.43362	0.72152	0.29121	0.18813	0.27739	0.33062	0.13225

0.36122	0.49866	1.00000	0.10972							
KN33	Transportation			0.02108	0.04722	0.17419	-0.13393	0.00385	0.03019	0.44232
0.23920	0.28982	0.10972	1.00000							

SAS OUTPUT PRINCIPAL COMPONENT ANALYSES OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE

The FACTOR Procedure
Initial Factor Method: Principal Components
Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 33 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	8.10116714	4.87267100	0.2455	0.2455
2	3.22849615	0.42323686	0.0978	0.3433
3	2.80525929	0.59366798	0.0850	0.4283
4	2.21159131	0.18334599	0.0670	0.4953
5	2.02824532	0.34730722	0.0615	0.5568
6	1.68093810	0.19223546	0.0509	0.6077
7	1.48870264	0.34027719	0.0451	0.6529
8	1.14842545	0.19360432	0.0348	0.6877
9	0.95482113	0.03570467	0.0289	0.7166
10	0.91911646	0.12149543	0.0279	0.7444
11	0.79762103	0.04839362	0.0242	0.7686
12	0.74922740	0.03066570	0.0227	0.7913
13	0.71856170	0.07944024	0.0218	0.8131
14	0.63912146	0.10522017	0.0194	0.8325
15	0.53390129	0.03084487	0.0162	0.8486
16	0.50305642	0.01283413	0.0152	0.8639
17	0.49022229	0.05958000	0.0149	0.8787
18	0.43064228	0.04667841	0.0130	0.8918
19	0.38396387	0.02916267	0.0116	0.9034
20	0.35480120	0.00626924	0.0108	0.9142
21	0.34853196	0.03751735	0.0106	0.9247
22	0.31101462	0.02732328	0.0094	0.9342
23	0.28369134	0.00979622	0.0086	0.9428
24	0.27389512	0.02677029	0.0083	0.9511
25	0.24712483	0.00304768	0.0075	0.9585
26	0.24407715	0.03736252	0.0074	0.9659
27	0.20671463	0.01032246	0.0063	0.9722
28	0.19639217	0.01582629	0.0060	0.9782
29	0.18056588	0.01689175	0.0055	0.9836
30	0.16367413	0.02935410	0.0050	0.9886
31	0.13432003	0.01067848	0.0041	0.9927
32	0.12364156	0.00516690	0.0037	0.9964
33	0.11847466		0.0036	1.0000

8 factors will be retained by the MINEIGEN criterion.

SAS OUTPUT PRINCIPAL COMPONENT ANALYSES OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	7	8	1	2	3	4	5	6
0.05391	0.08144	1	0.54900	-0.39139	0.42882	0.40298	0.37881	0.21471
0.15264	-0.07698	2	0.29422	0.72557	-0.26237	0.07088	0.36105	0.39183
0.66263	-0.22296	3	-0.15286	0.40983	0.51801	0.14527	-0.16833	0.04590
0.31126	0.11745	4	-0.51862	-0.02847	0.03995	0.60871	-0.20770	0.45197
0.16218	0.38913	5	0.15566	0.33636	0.05398	0.45741	-0.10084	-0.68015
0.02775	0.08828	6	0.53070	0.00496	-0.12204	-0.01070	-0.78928	0.26795
0.57237	-0.04033	7	-0.00071	-0.18959	-0.67757	0.40495	0.09650	-0.04923
0.28836	0.87355	8	-0.11755	0.04977	0.02075	-0.26006	0.11060	0.23908

Rotated Factor Pattern

	Factor6	Factor7	Factor8	Factor1	Factor2	Factor3	Factor4	Factor5
KN1		Administration and Management		0.82692	-0.03859	0.21024	0.18713	0.16776
0.04127		0.06620	0.00252					
KN2		Clerical		0.27248	-0.41732	0.06848	0.00112	0.59529
0.06153		-0.04316	-0.17282					
KN3		Economics and Accounting		0.78228	-0.23020	-0.07730	0.00957	0.23030
0.09223		-0.09827	0.03741					
KN4		Sales and Marketing		0.53486	-0.19216	0.05827	-0.06468	0.04145
0.18756		-0.06006	0.49930					
KN5		Customer and Personal Service		0.21111	-0.36413	0.51617	-0.11279	0.05552
0.26072		-0.07100	0.29420					
KN6		Personnel and Human Resources		0.76207	-0.06336	0.22415	0.08970	-0.02674
0.03405		-0.05021	-0.05289					
KN7		Production and Processing		0.07883	0.41116	-0.37036	-0.14440	-0.25137
0.20143		0.09409	-0.01440					
KN8		Food Production		0.23236	-0.16587	-0.19099	-0.02635	-0.24212

1.00000	0.93913	0.81313	0.84950						
sk8	Active Learning			0.88444	0.77840	0.84943	0.80388	0.71191	0.61544
0.93913	1.00000	0.84664	0.86144						
sk9	Learning strategies			0.77224	0.73966	0.75318	0.77515	0.55474	0.47628
0.81313	0.84664	1.00000	0.84513						
sk10	Monitoring			0.79619	0.76322	0.77340	0.79026	0.58434	0.45499
0.84950	0.86144	0.84513	1.00000						
sk11	Social Perceptiveness			0.66068	0.84031	0.69362	0.84439	0.31633	0.13670
0.66283	0.63772	0.71921	0.70615						
sk12	Coordination			0.65020	0.75471	0.66203	0.78333	0.45693	0.29463
0.72757	0.69527	0.70587	0.73942						
sk13	Persuasion			0.71507	0.81434	0.74051	0.84656	0.46506	0.24760
0.75763	0.72701	0.72478	0.73545						
sk14	Negotiation			0.64308	0.74025	0.68675	0.76412	0.45622	0.16864
0.70143	0.65619	0.63796	0.69045						
sk15	Instructing			0.66593	0.70524	0.66152	0.76723	0.44382	0.37400
0.69723	0.69702	0.84283	0.72695						
sk16	Service orientation			0.43721	0.64404	0.45489	0.62122	0.15880	0.03495
0.40830	0.38129	0.50350	0.42940						
sk17	Problem identification			0.79041	0.74378	0.76327	0.75821	0.68456	0.55832
0.87077	0.82148	0.72563	0.78176						
sk18	Information gathering			0.89715	0.79813	0.88714	0.82428	0.72097	0.53063
0.89261	0.89158	0.73619	0.78067						
sk19	Information organization			0.87098	0.76773	0.85789	0.78156	0.68703	0.49098
0.84032	0.86797	0.74527	0.77379						
sk20	Synthesis/Reorganization			0.86776	0.77526	0.84780	0.78625	0.68102	0.51050
0.87918	0.90652	0.78651	0.82089						
sk21	Idea generation			0.81148	0.75554	0.80551	0.79182	0.62707	0.50130
0.88356	0.90745	0.82521	0.83993						
sk22	Idea evaluation			0.83030	0.76664	0.81812	0.79836	0.64901	0.51667
0.89875	0.91960	0.83422	0.85901						
sk23	Implementation planning			0.78522	0.77083	0.78250	0.81381	0.62525	0.44773
0.85316	0.86089	0.80952	0.83073						
sk24	Solution appraisal			0.81510	0.75750	0.78804	0.78667	0.67195	0.52829
0.88646	0.89485	0.82914	0.87098						
sk25	Operations analysis			0.58221	0.45833	0.55949	0.50545	0.66384	0.53695
0.64771	0.69382	0.59522	0.62018						
sk26	Technical design			0.22360	0.09104	0.14185	0.10691	0.40943	0.51363
0.27059	0.30501	0.22584	0.22487						
sk27	Equipment selection			0.24925	0.06364	0.17046	0.09926	0.44874	0.59814
0.33953	0.37167	0.28151	0.28531						
sk28	Installation			-0.19307	-0.30063	-0.26582	-0.28294	0.06857	0.22548
0.12521	-0.13452	-0.15343	-0.16425						
sk29	Programming			0.51421	0.37956	0.50515	0.39629	0.56878	0.49185
0.51112	0.54775	0.43917	0.43306						
sk30	Testing			0.24295	0.04820	0.17729	0.07565	0.43163	0.68466
0.30470	0.30365	0.21031	0.21975						
sk31	Operation monitoring			-0.11502	-0.26873	-0.16397	-0.23752	0.09295	0.37713
0.06972	-0.10901	-0.14815	-0.10250						
sk32	Operation and control			-0.19798	-0.33239	-0.25625	-0.30130	-0.01152	0.22431
0.15854	-0.19138	-0.18708	-0.15208						
sk33	Product inspection			0.21967	0.00938	0.16781	0.05239	0.39722	0.44565
0.25640	0.28031	0.19727	0.24775						
sk34	Equipment maintenance			-0.35411	-0.43859	-0.38256	-0.41767	-0.11721	0.13702
0.28710	-0.32753	-0.29441	-0.31893						
sk35	Troubleshooting			-0.07411	-0.16985	-0.10695	-0.14902	0.15545	0.35281
0.00523	-0.02658	-0.06894	-0.03747						
sk36	Repairing			-0.35764	-0.42509	-0.38253	-0.40991	-0.12161	0.09946
0.27915	-0.31239	-0.28786	-0.30241						
sk37	Visioning			0.76153	0.70895	0.74226	0.74674	0.63809	0.46952
0.85347	0.86258	0.79499	0.82945						
sk38	Systems perceptions			0.72650	0.68725	0.72258	0.72373	0.62427	0.48873
0.83556	0.80482	0.72153	0.78662						
sk39	Identification of downstream consequences			0.75599	0.70233	0.75286	0.73880	0.67285	0.51010
0.85532	0.84198	0.75465	0.80929						
sk40	Identification of key causes			0.78161	0.75926	0.77176	0.78905	0.63994	0.47468
0.86788	0.85190	0.78906	0.83849						
sk41	Judgment and decision making			0.80391	0.78091	0.78053	0.80395	0.65169	0.48092
0.89609	0.86668	0.74555	0.82688						
sk42	Systems evaluation			0.73626	0.69893	0.74437	0.73848	0.67101	0.47677
0.82854	0.81281	0.73380	0.80944						
sk43	Time management			0.69343	0.72878	0.70600	0.77252	0.49497	0.29679
0.74408	0.74217	0.77563	0.78450						
sk44	Management of financial resources			0.56599	0.60071	0.61365	0.63679	0.50563	0.15831
0.60193	0.59569	0.58134	0.62712						
sk45	Management of material resources			0.53400	0.51313	0.54715	0.56792	0.49214	0.35050
0.59611	0.60743	0.60607	0.61742						
sk46	Management of personnel resources			0.57352	0.59727	0.60495	0.66278	0.42792	0.25806
0.62557	0.62309	0.68887	0.68566						

Correlations

sk17	sk18	sk19	sk20	sk11	sk12	sk13	sk14	sk15	sk16
sk1	Reading comprehension			0.66068	0.65020	0.71507	0.64308	0.66593	0.43721
0.79041	0.89715	0.87098	0.86776						
sk2	Active listening			0.84031	0.75471	0.81434	0.74025	0.70524	0.64404
0.74378	0.79813	0.76773	0.77526						
sk3	Writing			0.69362	0.66203	0.74051	0.68675	0.66152	0.45489
0.76327	0.88714	0.85789	0.84780						
sk4	Speaking			0.84439	0.78333	0.84656	0.76412	0.76723	0.62122
0.75821	0.82428	0.78156	0.78625						
sk5	Mathematics			0.31633	0.45693	0.46506	0.45622	0.44382	0.15880
0.68456	0.72097	0.68703	0.68102						
sk6	Science			0.13670	0.29463	0.24760	0.16864	0.37400	0.03495
0.55832	0.53063	0.49098	0.51050						
sk7	Critical thinking			0.66283	0.72757	0.75763	0.70143	0.69723	0.40830
0.87077	0.89261	0.84032	0.87918						
sk8	Active learning			0.63772	0.69527	0.72701	0.65619	0.69702	0.38129
0.82148	0.89158	0.86797	0.90652						
sk9	Learning strategies			0.71921	0.70587	0.72478	0.63796	0.84283	0.50350
0.72563	0.73619	0.74527	0.78651						

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE

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Correlations									
sk17	sk18	sk19	sk20	sk11	sk12	sk13	sk14	sk15	sk16
sk10	Monitoring			0.70615	0.73942	0.73545	0.69045	0.72695	0.42940
0.78176	0.78067	0.77379	0.82089						
sk11	Social Perceptiveness			1.00000	0.73105	0.82708	0.75249	0.72269	0.78676
0.61652	0.62726	0.59813	0.61639						
sk12	Coordination			0.73105	1.00000	0.74537	0.75180	0.72221	0.49353
0.66235	0.64798	0.61640	0.66294						
sk13	Persuasion			0.82708	0.74537	1.00000	0.89346	0.71901	0.62923
0.71543	0.72907	0.67294	0.69887						
sk14	Negotiation			0.75249	0.75180	0.89346	1.00000	0.62991	0.52964
0.66132	0.66541	0.60717	0.63692						
sk15	Instructing			0.72269	0.72221	0.71901	0.62991	1.00000	0.56079
0.63600	0.61370	0.60641	0.63075						
sk16	Service orientation			0.78676	0.49353	0.62923	0.52964	0.56079	1.00000
0.45112	0.38786	0.36971	0.34471						
sk17	Problem identification			0.61652	0.66235	0.71543	0.66132	0.63600	0.45112
1.00000	0.83883	0.76424	0.78206						
sk18	Information gathering			0.62726	0.64798	0.72907	0.66541	0.61370	0.38786
0.83883	1.00000	0.91977	0.89426						
sk19	Information organization			0.59813	0.61640	0.67294	0.60717	0.60641	0.36971
0.76424	0.91977	1.00000	0.92155						
sk20	Synthesis/Reorganization			0.61639	0.66294	0.69887	0.63692	0.63075	0.34471
0.78206	0.89426	0.92155	1.00000						
sk21	Idea generation			0.67402	0.74068	0.75450	0.69540	0.70190	0.40906
0.79900	0.84800	0.82142	0.88578						
sk22	Idea evaluation			0.67546	0.74615	0.76357	0.70459	0.70313	0.40997
0.82953	0.86682	0.84027	0.89238						
sk23	Implementation planning			0.71441	0.79731	0.79314	0.74423	0.73710	0.48087
0.80243	0.83222	0.79569	0.83661						
sk24	Solution appraisal			0.65886	0.72511	0.74312	0.68418	0.69749	0.43523
0.86864	0.85543	0.82606	0.86547						
sk25	Operations analysis			0.34081	0.51435	0.49242	0.46603	0.50066	0.17554
0.64034	0.62776	0.61609	0.66733						
sk26	Technical design			-0.02733	0.13067	0.05206	0.00423	0.19418	-0.00210
0.32837	0.22557	0.22261	0.27193						
sk27	Equipment selection			-0.07842	0.22419	0.07006	0.03938	0.24157	-0.13442
0.37686	0.27515	0.27983	0.32497						
sk28	Installation			-0.35125	-0.14876	-0.26914	-0.25016	-0.12591	-0.26361
0.00951	-0.17466	-0.21875	-0.18186						
sk29	Programming			0.23387	0.32301	0.33614	0.28436	0.37825	0.14118
0.47012	0.52281	0.54961	0.53956						
sk30	Testing			-0.11896	0.09496	0.00469	-0.04323	0.16569	-0.15853
0.39891	0.25212	0.21469	0.23283						
sk31	Operation monitoring			-0.37876	-0.11576	-0.29688	-0.29866	-0.09677	-0.35825
0.03471	-0.13670	-0.17635	-0.16752						
sk32	Operation and control			-0.39211	-0.12773	-0.32926	-0.32347	-0.12941	-0.33261
0.06794	-0.22037	-0.23426	-0.23638						
sk33	Product inspection			-0.10762	0.12185	0.04267	0.06934	0.12422	-0.18289
0.33044	0.24206	0.23090	0.25805						
sk34	Equipment maintenance			-0.45295	-0.24822	-0.41030	-0.37286	-0.22130	-0.33512
0.12967	-0.34624	-0.40112	-0.38048						
sk35	Troubleshooting			-0.27226	-0.02374	-0.18256	-0.17251	-0.01988	-0.21012
0.17744	-0.06209	-0.10260	-0.08566						
sk36	Repairing			-0.43239	-0.26246	-0.39522	-0.36329	-0.23584	-0.29330
0.10480	-0.33050	-0.38490	-0.36034						
sk37	Visioning			0.62263	0.76136	0.73940	0.70782	0.68848	0.36040
0.80326	0.80711	0.77673	0.82864						
sk38	Systems perceptions			0.58436	0.74267	0.69829	0.68049	0.64317	0.34535
0.82201	0.79383	0.73165	0.76409						
sk39	Identification of downstream consequences			0.59750	0.73940	0.74371	0.73223	0.65777	0.35585
0.82759	0.82794	0.76496	0.80198						
sk40	Identification of key causes			0.68366	0.74375	0.77677	0.73927	0.68186	0.46413
0.87178	0.83021	0.77882	0.82273						
sk41	Judgment and decision making			0.66462	0.75224	0.76099	0.72660	0.64610	0.43108
0.86347	0.86498	0.80329	0.83273						
sk42	Systems evaluation			0.60034	0.73281	0.72404	0.71215	0.64991	0.35307
0.82815	0.80909	0.74690	0.77290						
sk43	Time management			0.73984	0.82418	0.75078	0.74756	0.75610	0.52434
0.70539	0.70611	0.69236	0.72228						
sk44	Management of financial resources			0.61019	0.66682	0.70788	0.77915	0.54825	0.47419
0.59266	0.60368	0.56050	0.57178						
sk45	Management of material resources			0.51489	0.69439	0.60699	0.66002	0.60042	0.39134
0.59087	0.55239	0.52340	0.55174						
sk46	Management of personnel resources			0.63391	0.80040	0.64085	0.69308	0.73979	0.42058
0.59367	0.57838	0.55933	0.58776						

Correlations									
sk27	sk28	sk29	sk30	sk21	sk22	sk23	sk24	sk25	sk26
sk1	Reading comprehension			0.81148	0.83030	0.78522	0.81510	0.58221	0.22360
0.24925	-0.19307	0.51421	0.24295						
sk2	Active listening			0.75554	0.76664	0.77083	0.75750	0.45833	0.09104
0.06364	-0.30063	0.37956	0.04820						
sk3	Writing			0.80551	0.81812	0.78250	0.78804	0.55949	0.14185
0.17046	-0.26582	0.50515	0.17729						
sk4	Speaking			0.79182	0.79836	0.81381	0.78667	0.50545	0.10691
0.09926	-0.28294	0.39629	0.07565						
sk5	Mathematics			0.62707	0.64901	0.62525	0.67195	0.66384	0.40943
0.44874	0.06857	0.56878	0.43163						
sk6	Science			0.50130	0.51667	0.44773	0.52829	0.53695	0.51363
0.59814	0.22548	0.49185	0.68466						
sk7	Critical thinking			0.88356	0.89875	0.85316	0.88646	0.64771	0.27059
0.33953	-0.12521	0.51112	0.30470						
sk8	Active learning			0.90745	0.91960	0.86089	0.89485	0.69382	0.30501
0.37167	-0.13452	0.54775	0.30365						
sk9	Learning strategies			0.82521	0.83422	0.80952	0.82914	0.59522	0.22584
0.28151	-0.15343	0.43917	0.21031						
sk10	Monitoring			0.83993	0.85901	0.83073	0.87098	0.62018	0.22487
0.28531	-0.16425	0.43306	0.21975						
sk11	Social Perceptiveness			0.67402	0.67546	0.71441	0.65886	0.34081	-0.02733
0.07842	-0.35125	0.23387	-0.11896						

sk12	Coordination			0.74068	0.74615	0.79731	0.72511	0.51435	0.13067
0.22419	-0.14876	0.32301	0.09496						
sk13	Persuasion			0.75450	0.76357	0.79314	0.74312	0.49242	0.05206
0.07006	-0.26914	0.33614	0.00469						
sk14	Negotiation			0.69540	0.70459	0.74423	0.68418	0.46603	0.00423
0.03938	-0.25016	0.28436	-0.04323						
sk15	Instructing			0.70190	0.70313	0.73710	0.69749	0.50066	0.19418
0.24157	-0.12591	0.37825	0.16569						
sk16	Service orientation			0.40906	0.40997	0.48087	0.43523	0.17554	-0.00210
0.13442	-0.26361	0.14118	-0.15853						
sk17	Problem identification			0.79900	0.82953	0.80243	0.86864	0.64034	0.32837
0.37686	0.00951	0.47012	0.39891						
sk18	Information gathering			0.84800	0.86682	0.83222	0.85543	0.62776	0.22557
0.27515	-0.17466	0.52281	0.25212						
sk19	Information organization			0.82142	0.84027	0.79569	0.82606	0.61609	0.22261
0.27983	-0.21875	0.54961	0.21469						
sk20	Synthesis/Reorganization			0.88578	0.89238	0.83661	0.86547	0.66733	0.27193
0.32497	-0.18186	0.53956	0.23283						
sk21	Idea generation			1.00000	0.96125	0.91641	0.91154	0.71832	0.28399
0.35654	-0.13908	0.50366	0.23782						
sk22	Idea evaluation			0.96125	1.00000	0.92436	0.92674	0.73029	0.30181
0.36523	-0.13832	0.48930	0.26441						
sk23	Implementation planning			0.91641	0.92436	1.00000	0.89989	0.72890	0.27888
0.34189	-0.12772	0.46520	0.21233						
sk24	Solution appraisal			0.91154	0.92674	0.89989	1.00000	0.72845	0.33063
0.38496	-0.08059	0.50117	0.32327						
sk25	Operations analysis			0.71832	0.73029	0.72890	0.72845	1.00000	0.64566
0.60780	0.20603	0.52986	0.48716						
sk26	Technical design			0.28399	0.30181	0.27888	0.33063	0.64566	1.00000
0.69125	0.55722	0.37420	0.65969						
sk27	Equipment selection			0.35654	0.36523	0.34189	0.38496	0.60780	0.69125
1.00000	0.50287	0.36795	0.65387						
sk28	Installation			-0.13908	-0.13832	-0.12772	-0.08059	0.20603	0.57222
0.50287	1.00000	0.09589	0.59406						
sk29	Programming			0.50366	0.48930	0.46520	0.50117	0.52986	0.37420
0.36795	0.09589	1.00000	0.39811						
sk30	Testing			0.23782	0.26441	0.21233	0.32327	0.48716	0.65969
0.65387	0.59406	0.39811	1.00000						
sk31	Operation monitoring			-0.16870	-0.15423	-0.18295	-0.09436	0.07186	0.39013
0.45237	0.51435	0.10157	0.64211						
sk32	Operation and control			-0.23046	-0.21571	-0.21395	-0.15908	0.00645	0.30574
0.40513	0.45590	0.02731	0.46879						
sk33	Product inspection			0.24009	0.27739	0.24795	0.33929	0.55106	0.54161
0.58882	0.45713	0.23313	0.65162						
sk34	Equipment maintenance			-0.33048	-0.32215	-0.31898	-0.26035	-0.04535	0.36887
0.37998	0.72537	-0.09202	0.51641						
sk35	Troubleshooting			-0.04191	-0.02147	-0.02748	0.05250	0.26896	0.58690
0.53360	0.75125	0.19768	0.74626						
sk36	Repairing			-0.29723	-0.28951	-0.29587	-0.22625	-0.02738	0.37803
0.35997	0.77425	-0.09356	0.49015						
sk37	Visioning			0.89562	0.90005	0.88750	0.89730	0.71989	0.28481
0.37107	-0.06994	0.51457	0.29489						
sk38	Systems perceptions			0.80732	0.83640	0.82301	0.84563	0.63229	0.24628
0.33802	-0.03749	0.46649	0.34162						
sk39	Identification of downstream consequences			0.84584	0.87518	0.86178	0.87379	0.69442	0.25511
0.35486	-0.07793	0.48974	0.30550						
sk40	Identification of key causes			0.88362	0.90132	0.89013	0.91885	0.69308	0.27344
0.34075	-0.07571	0.45739	0.29300						
sk41	Judgment and decision making			0.86573	0.89463	0.87574	0.89530	0.63495	0.23549
0.31488	-0.15190	0.43180	0.25262						
sk42	Systems evaluation			0.81496	0.85235	0.84761	0.86235	0.70602	0.27267
0.34388	-0.05233	0.48060	0.33179						
sk43	Time management			0.79196	0.80073	0.84101	0.79836	0.59862	0.17592
0.24535	-0.16922	0.33080	0.09790						
sk44	Management of financial resources			0.63900	0.65053	0.69759	0.64262	0.52142	0.05276
0.10844	-0.18460	0.30393	-0.03544						
sk45	Management of material resources			0.64534	0.65399	0.72234	0.65687	0.66609	0.32205
0.42277	0.06637	0.34191	0.23125						
sk46	Management of personnel resources			0.67398	0.69143	0.74165	0.67345	0.56086	0.13504
0.25656	-0.12048	0.29284	0.09335						

Correlations

	sk37	sk38	sk39	sk40	sk31	sk32	sk33	sk34	sk35	sk36
sk1	Reading comprehension				-0.11502	-0.19798	0.21967	-0.35411	-0.07411	-0.35764
0.76153	0.72650	0.75599	0.78161							
sk2	Active listening				-0.26873	-0.33239	0.00938	-0.43859	-0.16985	-0.42509
0.70895	0.68725	0.70233	0.75926							
sk3	Writing				-0.16397	-0.25625	0.16781	-0.38256	-0.10695	-0.38253
0.74226	0.72258	0.75286	0.77176							
sk4	Speaking				-0.23752	-0.30130	0.05239	-0.41767	-0.14902	-0.40991
0.74674	0.72373	0.73880	0.78905							
sk5	Mathematics				0.09295	-0.01152	0.39722	-0.11721	0.15545	-0.12161
0.63809	0.62427	0.67285	0.63994							
sk6	Science				0.37713	0.22431	0.44565	0.13702	0.35281	0.09946
0.46952	0.48873	0.51010	0.47468							
sk7	Critical thinking				-0.06972	-0.15854	0.25640	-0.28710	0.00523	-0.27915
0.85347	0.83556	0.85532	0.86788							
sk8	Active learning				-0.10901	-0.19138	0.28031	-0.32753	-0.02658	-0.31239
0.86258	0.80482	0.84198	0.85190							
sk9	Learning strategies				-0.14815	-0.18708	0.19727	-0.29441	-0.06894	-0.28786
0.79499	0.72153	0.75465	0.78906							
sk10	Monitoring				-0.10250	-0.15208	0.24775	-0.31893	-0.03747	-0.30241
0.82945	0.78662	0.80929	0.83849							
sk11	Social Perceptiveness				-0.37876	-0.39211	-0.10762	-0.45295	-0.27226	-0.43239
0.62263	0.58436	0.59750	0.68366							
sk12	Coordination				-0.11576	-0.12773	0.12185	-0.24822	-0.02374	-0.26246
0.76136	0.74267	0.73940	0.74375							
sk13	Persuasion				-0.29688	-0.32926	0.04267	-0.41030	-0.18256	-0.39522
0.73940	0.69829	0.74371	0.77677							
sk14	Negotiation				-0.29866	-0.32347	0.06934	-0.37286	-0.17251	-0.36329
0.70782	0.68049	0.73223	0.73927							
sk15	Instructing				-0.09677	-0.12941	0.12422	-0.22130	-0.01988	-0.23584
0.68848	0.64317	0.65777	0.68186							
sk16	Service orientation				-0.35825	-0.33261	-0.18289	-0.33512	-0.21012	-0.29330
0.36040	0.34535	0.35585	0.46413							

sk17	Problem identification			0.03471	-0.06794	0.33044	-0.12967	0.17744	-0.10480
0.80326	0.82201	0.82759	0.87178						
sk18	Information gathering			-0.13670	-0.22037	0.24206	-0.34624	-0.06209	-0.33050
0.80711	0.79383	0.82794	0.83021						
sk19	Information organization			-0.17635	-0.23426	0.23090	-0.40112	-0.10260	-0.38490
0.77673	0.73165	0.76496	0.77882						

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sk37	sk38	sk39	sk40	sk31	sk32	sk33	sk34	sk35	sk36
sk20	Synthesis/Reorganization			-0.16752	-0.23638	0.25805	-0.38048	-0.08566	-0.36034
0.82864	0.76409	0.80198	0.82273						
sk21	Idea generation			-0.16870	-0.23046	0.24009	-0.33048	-0.04191	-0.29723
0.89562	0.80732	0.84584	0.88362						
sk22	Idea evaluation			-0.15423	-0.21571	0.27739	-0.32215	-0.02147	-0.28951
0.90005	0.83640	0.87518	0.90132						
sk23	Implementation planning			-0.18295	-0.21395	0.24795	-0.31898	-0.02748	-0.29587
0.88750	0.82301	0.86178	0.89013						
sk24	Solution appraisal			-0.09436	-0.15908	0.33929	-0.26035	0.05250	-0.22625
0.89730	0.84563	0.87379	0.91885						
sk25	Operations analysis			0.07186	0.00645	0.55106	-0.04535	0.26896	-0.02738
0.71989	0.63229	0.69442	0.69308						
sk26	Technical design			0.39013	0.30574	0.54161	0.36887	0.58690	0.37803
0.28481	0.24628	0.25511	0.27344						
sk27	Equipment selection			0.45237	0.40513	0.58882	0.37998	0.53360	0.35997
0.37107	0.33802	0.35486	0.34075						
sk28	Installation			0.51435	0.45590	0.45713	0.72537	0.75125	0.77425
0.06994	-0.03749	-0.07793	-0.07571						
sk29	Programming			0.10157	0.02731	0.23313	-0.09202	0.19768	-0.09356
0.51457	0.46649	0.48974	0.45739						
sk30	Testing			0.64211	0.46879	0.65162	0.51641	0.74626	0.49015
0.29489	0.34162	0.30550	0.29300						
sk31	Operation monitoring			1.00000	0.86455	0.41012	0.72793	0.71921	0.59960
0.08973	0.07131	-0.03828	-0.09248						
sk32	Operation and control			0.86455	1.00000	0.33634	0.66699	0.60926	0.55659
0.15536	-0.01693	-0.11406	-0.15286						
sk33	Product inspection			0.41012	0.33634	1.00000	0.37246	0.52486	0.35486
0.31436	0.31294	0.31686	0.31462						
sk34	Equipment maintenance			0.72793	0.66699	0.37246	1.00000	0.79273	0.88797
0.25015	-0.11377	-0.21474	-0.23719						
sk35	Troubleshooting			0.71921	0.60926	0.52486	0.79273	1.00000	0.77821
0.04466	0.15046	0.06515	0.06712						
sk36	Repairing			0.59960	0.55659	0.35486	0.88797	0.77821	1.00000
0.23565	-0.14116	-0.21649	-0.20252						
sk37	Visioning			-0.08973	-0.15536	0.31436	-0.25015	0.04466	-0.23565
1.00000	0.88800	0.89723	0.89771						
sk38	Systems perceptions			0.07131	-0.01693	0.31294	-0.11377	0.15046	-0.14116
0.88800	1.00000	0.92306	0.87623						
sk39	Identification of downstream consequences			-0.03828	-0.11406	0.31686	-0.21474	0.06515	-0.21649
0.89723	0.92306	1.00000	0.90504						
sk40	Identification of key causes			-0.09248	-0.15286	0.31462	-0.23719	0.06712	-0.20252
0.89771	0.87623	0.90504	1.00000						
sk41	Judgment and decision making			-0.09945	-0.16116	0.26597	-0.29460	0.01101	-0.28112
0.87684	0.87325	0.89200	0.91399						
sk42	Systems evaluation			-0.02183	-0.10752	0.33762	-0.18043	0.12175	-0.17794
0.88097	0.90231	0.92115	0.88904						
sk43	Time management			-0.18309	-0.18897	0.20137	-0.29355	-0.05112	-0.27865
0.79918	0.75412	0.76987	0.80743						
sk44	Management of financial resources			-0.27772	-0.27572	0.12578	-0.31859	-0.13430	-0.28957
0.67436	0.63068	0.69353	0.66697						
sk45	Management of material resources			-0.02341	-0.03233	0.34880	-0.06555	0.14181	-0.07220
0.68423	0.64352	0.67889	0.66782						
sk46	Management of personnel resources			-0.09963	-0.08966	0.20729	-0.19512	0.00262	-0.20356
0.70109	0.68140	0.70180	0.69041						

Correlations

sk45	sk46	sk41	sk42	sk43	sk44
0.53400	sk1 Reading comprehension	0.80391	0.73626	0.69343	0.56599
	0.57352				
0.51313	sk2 Active listening	0.78091	0.69893	0.72878	0.60071
	0.59727				
0.54715	sk3 Writing	0.78053	0.74437	0.70600	0.61365
	0.60495				
0.56792	sk4 Speaking	0.80395	0.73848	0.77252	0.63679
	0.66278				
0.49214	sk5 Mathematics	0.65169	0.67101	0.49497	0.50563
	0.42792				
0.35050	sk6 Science	0.48092	0.47677	0.29679	0.15831
	0.25806				
0.59611	sk7 Critical thinking	0.89609	0.82854	0.74408	0.60193
	0.62557				
0.60743	sk8 Active learning	0.86668	0.81281	0.74217	0.59569
	0.62309				
0.60607	sk9 Learning strategies	0.74555	0.73380	0.77563	0.58134
	0.68887				
0.61742	sk10 Monitoring	0.82688	0.80944	0.78450	0.62712
	0.68566				
0.51489	sk11 Social Perceptiveness	0.66462	0.60034	0.73984	0.61019
	0.63391				
0.69439	sk12 Coordination	0.75224	0.73281	0.82418	0.66682
	0.80040				
0.60699	sk13 Persuasion	0.76099	0.72404	0.75078	0.70788
	0.64085				
0.66002	sk14 Negotiation	0.72660	0.71215	0.74756	0.77915
	0.69308				
0.60042	sk15 Instructing	0.64610	0.64991	0.75610	0.54825
	0.73979				

0.39134	sk16	Service orientation	0.43108	0.35307	0.52434	0.47419
	0.42058					
	sk17	Problem identification	0.86347	0.82815	0.70539	0.59266
0.59087	0.59367					
	sk18	Information gathering	0.86498	0.80909	0.70611	0.60368
0.55239	0.57838					
	sk19	Information organization	0.80329	0.74690	0.69236	0.56050
0.52340	0.55933					
	sk20	Synthesis/Reorganization	0.83273	0.77290	0.72228	0.57178
0.55174	0.58776					
	sk21	Idea generation	0.86573	0.81496	0.79196	0.63900
0.64534	0.67398					
	sk22	Idea evaluation	0.89463	0.85235	0.80073	0.65053
0.65399	0.69143					
	sk23	Implementation planning	0.87574	0.84761	0.84101	0.69759
0.72234	0.74165					
	sk24	Solution appraisal	0.89530	0.86235	0.79836	0.64262
0.65687	0.67345					
	sk25	Operations analysis	0.63495	0.70602	0.59862	0.52142
0.66609	0.56086					
	sk26	Technical design	0.23549	0.27267	0.17592	0.05276
0.32205	0.13504					
	sk27	Equipment selection	0.31488	0.34388	0.24535	0.10844
0.42277	0.25656					
	sk28	Installation	-0.15190	-0.05233	-0.16922	-0.18460
0.06637	-0.12048					
	sk29	Programming	0.43180	0.48060	0.33080	0.30393
0.34191	0.29284					
	sk30	Testing	0.25262	0.33179	0.09790	-0.03544
0.23125	0.09335					
	sk31	Operation monitoring	-0.09945	-0.02183	-0.18309	-0.27772
0.02341	-0.09963					
	sk32	Operation and control	-0.16116	-0.10752	-0.18897	-0.27572
0.03233	-0.08966					
	sk33	Product inspection	0.26597	0.33762	0.20137	0.12578
0.34880	0.20729					
	sk34	Equipment maintenance	-0.29460	-0.18043	-0.29355	-0.31859
0.06555	-0.19512					
	sk35	Troubleshooting	0.01101	0.12175	-0.05112	-0.13430
0.14181	0.00262					
	sk36	Repairing	-0.28112	-0.17794	-0.27865	-0.28957
0.07220	-0.20356					
	sk37	Visioning	0.87684	0.88097	0.79918	0.67436
0.68423	0.70109					
	sk38	Systems perceptions	0.87325	0.90231	0.75412	0.63068
0.64352	0.68140					
	sk39	Identification of downstream consequences	0.89200	0.92115	0.76987	0.69353
0.67889	0.70180					
	sk40	Identification of key causes	0.91399	0.88904	0.80743	0.66697
0.66782	0.69041					
	sk41	Judgment and decision making	1.00000	0.87633	0.78393	0.65988
0.62752	0.66456					
	sk42	Systems evaluation	0.87633	1.00000	0.77374	0.69758
0.68750	0.73077					
	sk43	Time management	0.78393	0.77374	1.00000	0.75740
0.75754	0.86621					
	sk44	Management of financial resources	0.65988	0.69758	0.75740	1.00000
0.76330	0.74147					
	sk45	Management of material resources	0.62752	0.68750	0.75754	0.76330
1.00000	0.77301					
	sk46	Management of personnel resources	0.66456	0.73077	0.86621	0.74147
0.77301	1.00000					

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 46 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	26.2324700	18.9617640	0.5703	0.5703
2	7.2707059	5.1672624	0.1581	0.7283
3	2.1034435	0.7995982	0.0457	0.7741
4	1.3038453	0.2219616	0.0283	0.8024
5	1.0818837	0.2201610	0.0235	0.8259
6	0.8617228	0.1309383	0.0187	0.8447
7	0.7307844	0.1355254	0.0159	0.8605
8	0.5952590	0.1127168	0.0129	0.8735
9	0.4825421	0.0201573	0.0105	0.8840
10	0.4623848	0.0203570	0.0101	0.8940
11	0.4420278	0.0726297	0.0096	0.9036
12	0.3693980	0.0440620	0.0080	0.9117
13	0.3253361	0.0237974	0.0071	0.9187
14	0.3015387	0.0298731	0.0066	0.9253
15	0.2716656	0.0373640	0.0059	0.9312
16	0.2343016	0.0278749	0.0051	0.9363
17	0.2064267	0.0065294	0.0045	0.9408
18	0.1998973	0.0139820	0.0043	0.9451
19	0.1859154	0.0119004	0.0040	0.9492
20	0.1740150	0.0159670	0.0038	0.9529
21	0.1580480	0.0100448	0.0034	0.9564
22	0.1480032	0.0060626	0.0032	0.9596
23	0.1419406	0.0199269	0.0031	0.9627
24	0.1220137	0.0044369	0.0027	0.9653
25	0.1175769	0.0032748	0.0026	0.9679
26	0.1143020	0.0077696	0.0025	0.9704
27	0.1065324	0.0032243	0.0023	0.9727
28	0.1033081	0.0039522	0.0022	0.9749
29	0.0993559	0.0088376	0.0022	0.9771
30	0.0905183	0.0020534	0.0020	0.9791
31	0.0884649	0.0070135	0.0019	0.9810
32	0.0814514	0.0020261	0.0018	0.9828
33	0.0794254	0.0036351	0.0017	0.9845
34	0.0757903	0.0032068	0.0016	0.9861

35	0.0725835	0.0042784	0.0016	0.9877
36	0.0683051	0.0049123	0.0015	0.9892
37	0.0633928	0.0023766	0.0014	0.9906
38	0.0610162	0.0039051	0.0013	0.9919
39	0.0571111	0.0002364	0.0012	0.9931
40	0.0568746	0.0021911	0.0012	0.9944
41	0.0546835	0.0043676	0.0012	0.9956
42	0.0503159	0.0057735	0.0011	0.9967
43	0.0445425	0.0034302	0.0010	0.9976
44	0.0411123	0.0033293	0.0009	0.9985
45	0.0377830	0.0077981	0.0008	0.9993
46	0.0299849		0.0007	1.0000

5 factors will be retained by the MINEIGEN criterion.

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5
1	0.70257	0.67995	-0.05307	0.18774	0.07756
2	0.16862	-0.06236	0.94274	-0.21390	0.18213
3	-0.65784	0.62123	0.25292	0.32636	-0.10411
4	0.21089	-0.30733	0.21059	0.64495	-0.63306
5	-0.02723	-0.23109	-0.01071	0.62971	0.74108

Rotated Factor Pattern

Factor4	Factor5		Factor1	Factor2	Factor3
		sk1	0.81037	0.39812	-0.09674
0.22961	-0.01183	sk2	0.60369	0.49627	-0.22190
0.47191	-0.07259	sk3	0.75445	0.44454	-0.15711
0.22835	-0.04082	sk4	0.60273	0.55702	-0.18964
0.43656	-0.06807	sk5	0.73148	0.29702	0.13828
0.08466	0.18788	sk6	0.72444	0.04283	0.42183
0.00831	0.09998	sk7	0.78414	0.52305	-0.01039
0.15573	-0.01312	sk8	0.81124	0.49147	-0.04641
0.11575	0.08902	sk9	0.60581	0.56075	-0.05003
0.30038	0.06950	sk10	0.63940	0.61392	-0.04681
0.16149	-0.00661	sk11	0.33891	0.58807	-0.29954
0.59457	-0.05395	sk12	0.35477	0.77823	-0.03014
0.24099	-0.06795	sk13	0.43772	0.66969	-0.22156
0.37047	-0.01342	sk14	0.31723	0.76610	-0.22488
0.22031	-0.01863	sk15	0.41777	0.59600	0.01019
0.44434	0.01974	sk16	0.12287	0.39354	-0.22942
0.76577	0.04996	sk17	0.69083	0.53769	0.14915
0.20267	-0.01053	sk18	0.81547	0.45555	-0.10070
0.10477	0.01001	sk19	0.81566	0.40035	-0.15500
0.08715	0.06822	sk20	0.80813	0.45369	-0.12768
0.07095	0.10459	sk21	0.69570	0.60261	-0.07610
0.10842	0.13932	sk22	0.70985	0.61851	-0.05681
0.09371	0.12304	sk23	0.60055	0.70119	-0.06204
0.14544	0.14697	sk24	0.70181	0.61607	0.02077
0.11663	0.11073	sk25	0.53855	0.49643	0.23650
0.08179	0.50588	sk26	0.32071	0.03816	0.60231
0.08201	0.57448	sk27	0.35442	0.17906	0.61484
0.17229	0.39130	sk28	-0.12620	-0.07612	0.79003
0.00447	0.33805	sk29	0.63249	0.09862	0.14093
0.04643	0.23653	sk30	0.43654	-0.01504	0.77690
0.04814	0.15806	sk31	0.06120	-0.13202	0.85437
0.15966	-0.31277	sk32	-0.07291	-0.09015	0.77527
0.18595	-0.32958	sk33	0.27274	0.21009	0.55958
0.30134	0.31130	sk34	-0.28216	-0.11821	0.87746
0.03674	-0.06087	sk35	0.01581	0.01345	0.91731

0.01008	0.07817	sk36	Repairing	-0.29476	-0.11553	0.83054
0.00761	0.05971	sk37	Visioning	0.62884	0.69158	0.01159
0.01431	0.08695	sk38	Systems perceptions	0.60709	0.68819	0.13441
0.01022	-0.12691	sk39	Identification of downstream consequences	0.63260	0.69989	0.04168
0.02148	-0.00486	sk40	Identification of key causes	0.63064	0.68354	0.03003
0.12278	0.04113	sk41	Judgment and decision making	0.67587	0.64331	-0.02810
0.07837	-0.03467	sk42	Systems evaluation	0.59602	0.71560	0.07548
0.00611	0.00831	sk43	Time management	0.37681	0.82029	-0.07241
0.18868	0.06553	sk44	Management of financial resources	0.21976	0.81487	-0.18712
0.04488	0.13614	sk45	Management of material resources	0.21801	0.81102	0.13693
0.04961	0.26759	sk46	Management of personnel resources	0.22479	0.86063	0.00129
0.09997	0.03544					

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
14.124091	13.148916	6.728256	2.452611	1.538474

Final Communality Estimates: Total = 37.992348

sk10	sk1	sk11	sk2	sk12	sk3	sk4	sk5	sk6	sk7	sk8	sk9
	0.87740980	0.88793416	0.84530561	0.90473562	0.68487342	0.71465033	0.91299203	0.92312153	0.77900270		
	0.81404618	0.90682051	0.79511071								
sk22	sk13	sk23	sk14	sk24	sk15	sk16	sk17	sk18	sk19	sk20	sk21
	0.82660607	0.78699606	0.72768530	0.81151027	0.82979388	0.89373440	0.86186066	0.89118887	0.88409080		
	0.91359632	0.89892814	0.89837633								
sk34	sk25	sk35	sk26	sk36	sk27	sk28	sk29	sk30	sk31	sk32	sk33
	0.85501819	0.80383652	0.71850367	0.76017072	0.48772862	0.82166215	0.87443289	0.75769035	0.61936356		
	0.86858278	0.84810196	0.79364736								
sk45	sk37	sk38	sk39	sk40	sk41	sk42	sk43	sk44			
	0.79809802	0.88162437	0.87644034	0.89225049	0.88259349	0.87877501	0.87311961	0.85999760	0.76787350		
		0.80246751									

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure

Means and Standard Deviations from 1122 Observations

Correlations

SK7	SK8	SK9	SK10	SK1	SK2	SK3	SK4	SK5	SK6
SK1	Reading comprehension			1.00000	0.66521	0.82072	0.67181	0.52718	0.42290
0.76427	0.76348	0.64687	0.61455						
SK2	Active listening			0.66521	1.00000	0.71086	0.90545	0.31826	0.16030
0.66081	0.64449	0.62294	0.50812						
SK3	Writing			0.82072	0.71086	1.00000	0.74289	0.47369	0.36676
0.73021	0.72131	0.63234	0.56554						
SK4	Speaking			0.67181	0.90545	0.74289	1.00000	0.32538	0.17940
0.69083	0.66638	0.66662	0.53858						
SK5	Mathematics			0.52718	0.31826	0.47369	0.32538	1.00000	0.50007
0.52806	0.51325	0.36341	0.36720						
SK6	Science			0.42290	0.16030	0.36676	0.17940	0.50007	1.00000
0.55119	0.54439	0.42229	0.34206						
SK7	Critical thinking			0.76427	0.66081	0.73021	0.69083	0.52806	0.55119
1.00000	0.90948	0.76021	0.68780						
SK8	Active learning			0.76348	0.64449	0.72131	0.66638	0.51325	0.54439
0.90948	1.00000	0.80413	0.70971						
SK9	Learning strategies			0.64687	0.62294	0.63234	0.66662	0.36341	0.42229
0.76021	0.80413	1.00000	0.71430						
SK10	Monitoring			0.61455	0.50812	0.56554	0.53858	0.36720	0.34206
0.68780	0.70971	0.71430	1.00000						
SK11	Social Perceptiveness			0.49788	0.81201	0.59054	0.84587	0.15854	0.02685
0.54018	0.52952	0.61218	0.47913						
SK12	Coordination			0.50920	0.69130	0.54977	0.73499	0.25820	0.15810
0.63783	0.60542	0.62495	0.56605						
SK13	Persuasion			0.55591	0.70290	0.62311	0.75297	0.28792	0.14603
0.67408	0.64737	0.65600	0.52602						
SK14	Negotiation			0.51531	0.60105	0.57818	0.65469	0.31373	0.08467
0.63558	0.59588	0.55423	0.48761						
SK15	Instructing			0.50436	0.58337	0.53030	0.69169	0.23424	0.25819
0.57925	0.58778	0.80326	0.51875						
SK16	Service orientation			0.26227	0.64312	0.35722	0.62433	0.06664	-0.06593
0.25127	0.24052	0.39359	0.21617						
SK17	Problem identification			0.58136	0.49160	0.54182	0.48726	0.49681	0.47184
0.75042	0.65568	0.55904	0.57461						
SK18	Information gathering			0.81066	0.64262	0.77807	0.65574	0.56033	0.47374
0.83180	0.81153	0.63647	0.57435						
SK19	Information organization			0.71303	0.49030	0.64148	0.48405	0.52371	0.44724
0.70577	0.73048	0.61278	0.60333						

SK20	Synthesis/Reorganization			0.76071	0.60422	0.72569	0.61491	0.48256	0.43893
0.80708	0.84556	0.71670	0.65176						
SK21	Idea generation			0.66628	0.58716	0.65728	0.63666	0.40801	0.41852
0.82547	0.84940	0.77254	0.67064						
SK22	Idea evaluation			0.69981	0.60403	0.67173	0.63987	0.46378	0.46643
0.86778	0.87291	0.78111	0.71975						
SK23	Implentation planning			0.64092	0.62236	0.63560	0.68228	0.41488	0.35889
0.79724	0.80422	0.75936	0.64160						
SK24	Solution appraisal			0.69646	0.55340	0.62840	0.56746	0.49863	0.48645
0.83347	0.81525	0.74897	0.76647						
SK25	Operations analysis			0.40937	0.23736	0.32935	0.26667	0.47430	0.42025
0.54585	0.58309	0.49150	0.45900						
SK26	Technical design			0.12094	-0.01560	-0.01035	-0.04538	0.25933	0.43773
0.21476	0.22537	0.18276	0.16721						
SK27	Equipment selection			-0.15271	-0.35712	-0.29850	-0.37975	0.08736	0.38158
0.00409	0.00771	0.02515	0.04898						
SK28	Installation			-0.22653	-0.38588	-0.38243	-0.41983	-0.01417	0.11988
0.18619	-0.21065	-0.20720	-0.17193						
SK29	Programming			0.39826	0.22960	0.37926	0.22963	0.39936	0.38077
0.41396	0.41375	0.34240	0.27944						
SK30	Testing			0.16455	-0.07369	0.06090	-0.09016	0.28743	0.61784
0.25508	0.20804	0.14022	0.15382						
SK31	Operation monitoring			-0.14521	-0.33335	-0.20506	-0.32122	0.02256	0.31083
0.09911	-0.17317	-0.16391	-0.02992						
SK32	Operation and control			-0.30150	-0.46549	-0.37737	-0.46558	-0.10990	0.10378
0.29288	-0.34321	-0.29423	-0.12332						
SK33	Product inspection			0.13273	-0.18585	0.01819	-0.19274	0.24632	0.28371
0.13366	0.13024	0.06714	0.24634						
SK34	Equipment maintenance			-0.33396	-0.44242	-0.37478	-0.44809	-0.15680	0.08621
0.28119	-0.33251	-0.28209	-0.24405						
SK35	Troubleshooting			-0.09584	-0.21929	-0.15437	-0.22423	0.06801	0.28850
0.01271	-0.06399	-0.08474	-0.03525						
SK36	Repairing			-0.31534	-0.40687	-0.36403	-0.41956	-0.12806	0.07424
0.23610	-0.27242	-0.24967	-0.19564						
SK37	Visioning			0.64241	0.57055	0.59620	0.60447	0.44865	0.39074
0.82760	0.81502	0.74433	0.68758						
SK38	Systems perceptions			0.63203	0.56743	0.61579	0.59745	0.45030	0.44021
0.82086	0.76769	0.67839	0.65486						
SK39	Identification of downstream consequences			0.65982	0.57760	0.64635	0.61725	0.51113	0.45532
0.84082	0.80151	0.71039	0.67301						
SK40	Identification of key causes			0.63320	0.60035	0.60805	0.62692	0.44309	0.42779
0.83144	0.77597	0.70735	0.70385						
SK41	Judgment and decision making			0.66143	0.64414	0.64390	0.67594	0.44437	0.40455
0.86832	0.78890	0.67361	0.63840						
SK42	Systems evaluation			0.63279	0.55608	0.63848	0.59711	0.51875	0.43741
0.81424	0.77392	0.68103	0.64880						
SK43	Time management			0.55868	0.62554	0.58505	0.68643	0.28265	0.17467
0.65944	0.65361	0.69356	0.62493						
SK44	Management of financial resources			0.45842	0.49846	0.53057	0.54602	0.42789	0.07021
0.52251	0.51673	0.46162	0.43123						
SK45	Management of material resources			0.37541	0.37291	0.39078	0.42701	0.33867	0.26715
0.50338	0.50798	0.49633	0.44671						
SK46	Management of personnel resources			0.45414	0.48033	0.50162	0.58572	0.27520	0.18152
0.57921	0.55734	0.62514	0.52641						

Correlations

SK17	SK18	SK19	SK20	SK11	SK12	SK13	SK14	SK15	SK16
SK1	Reading comprehension			0.49788	0.50920	0.55591	0.51531	0.50436	0.26227
0.58136	0.81066	0.71303	0.76071						
SK2	Active listening			0.81201	0.69130	0.70290	0.60105	0.58337	0.64312
0.49160	0.64262	0.49030	0.60422						
SK3	Writing			0.59054	0.54977	0.62311	0.57818	0.53030	0.35722
0.54182	0.77807	0.64148	0.72569						
SK4	Speaking			0.84587	0.73499	0.75297	0.65469	0.69169	0.62433
0.48726	0.65574	0.48405	0.61491						
SK5	Mathematics			0.15854	0.25820	0.28792	0.31373	0.23424	0.06664
0.49681	0.56033	0.52371	0.48256						
SK6	Science			0.02685	0.15810	0.14603	0.08467	0.25819	-0.06593
0.47184	0.47374	0.44724	0.43893						
SK7	Critical thinking			0.54018	0.63783	0.67408	0.63558	0.57925	0.25127
0.75042	0.83180	0.70577	0.80708						
SK8	Active learning			0.52952	0.60542	0.64737	0.59588	0.58778	0.24052
0.65568	0.81153	0.73048	0.84556						
SK9	Learning strategies			0.61218	0.62495	0.65600	0.55423	0.80326	0.39359
0.55904	0.63647	0.61278	0.71670						

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE

The FACTOR Procedure

				Correlations					
SK17	SK18	SK19	SK20	SK11	SK12	SK13	SK14	SK15	SK16
SK10	Monitoring			0.47913	0.56605	0.52602	0.48761	0.51875	0.21617
0.57461	0.57435	0.60333	0.65176						
SK11	Social Perceptiveness			1.00000	0.67633	0.75749	0.64237	0.64831	0.77985
0.37318	0.47120	0.33398	0.46838						
SK12	Coordination			0.67633	1.00000	0.65158	0.65738	0.61614	0.43659
0.44785	0.49223	0.39461	0.54010						
SK13	Persuasion			0.75749	0.65158	1.00000	0.85484	0.63814	0.52746
0.48413	0.57462	0.43392	0.58232						
SK14	Negotiation			0.64237	0.65738	0.85484	1.00000	0.52514	0.39642
0.46248	0.53069	0.38839	0.54213						
SK15	Instructing			0.64831	0.61614	0.63814	0.52514	1.00000	0.48163
0.41673	0.45773	0.37168	0.49058						
SK16	Service orientation			0.77985	0.43659	0.52746	0.39642	0.48163	1.00000
0.23682	0.23876	0.12688	0.19179						
SK17	Problem identification			0.37318	0.44785	0.48413	0.46248	0.41673	0.23682
1.00000	0.70585	0.58389	0.56174						
SK18	Information gathering			0.47120	0.49223	0.57462	0.53069	0.45773	0.23876
0.70585	1.00000	0.81818	0.79209						

SK19	Information organization			0.33398	0.39461	0.43392	0.38839	0.37168	0.12688
0.58389	0.81818	1.00000	0.81686						
SK20	Synthesis/Reorganization			0.46838	0.54010	0.58232	0.54213	0.49058	0.19179
0.56174	0.79209	0.81686	1.00000						
SK21	Idea generation			0.53819	0.62426	0.67048	0.63566	0.59098	0.25638
0.58723	0.70885	0.63419	0.81658						
SK22	Idea evaluation			0.52576	0.64370	0.66581	0.62807	0.57497	0.25216
0.67911	0.75907	0.69962	0.82028						
SK23	Implentation planning			0.58443	0.70588	0.68731	0.65093	0.66621	0.32563
0.58724	0.67717	0.57287	0.74233						
SK24	Solution appraisal			0.45124	0.55327	0.58218	0.53218	0.52855	0.21414
0.75737	0.74298	0.70555	0.76366						
SK25	Operations analysis			0.14699	0.34570	0.35127	0.35618	0.34510	0.00080
0.46174	0.46876	0.48779	0.55394						
SK26	Technical design			-0.10792	0.00791	-0.02546	-0.07370	0.11141	-0.06279
0.28074	0.15995	0.22213	0.18465						
SK27	Equipment selection			-0.41005	-0.14379	-0.25983	-0.25820	-0.07085	-0.34625
0.11455	-0.10062	0.06326	-0.05809						
SK28	Installation			-0.41999	-0.26401	-0.33012	-0.29718	-0.20489	-0.32222
0.04379	-0.21178	-0.12250	-0.26245						
SK29	Programming			0.11544	0.18202	0.20081	0.17609	0.24161	0.02058
0.28804	0.38171	0.39348	0.45453						
SK30	Testing			-0.22329	-0.05345	-0.08967	-0.11979	0.04599	-0.22135
0.43336	0.22801	0.23260	0.12402						
SK31	Operation monitoring			-0.40926	-0.17698	-0.33545	-0.32192	-0.16895	-0.34836
0.10337	-0.12135	-0.10305	-0.22910						
SK32	Operation and control			-0.49856	-0.26814	-0.45570	-0.42857	-0.27595	-0.37579
0.11030	-0.31122	-0.23140	-0.36147						
SK33	Product inspection			-0.27417	-0.06745	-0.09037	-0.02679	-0.04940	-0.29526
0.28078	0.15113	0.26829	0.12490						
SK34	Equipment maintenance			-0.44858	-0.28360	-0.39945	-0.36280	-0.25252	-0.31372
0.01315	-0.30449	-0.25867	-0.39769						
SK35	Troubleshooting			-0.30874	-0.10849	-0.21725	-0.18886	-0.09322	-0.24247
0.30493	-0.02934	-0.03080	-0.14601						
SK36	Repairing			-0.42151	-0.28025	-0.36471	-0.32367	-0.24632	-0.29211
0.07235	-0.24842	-0.19338	-0.33475						
SK37	Visioning			0.49251	0.67624	0.65031	0.63713	0.58515	0.22536
0.65611	0.69031	0.61182	0.74436						
SK38	Systems perceptions			0.46066	0.66197	0.59482	0.58517	0.53406	0.20289
0.72235	0.71147	0.59627	0.67121						
SK39	Identification of downstream consequences			0.48074	0.65506	0.66543	0.66529	0.55360	0.23636
0.69719	0.72972	0.62618	0.72441						
SK40	Identification of key causes			0.53447	0.63803	0.66376	0.63042	0.54241	0.30984
0.75914	0.70804	0.60034	0.68625						
SK41	Judgment and decision making			0.54692	0.65975	0.65616	0.63508	0.53357	0.30010
0.72420	0.75425	0.60813	0.69621						
SK42	Systems evaluation			0.45010	0.62971	0.61676	0.61996	0.54165	0.19331
0.71053	0.72132	0.59823	0.68080						
SK43	Time management			0.65132	0.74917	0.67199	0.64945	0.64367	0.42457
0.49857	0.54350	0.45855	0.60036						
SK44	Management of financial resources			0.50856	0.58428	0.60968	0.70314	0.41833	0.35118
0.40672	0.45487	0.35560	0.47906						
SK45	Management of material resources			0.39046	0.61613	0.45691	0.54044	0.46396	0.25427
0.41098	0.38075	0.34188	0.41146						
SK46	Management of personnel resources			0.53108	0.74716	0.54596	0.60924	0.66405	0.29387
0.43249	0.43498	0.34855	0.48183						

Correlations

SK27	SK28	SK29	SK30	SK21	SK22	SK23	SK24	SK25	SK26
SK1	Reading comprehension			0.66628	0.69981	0.64092	0.69646	0.40937	0.12094
0.15271	-0.22653	0.39826	0.16455						
SK2	Active listening			0.58716	0.60403	0.62236	0.55340	0.23736	-0.01560
0.35712	-0.38588	0.22960	-0.07369						
SK3	Writing			0.65728	0.67173	0.63560	0.62840	0.32935	-0.01035
0.29850	-0.38243	0.37926	0.06090						
SK4	Speaking			0.63666	0.63987	0.68228	0.56746	0.26667	-0.04538
0.37975	-0.41983	0.22963	-0.09016						
SK5	Mathematics			0.40801	0.46378	0.41488	0.49863	0.47430	0.25933
0.08736	-0.01417	0.39936	0.28743						
SK6	Science			0.41852	0.46643	0.35889	0.48645	0.42025	0.43773
0.38158	0.11988	0.38077	0.61784						
SK7	Critical thinking			0.82547	0.86778	0.79724	0.83347	0.54585	0.21476
0.00409	-0.18619	0.41396	0.25508						
SK8	Active learning			0.84940	0.87291	0.80422	0.81525	0.58309	0.22537
0.00771	-0.21065	0.41375	0.20804						
SK9	Learning strategies			0.77254	0.78111	0.75936	0.74897	0.49150	0.18276
0.02515	-0.20720	0.34240	0.14022						
SK10	Monitoring			0.67064	0.71975	0.64160	0.76647	0.45900	0.16721
0.04898	-0.17193	0.27944	0.15382						
SK11	Social Perceptiveness			0.53819	0.52576	0.58443	0.45124	0.14699	-0.10792
0.41005	-0.41999	0.11544	-0.22329						
SK12	Coordination			0.62426	0.64370	0.70588	0.55327	0.34570	0.00791
0.14379	-0.26401	0.18202	-0.05345						
SK13	Persuasion			0.67048	0.66581	0.68731	0.58218	0.35127	-0.02546
0.25983	-0.33012	0.20081	-0.08967						
SK14	Negotiation			0.63566	0.62807	0.65093	0.53218	0.35618	-0.07370
0.25820	-0.29718	0.17609	-0.11979						
SK15	Instructing			0.59098	0.57497	0.66621	0.52855	0.34510	0.11141
0.07085	-0.20489	0.24161	0.04599						
SK16	Service orientation			0.25638	0.25216	0.32563	0.21414	0.00080	-0.06279
0.34625	-0.32222	0.02058	-0.22135						
SK17	Problem identification			0.58723	0.67911	0.58724	0.75737	0.46174	0.28074
0.11455	0.04379	0.28804	0.43336						
SK18	Information gathering			0.70885	0.75907	0.67717	0.74298	0.46876	0.15995
0.10062	-0.21178	0.38171	0.22801						
SK19	Information organization			0.63419	0.69962	0.57287	0.70555	0.48779	0.22213
0.06326	-0.12250	0.39348	0.23260						
SK20	Synthesis/Reorganization			0.81658	0.82028	0.74233	0.76366	0.55394	0.18465
0.05809	-0.26245	0.45453	0.12402						
SK21	Idea generation			1.00000	0.92207	0.86357	0.81110	0.62668	0.21721
0.02567	-0.19997	0.39819	0.14875						
SK22	Idea evaluation			0.92207	1.00000	0.86251	0.85941	0.65566	0.25664
0.06126	-0.17300	0.38455	0.21156						
SK23	Implentation planning			0.86357	0.86251	1.00000	0.77783	0.63632	0.19143

0.00820	-0.19816	0.35966	0.09087						
SK24	Solution appraisal			0.81110	0.85941	0.77783	1.00000	0.63183	0.28795
0.12331	-0.07984	0.38635	0.31656						
SK25	Operations analysis			0.62668	0.65566	0.63632	0.63183	1.00000	0.58899
0.37189	0.14952	0.41295	0.36854						
SK26	Technical design			0.21721	0.25664	0.19143	0.28795	0.58899	1.00000
0.59845	0.49031	0.29826	0.58872						
SK27	Equipment selection			0.02567	0.06126	-0.00820	0.12331	0.37189	0.59845
1.00000	0.60387	0.10238	0.53816						
SK28	Installation			-0.19997	-0.17300	-0.19816	-0.07984	0.14952	0.49031
0.60387	1.00000	0.00317	0.54282						
SK29	Programming			0.39819	0.38455	0.35966	0.38635	0.41295	0.29826
0.10238	0.00317	1.00000	0.27154						
SK30	Testing			0.14875	0.21156	0.09087	0.31656	0.36854	0.58872
0.53816	0.54282	0.27154	1.00000						
SK31	Operation monitoring			-0.21142	-0.16095	-0.25318	-0.05919	0.00840	0.34546
0.47164	0.45241	0.05667	0.61594						
SK32	Operation and control			-0.34472	-0.30478	-0.34942	-0.20559	-0.07393	0.24060
0.49439	0.41271	-0.06944	0.37713						
SK33	Product inspection			0.10463	0.17494	0.06325	0.30983	0.42990	0.36627
0.47580	0.34884	0.10494	0.49699						
SK34	Equipment maintenance			-0.31733	-0.28795	-0.34344	-0.20856	-0.09185	0.30844
0.51703	0.65168	-0.12921	0.50638						
SK35	Troubleshooting			-0.06556	-0.01524	-0.09311	0.08178	0.17912	0.49251
0.53114	0.68454	0.10893	0.73486						
SK36	Repairing			-0.24548	-0.21072	-0.28164	-0.12534	-0.01653	0.36140
0.53371	0.74148	-0.11773	0.51765						
SK37	Visioning			0.83674	0.85200	0.83712	0.81661	0.62467	0.22112
0.06455	-0.12870	0.37923	0.21100						
SK38	Systems perceptions			0.73799	0.78566	0.74900	0.76485	0.51572	0.17386
0.03659	-0.11684	0.35013	0.28468						
SK39	Identification of downstream consequences			0.78829	0.84051	0.79570	0.79544	0.57940	0.17883
0.02529	-0.16980	0.38803	0.22503						
SK40	Identification of key causes			0.79910	0.84739	0.78950	0.84130	0.56962	0.22587
0.07249	-0.10783	0.32726	0.26522						
SK41	Judgment and decision making			0.75938	0.82256	0.76923	0.77980	0.48575	0.14691
0.02552	-0.22452	0.29051	0.17073						
SK42	Systems evaluation			0.74478	0.80104	0.77544	0.77737	0.60159	0.20191
0.02969	-0.11280	0.39491	0.28268						
SK43	Time management			0.70811	0.70736	0.78746	0.66016	0.44909	0.05310
0.08302	-0.26882	0.19528	-0.03099						
SK44	Management of financial resources			0.55094	0.56018	0.61116	0.48429	0.40221	-0.05392
0.19830	-0.26400	0.18524	-0.12040						
SK45	Management of material resources			0.54834	0.54988	0.62884	0.51067	0.56648	0.24709
0.18967	0.00364	0.21207	0.13596						
SK46	Management of personnel resources			0.61033	0.61418	0.69010	0.53539	0.44482	0.02220
0.03844	-0.20897	0.18663	-0.01420						

Correlations

	SK37	SK38	SK39	SK40	SK31	SK32	SK33	SK34	SK35	SK36
SK1	Reading comprehension				-0.14521	-0.30150	0.13273	-0.33396	-0.09584	-0.31534
0.64241	0.63203	0.65982	0.63320							
SK2	Active listening				-0.33335	-0.46549	-0.18585	-0.44242	-0.21929	-0.40687
0.57055	0.56743	0.57760	0.60035							
SK3	Writing				-0.20506	-0.37737	0.01819	-0.37478	-0.15437	-0.36403
0.59620	0.61579	0.64635	0.60805							
SK4	Speaking				-0.32122	-0.46558	-0.19274	-0.44809	-0.22423	-0.41956
0.60447	0.59745	0.61725	0.62692							
SK5	Mathematics				0.02256	-0.10990	0.24632	-0.15680	0.06801	-0.12806
0.44865	0.45030	0.51113	0.44309							
SK6	Science				0.31083	0.10378	0.28371	0.08621	0.28850	0.07424
0.39074	0.44021	0.45532	0.42779							
SK7	Critical thinking				-0.09911	-0.29288	0.13366	-0.28119	0.01271	-0.23610
0.82760	0.82086	0.84082	0.83144							
SK8	Active learning				-0.17317	-0.34321	0.13024	-0.33251	-0.06399	-0.27242
0.81502	0.76769	0.80151	0.77597							
SK9	Learning strategies				-0.16391	-0.29423	0.06714	-0.28209	-0.08474	-0.24967
0.74433	0.67839	0.71039	0.70735							
SK10	Monitoring				-0.02992	-0.12332	0.24634	-0.24405	-0.03525	-0.19564
0.68758	0.65486	0.67301	0.70385							
SK11	Social Perceptiveness				-0.40926	-0.49856	-0.27417	-0.44858	-0.30874	-0.42151
0.49251	0.46066	0.48074	0.53447							
SK12	Coordination				-0.17698	-0.26814	-0.06745	-0.28360	-0.10849	-0.28025
0.67624	0.66197	0.65506	0.63803							
SK13	Persuasion				-0.33545	-0.45570	-0.09037	-0.39945	-0.21725	-0.36471
0.65031	0.59482	0.66543	0.66376							
SK14	Negotiation				-0.32192	-0.42857	-0.02679	-0.36280	-0.18886	-0.32367
0.63713	0.58517	0.66529	0.63042							
SK15	Instructing				-0.16895	-0.27595	-0.04940	-0.25252	-0.09322	-0.24632
0.58515	0.53406	0.55360	0.54241							
SK16	Service orientation				-0.34836	-0.37579	-0.29526	-0.31372	-0.24247	-0.29211
0.22536	0.20289	0.23636	0.30984							
SK17	Problem identification				0.10337	-0.11030	0.28078	0.01315	0.30493	0.07235
0.65611	0.72235	0.69719	0.75914							
SK18	Information gathering				-0.12135	-0.31122	0.15113	-0.30449	-0.02934	-0.24842
0.69031	0.71147	0.72972	0.70804							
SK19	Information organization				-0.10305	-0.23140	0.26829	-0.25867	-0.03080	-0.19338
0.61182	0.59627	0.62618	0.60034							

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE

The FACTOR Procedure

	SK37	SK38	SK39	SK40	SK31	SK32	SK33	SK34	SK35	SK36
SK20	Synthesis/Reorganization				-0.22910	-0.36147	0.12490	-0.39769	-0.14601	-0.33475
0.74436	0.67121	0.72441	0.68625							
SK21	Idea generation				-0.21142	-0.34472	0.10463	-0.31733	-0.06556	-0.24548
0.83674	0.73799	0.78829	0.79910							
SK22	Idea evaluation				-0.16095	-0.30478	0.17494	-0.28795	-0.01524	-0.21072
0.85200	0.78566	0.84051	0.84739							

SK23	Implementation planning			-0.25318	-0.34942	0.06325	-0.34344	-0.09311	-0.28164
0.83712	0.74900	0.79570	0.78950						
SK24	Solution appraisal			-0.05919	-0.20559	0.30983	-0.20856	0.08178	-0.12534
0.81661	0.76485	0.79544	0.84130						
SK25	Operations analysis			0.00840	-0.07393	0.42990	-0.09185	0.17912	-0.01653
0.62467	0.51572	0.57940	0.56962						
SK26	Technical design			0.34546	0.24060	0.36627	0.30844	0.49251	0.36140
0.22112	0.17386	0.17883	0.22587						
SK27	Equipment selection			0.47164	0.49439	0.47580	0.51703	0.53114	0.53371
0.06455	0.03659	0.02529	0.07249						
SK28	Installation			0.45241	0.41271	0.34884	0.65168	0.68454	0.74148
0.12870	-0.11684	-0.16980	-0.10783						
SK29	Programming			0.05667	-0.06944	0.10494	-0.12921	0.10893	-0.11773
0.37923	0.35013	0.38803	0.32726						
SK30	Testing			0.61594	0.37713	0.49699	0.50638	0.73486	0.51765
0.21100	0.28468	0.22503	0.26522						
SK31	Operation monitoring			1.00000	0.83350	0.33069	0.68439	0.65900	0.52674
0.11436	0.06087	-0.07309	-0.05201						
SK32	Operation and control			0.83350	1.00000	0.29191	0.61238	0.48702	0.46783
0.26838	-0.14503	-0.25386	-0.21164						
SK33	Product inspection			0.33069	0.29191	1.00000	0.27629	0.37320	0.28261
0.17556	0.15408	0.16223	0.18062						
SK34	Equipment maintenance			0.68439	0.61238	0.27629	1.00000	0.78562	0.84069
0.23924	-0.10343	-0.21332	-0.17426						
SK35	Troubleshooting			0.65900	0.48702	0.37320	0.78562	1.00000	0.79428
0.03248	0.15382	0.05061	0.11076						
SK36	Repairing			0.52674	0.46783	0.28261	0.84069	0.79428	1.00000
0.19302	-0.11936	-0.19909	-0.11797						
SK37	Visioning			-0.11436	-0.26838	0.17556	-0.23924	0.03248	-0.19302
1.00000	0.86248	0.87294	0.83144						
SK38	Systems perceptions			0.06087	-0.14503	0.15408	-0.10343	0.15382	-0.11936
0.86248	1.00000	0.89810	0.83498						
SK39	Identification of downstream consequences			-0.07309	-0.25386	0.16223	-0.21332	0.05061	-0.19909
0.87294	0.89810	1.00000	0.86497						
SK40	Identification of key causes			-0.05201	-0.21164	0.18062	-0.17426	0.11076	-0.11797
0.83144	0.83498	0.86497	1.00000						
SK41	Judgment and decision making			-0.11142	-0.27217	0.11234	-0.26572	0.00571	-0.23945
0.81684	0.82735	0.84676	0.85241						
SK42	Systems evaluation			-0.01066	-0.20998	0.19592	-0.15271	0.13493	-0.13570
0.85015	0.88643	0.89904	0.83124						
SK43	Time management			-0.24771	-0.30715	0.04474	-0.30615	-0.11762	-0.26087
0.71413	0.66388	0.69112	0.70345						
SK44	Management of financial resources			-0.33352	-0.38908	0.00700	-0.33501	-0.17372	-0.27955
0.58094	0.53503	0.62049	0.52856						
SK45	Management of material resources			-0.06195	-0.12553	0.23375	-0.06987	0.08940	-0.05361
0.59112	0.53772	0.57267	0.54920						
SK46	Management of personnel resources			-0.16249	-0.21776	0.06469	-0.21820	-0.04954	-0.21289
0.64662	0.62484	0.65603	0.58965						

Correlations

SK45	SK46		SK41	SK42	SK43	SK44
	SK1	Reading comprehension	0.66143	0.63279	0.55868	0.45842
0.37541	0.45414					
	SK2	Active listening	0.64414	0.55608	0.62554	0.49846
0.37291	0.48033					
	SK3	Writing	0.64390	0.63848	0.58505	0.53057
0.39078	0.50162					
	SK4	Speaking	0.67594	0.59711	0.68643	0.54602
0.42701	0.58572					
	SK5	Mathematics	0.44437	0.51875	0.28265	0.42789
0.33867	0.27520					
	SK6	Science	0.40455	0.43741	0.17467	0.07021
0.26715	0.18152					
	SK7	Critical thinking	0.86832	0.81424	0.65944	0.52251
0.50338	0.57921					
	SK8	Active learning	0.78890	0.77392	0.65361	0.51673
0.50798	0.55734					
	SK9	Learning strategies	0.67361	0.68103	0.69356	0.46162
0.49633	0.62514					
	SK10	Monitoring	0.63840	0.64880	0.62493	0.43123
0.44671	0.52641					
	SK11	Social Perceptiveness	0.54692	0.45010	0.65132	0.50856
0.39046	0.53108					
	SK12	Coordination	0.65975	0.62971	0.74917	0.58428
0.61613	0.74716					
	SK13	Persuasion	0.65616	0.61676	0.67199	0.60968
0.45691	0.54596					
	SK14	Negotiation	0.63508	0.61996	0.64945	0.70314
0.54044	0.60924					
	SK15	Instructing	0.53357	0.54165	0.64367	0.41833
0.46396	0.66405					
	SK16	Service orientation	0.30010	0.19331	0.42457	0.35118
0.25427	0.29387					
	SK17	Problem identification	0.72420	0.71053	0.49857	0.40672
0.41098	0.43249					
	SK18	Information gathering	0.75425	0.72132	0.54350	0.45487
0.38075	0.43498					
	SK19	Information organization	0.60813	0.59823	0.45855	0.35560
0.34188	0.34855					
	SK20	Synthesis/Reorganization	0.69621	0.68080	0.60036	0.47906
0.41146	0.48183					
	SK21	Idea generation	0.75938	0.74478	0.70811	0.55094
0.54834	0.61033					
	SK22	Idea evaluation	0.82256	0.80104	0.70736	0.56018
0.54988	0.61418					
	SK23	Implementation planning	0.76923	0.77544	0.78746	0.61116
0.62884	0.69010					
	SK24	Solution appraisal	0.77980	0.77737	0.66016	0.48429
0.51067	0.53539					
	SK25	Operations analysis	0.48575	0.60159	0.44909	0.40221
0.56648	0.44482					
	SK26	Technical design	0.14691	0.20191	0.05310	-0.05392
0.24709	0.02220					
	SK27	Equipment selection	-0.02552	0.02969	-0.08302	-0.19830
0.18967	-0.03844					

0.00364	SK28	Installation	-0.22452	-0.11280	-0.26882	-0.26400
-0.20897	SK29	Programming	0.29051	0.39491	0.19528	0.18524
0.21207	SK30	Testing	0.17073	0.28268	-0.03099	-0.12040
0.13596	SK31	Operation monitoring	-0.11142	-0.01066	-0.24771	-0.33352
0.06195	SK32	Operation and control	-0.27217	-0.20998	-0.30715	-0.38908
0.12553	SK33	Product inspection	0.11234	0.19592	0.04474	0.00700
0.23375	SK34	Equipment maintenance	-0.26572	-0.15271	-0.30615	-0.33501
0.06987	SK35	Troubleshooting	0.00571	0.13493	-0.11762	-0.17372
0.08940	SK36	Repairing	-0.23945	-0.13570	-0.26087	-0.27955
0.05361	SK37	Visioning	0.81684	0.85015	0.71413	0.58094
0.59112	SK38	Systems perceptions	0.82735	0.88643	0.66388	0.53503
0.53772	SK39	Identification of downstream consequences	0.84676	0.89904	0.69112	0.62049
0.57267	SK40	Identification of key causes	0.85241	0.83124	0.70345	0.52856
0.54920	SK41	Judgment and decision making	1.00000	0.81770	0.68364	0.56722
0.50691	SK42	Systems evaluation	0.81770	1.00000	0.67994	0.60888
0.57638	SK43	Time management	0.68364	0.67994	1.00000	0.65038
0.64998	SK44	Management of financial resources	0.56722	0.60888	0.65038	1.00000
0.64074	SK45	Management of material resources	0.50691	0.57638	0.64998	0.64074
1.00000	SK46	Management of personnel resources	0.59546	0.66492	0.77217	0.66397
0.67333	1.00000					

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure
 Initial Factor Method: Principal Components
 Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 46 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	22.1929508	15.0504531	0.4825	0.4825
2	7.1424977	4.7662314	0.1553	0.6377
3	2.3762663	0.6742350	0.0517	0.6894
4	1.7020313	0.3939336	0.0370	0.7264
5	1.3080977	0.2035134	0.0284	0.7548
6	1.1045843	0.1033012	0.0240	0.7788
7	1.0012831	0.1304989	0.0218	0.8006
8	0.8707842	0.1836393	0.0189	0.8195
9	0.6871449	0.0491493	0.0149	0.8345
10	0.6379956	0.0823862	0.0139	0.8483
11	0.5556094	0.0460939	0.0121	0.8604
12	0.5095156	0.0355318	0.0111	0.8715
13	0.4739837	0.0549621	0.0103	0.8818
14	0.4190216	0.0513210	0.0091	0.8909
15	0.3677006	0.0070405	0.0080	0.8989
16	0.3606601	0.0631682	0.0078	0.9067
17	0.2974919	0.0145865	0.0065	0.9132
18	0.2829055	0.0082723	0.0062	0.9194
19	0.2746332	0.0166797	0.0060	0.9253
20	0.2579535	0.0194225	0.0056	0.9309
21	0.2385310	0.0242746	0.0052	0.9361
22	0.2142563	0.0088870	0.0047	0.9408
23	0.2053693	0.0102228	0.0045	0.9452
24	0.1951465	0.0195312	0.0042	0.9495
25	0.1756154	0.0122946	0.0038	0.9533
26	0.1633208	0.0113807	0.0036	0.9569
27	0.1519401	0.0128779	0.0033	0.9602
28	0.1390621	0.0045724	0.0030	0.9632
29	0.1344898	0.0042657	0.0029	0.9661
30	0.1302241	0.0052392	0.0028	0.9689
31	0.1249848	0.0015767	0.0027	0.9717
32	0.1234082	0.0071201	0.0027	0.9743
33	0.1162880	0.0100589	0.0025	0.9769
34	0.1062292	0.0037135	0.0023	0.9792
35	0.1025156	0.0040874	0.0022	0.9814
36	0.0984282	0.0057453	0.0021	0.9835
37	0.0926830	0.0015959	0.0020	0.9856
38	0.0910871	0.0015633	0.0020	0.9875
39	0.0895237	0.0048406	0.0019	0.9895
40	0.0846831	0.0062999	0.0018	0.9913
41	0.0783833	0.0025839	0.0017	0.9930
42	0.0757993	0.0055739	0.0016	0.9947
43	0.0702254	0.0079714	0.0015	0.9962
44	0.0622540	0.0032963	0.0014	0.9976
45	0.0589577	0.0054752	0.0013	0.9988
46	0.0534825		0.0012	1.0000

7 factors will be retained by the MINEIGEN criterion.

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure
 Initial Factor Method: Principal Components

		Variance Explained by Each Factor					
Factor7		Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
1.001283		22.192951	7.142498	2.376266	1.702031	1.308098	1.104584

Final Communality Estimates: Total = 36.827711

SK10	SK1	SK2	SK3	SK4	SK5	SK6	SK7	SK8	SK9
0.76831964 0.68096885	0.84302182 0.88774071	0.79275001 0.77197535	0.88914244	0.72999771	0.66553419	0.89544567	0.88109660	0.83393769	
0.75272022 0.90200483	0.74825649 0.85297415	0.75082921 0.85434225	0.76643473	0.77215635	0.85717378	0.72926774	0.83765625	0.85170974	
0.81422674 0.84148040	0.77217688 0.87300064	0.77781249 0.84146896	0.76271575	0.52532385	0.79581992	0.89574597	0.82145437	0.48998657	
0.77275014	0.85710852 0.79832620	0.85722437	0.86834555	0.85073664	0.82272752	0.85202956	0.79522599	0.82656792	

PRINCIPAL COMPONENT ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax
Orthogonal Transformation Matrix

	1	2	3	4	5	6
7						
-0.06968	1	0.86210	-0.11358	0.28693	0.33128	0.20919
0.21938	2	0.20200	0.82897	-0.37612	-0.03642	0.21329
0.12228	3	-0.17480	0.37382	0.43205	0.57858	-0.54145
0.25329	4	0.06676	0.23979	0.60675	-0.55461	0.10265
-0.32028	5	-0.22751	0.10663	0.46091	-0.13771	0.27873
-0.77251	6	-0.11317	0.28302	-0.00627	0.16458	0.23925
0.41055	7	-0.34118	-0.10580	0.09443	0.44780	0.68710

Rotated Factor Pattern

Factor5	Factor6	Factor7	Factor1	Factor2	Factor3	Factor4
SK1	Reading comprehension		0.72194	-0.14345	0.22493	0.03328
0.40947	-0.08234	-0.02000				
SK2	Active listening		0.55235	-0.21476	0.65407	0.12596
0.15995	-0.10649	-0.10588				
SK3	Writing		0.65899	-0.22843	0.33017	0.11118
0.38635	-0.18884	-0.00117				
SK4	Speaking		0.57175	-0.24387	0.65527	0.21276
0.13696	-0.08769	-0.04095				
SK5	Mathematics		0.38702	0.05585	-0.05544	0.22627
0.70811	-0.12297	-0.07922				
SK6	Science		0.48252	0.26587	-0.03814	-0.11166
0.50385	0.19626	0.23604				
SK7	Critical thinking		0.88661	-0.01846	0.17842	0.15271
0.23045	0.00891	-0.02598				
SK8	Active learning		0.86509	-0.09439	0.15460	0.12753
0.24458	0.13917	-0.06668				
SK9	Learning strategies		0.74401	-0.09625	0.35794	0.17185
0.08156	0.31851	0.07328				
SK10	Monitoring		0.76623	-0.07529	0.09924	0.16525
0.02617	0.16499	0.15209				
SK11	Social Perceptiveness		0.42246	-0.26818	0.75460	0.23161
0.03375	-0.01412	-0.11379				
SK12	Coordination		0.54784	-0.13593	0.41379	0.51606
0.04391	0.01910	0.11638				
SK13	Persuasion		0.58895	-0.18364	0.46530	0.33985
0.00320	-0.04806	-0.19446				
SK14	Negotiation		0.53827	-0.17609	0.28941	0.51769
0.00544	-0.16458	-0.22056				
SK15	Instructing		0.48964	-0.09765	0.55503	0.28682
0.02904	0.30002	0.14271				
SK16	Service orientation		0.10810	-0.14088	0.83013	0.15093
0.00465	0.00233	-0.15159				
SK17	Problem identification		0.75543	0.32417	0.14842	0.10454
0.17039	-0.17392	-0.06447				
SK18	Information gathering		0.81500	-0.05872	0.15101	-0.00022
0.36790	-0.13842	-0.11038				
SK19	Information organization		0.75813	-0.05801	-0.00319	-0.06962
0.36149	0.05663	-0.11141				
SK20	Synthesis/Reorganization		0.81597	-0.20334	0.07678	0.05207
0.29692	0.13761	-0.12168				
SK21	Idea generation		0.82839	-0.09241	0.13683	0.24575

0.10057	SK22	0.23036	-0.12098	0.88181	-0.03238	0.11153	0.23194
0.12355	SK23	0.17582	-0.10467	0.75852	-0.10655	0.20848	0.39366
0.09038	SK24	0.22226	-0.10136	0.88015	0.07353	0.06440	0.15824
0.15037	SK25	0.13696	-0.06092	0.50322	0.19587	-0.15249	0.38137
0.33684	SK26	0.45200	-0.19019	0.14820	0.58412	-0.00123	0.00322
0.34627	SK27	0.53223	-0.07637	0.04557	0.61220	-0.34372	0.04765
0.04544	SK28	0.50925	0.13834	-0.16451	0.81125	-0.17894	-0.03343
0.00155	SK29	0.17266	-0.12069	0.28207	0.00535	0.03478	0.05683
0.63169	SK30	0.19710	0.05839	0.27163	0.73959	-0.10248	-0.12682
0.32961	SK31	0.08953	0.17831	-0.05061	0.61663	-0.18244	-0.09334
0.11017	SK32	-0.07481	0.67322	-0.22509	0.46295	-0.28080	-0.04946
0.01734	SK33	0.03749	0.68809	0.22899	0.39378	-0.45958	0.12216
0.18483	SK34	0.14590	0.02991	-0.21043	0.82783	-0.12959	-0.04776
0.15136	SK35	-0.09719	0.24589	0.04432	0.91576	-0.06604	0.00224
0.04893	SK36	-0.07631	0.14085	-0.15565	0.87413	-0.12715	-0.07063
0.17530	SK37	-0.03487	-0.00627	0.83999	0.00343	0.08150	0.35537
0.06945	SK38	0.10758	-0.04681	0.83997	0.09784	0.10489	0.31364
0.08290	SK39	-0.10861	0.11858	0.83856	0.01228	0.08020	0.36818
0.14420	SK40	-0.04708	-0.00307	0.85709	0.10842	0.16729	0.27022
0.04017	SK41	0.00904	-0.04086	0.84680	-0.01749	0.16613	0.25348
0.07196	SK42	-0.08710	-0.02707	0.80529	0.08129	0.07177	0.39444
0.17125	SK43	-0.08076	0.01870	0.62095	-0.13570	0.31151	0.52667
0.05781	SK44	0.11587	0.00645	0.39106	-0.17427	0.14514	0.71428
0.16769	SK45	-0.17694	-0.22930	0.36664	0.11189	0.12148	0.74388
0.14769	SK46	0.18802	-0.02298	0.49165	-0.10848	0.22021	0.68423
0.01997		0.09338	0.13804				

Variance Explained by Each Factor

Factor7	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
1.558390	17.064067	5.739070	4.194582	4.019560	2.648208	1.603835

Final Communality Estimates: Total = 36.827711

SK1	SK2	SK3	SK4	SK5	SK6	SK7	SK8	SK9
SK10	SK11	SK12						
0.76831964	0.84302182	0.79275001	0.88914244	0.72999771	0.66553419	0.89544567	0.88109660	0.83393769
0.68096885	0.88774071	0.77197535						
SK22	SK13	SK14	SK15	SK16	SK17	SK18	SK19	SK20
0.75272022	0.74825649	0.75082921	0.76643473	0.77215635	0.85717378	0.72926774	0.83765625	0.85170974
0.90200483	0.85297415	0.85434225						
SK34	SK25	SK26	SK27	SK28	SK29	SK30	SK31	SK32
0.81422674	0.77217688	0.77781249	0.76271575	0.52532385	0.79581992	0.89574597	0.82145437	0.48998657
0.84148040	0.87300064	0.84146896						
SK45	SK37	SK38	SK39	SK40	SK41	SK42	SK43	SK44
0.77275014	0.85710852	0.85722437	0.86834555	0.85073664	0.82272752	0.85202956	0.79522599	0.82656792
	0.79832620							

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

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Correlations

GWA5	GWA6	GWA7	GWA1	GWA2	GWA3	GWA4
GWA1	Getting information needed to do job		1.00000	0.90697	0.65542	0.17524
0.76256	0.84584	0.81524				
GWA2	Identifying objects, actions, and events		0.90697	1.00000	0.70389	0.26024
0.76640	0.86116	0.82053				
GWA3	Monitoring processes, materials, or surroundings		0.65542	0.70389	1.00000	0.55474
0.64078	0.62822	0.65844				
GWA4	Inspecting equipment, structures or materials		0.17524	0.26024	0.55474	1.00000
0.35670	0.19955	0.33813				
GWA5	Estimating the characteristics of materials, products, events or information		0.76256	0.76640	0.64078	0.35670

1.00000	0.74431	0.70372				
GWA6	Judging the qualities of objects, services, or persons		0.84584	0.86116	0.62822	0.19955
0.74431	1.00000	0.79519				
GWA7	Evaluating information for compliance to standards		0.81524	0.82053	0.65844	0.33813
0.70372	0.79519	1.00000				
GWA8	Processing information		0.87526	0.86195	0.57244	0.14811
0.73447	0.77161	0.80727				
GWA9	Analyzing data or information		0.92141	0.89621	0.64779	0.20058
0.76889	0.84105	0.82059				
GWA10	Making decisions and solving problems		0.91409	0.89846	0.68143	0.22893
0.80533	0.87620	0.82425				
GWA11	Thinking creatively		0.69567	0.64525	0.42704	0.09137
0.65153	0.67031	0.55797				
GWA12	Updating and using job-relevant knowledge		0.86648	0.85705	0.72585	0.34369
0.74382	0.79404	0.79801				
GWA13	Developing objectives and strategies		0.82289	0.77303	0.53931	0.08131
0.76033	0.80649	0.70681				
GWA14	Scheduling work and activities		0.68839	0.63728	0.44836	0.08426
0.63524	0.66118	0.59265				
GWA15	Organizing, planning, and prioritizing work		0.83834	0.78660	0.53629	0.13596
0.75263	0.81805	0.72665				
GWA16	Performing general physical activities		-0.42619	-0.39661	-0.10549	0.19333
-0.22242	-0.37225	-0.38458				
GWA17	Handling and moving objects		-0.54951	-0.48661	-0.18334	0.23335
-0.31040	-0.47310	-0.42005				
GWA18	Controlling machines and processes		-0.31296	-0.20462	0.17801	0.49726
-0.08991	-0.25983	-0.15334				
GWA19	Interacting with computers		0.72254	0.68827	0.46213	0.12679
0.58493	0.60933	0.66948				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.14686	-0.15176	0.05164	0.14714
-0.01290	-0.19167	-0.18058				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.36848	0.34786	0.38547	0.54646
0.50997	0.31034	0.37497				
GWA22	Implementing ideas, programs, systems or products		0.75783	0.73313	0.62588	0.33435
0.75093	0.77545	0.71326				
GWA23	Repairing and maintaining mechanical equipment		-0.28215	-0.23504	0.13415	0.54901
-0.10584	-0.25307	-0.13541				
GWA24	Repairing and maintaining electronic equipment		0.10055	0.10998	0.36984	0.54551
0.13230	0.05674	0.17363				
GWA25	Documenting/recording information		0.81638	0.81872	0.58592	0.17388
0.65642	0.74852	0.78104				
GWA26	Interpreting the meaning of information for others		0.87184	0.83261	0.57097	0.10173
0.68526	0.79842	0.76142				
GWA27	Communicating with supervisors, peers or subordinates		0.84859	0.81032	0.58340	0.14026
0.70817	0.76756	0.75058				
GWA28	Communicating with persons outside the organizations		0.74324	0.67850	0.35897	-0.08009
0.57127	0.68451	0.60463				
GWA29	Establishing and maintaining interpersonal relationships		0.66540	0.60038	0.36208	-0.10562
0.50413	0.61705	0.53942				
GWA30	Assisting and caring for others		0.35667	0.32698	0.28056	-0.13184
0.19752	0.34343	0.26046				
GWA31	Selling or influencing others		0.56207	0.52803	0.27284	-0.04493
0.50305	0.58250	0.47504				
GWA32	Resolving conflicts and negotiating with others		0.57827	0.52847	0.30435	-0.06349
0.49126	0.58542	0.55776				
GWA33	Performing for or working directly with the public		0.36993	0.30981	0.11786	-0.25648
0.21634	0.37088	0.25807				
GWA34	Coordinating the work and activities of others		0.64678	0.61841	0.50801	0.20644
0.64491	0.61332	0.58059				
GWA35	Developing and building teams		0.61053	0.57356	0.45274	0.11959
0.62668	0.61309	0.55902				
GWA36	Teaching others		0.64508	0.57803	0.48213	0.07418
0.53038	0.61472	0.53879				
GWA37	Guiding, directing and motivating subordinates		0.60523	0.57015	0.44798	0.15286
0.59438	0.57437	0.53565				
GWA38	Coaching and developing others		0.59423	0.53881	0.44335	0.04740
0.53091	0.58568	0.50928				
GWA39	Providing consultation and advice to others		0.85509	0.81237	0.55559	0.11820
0.73035	0.82288	0.76334				
GWA40	Performing administrative activities		0.69790	0.67594	0.41244	0.05590
0.58417	0.66214	0.69625				
GWA41	Staffing organizational units		0.43139	0.42911	0.27886	0.03828
0.45157	0.45929	0.40657				
GWA42	Monitoring and controlling resources		0.57071	0.56590	0.35293	0.08311
0.58571	0.56289	0.54869				

Correlations

	GWA12	GWA13	GWA14	GWA8	GWA9	GWA10	GWA11
GWA1	Getting information needed to do job			0.87526	0.92141	0.91409	0.69567
0.86648	0.82289	0.68839					
GWA2	Identifying objects, actions, and events			0.86195	0.89621	0.89846	0.64525
0.85705	0.77303	0.63728					
GWA3	Monitoring processes, materials, or surroundings			0.57244	0.64779	0.68143	0.42704
0.72585	0.53931	0.44836					
GWA4	Inspecting equipment, structures or materials			0.14811	0.20058	0.22893	0.09137
0.34369	0.08131	0.08426					
GWA5	Estimating the characteristics of materials, products, events or information			0.73447	0.76889	0.80533	0.65153
0.74382	0.76033	0.63524					
GWA6	Judging the qualities of objects, services, or persons			0.77161	0.84105	0.87620	0.67031
0.79404	0.80649	0.66118					
GWA7	Evaluating information for compliance to standards			0.80727	0.82059	0.82425	0.55797
0.79801	0.70681	0.59265					
GWA8	Processing information			1.00000	0.92195	0.85904	0.63260
0.82012	0.77722	0.60927					
GWA9	Analyzing data or information			0.92195	1.00000	0.92836	0.67710
0.87458	0.82897	0.63813					
GWA10	Making decisions and solving problems			0.85904	0.92836	1.00000	0.71089
0.85987	0.86597	0.71232					
GWA11	Thinking creatively			0.63260	0.67710	0.71089	1.00000
0.66240	0.73668	0.61687					
GWA12	Updating and using job-relevant knowledge			0.82012	0.87458	0.85987	0.66240
1.00000	0.74419	0.58253					
GWA13	Developing objectives and strategies			0.77722	0.82897	0.86597	0.73668
0.74419	1.00000	0.81797					
GWA14	Scheduling work and activities			0.60927	0.63813	0.71232	0.61687

0.58253	0.81797	1.00000				
GWA15	Organizing, planning, and prioritizing work		0.75400	0.80481	0.85997	0.75999
0.74864	0.88606	0.83550				
GWA16	Performing general physical activities		-0.49577	-0.41264	-0.36560	-0.34867
-0.33511	-0.32887	-0.27924				
GWA17	Handling and moving objects		-0.54728	-0.51100	-0.52550	-0.38459
-0.36385	-0.51460	-0.50112				

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

GWA12	GWA13	GWA14	GWA8	GWA9	GWA10	GWA11
GWA18	Controlling machines and processes		-0.29170	-0.26312	-0.27465	-0.26076
-0.11217	-0.36692	-0.34039				
GWA19	Interacting with computers		0.80407	0.75415	0.68748	0.59112
0.73807	0.62467	0.49333				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.21520	-0.17750	-0.12440	-0.21130
-0.15011	-0.13986	-0.08315				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.35781	0.37857	0.38932	0.51204
0.46880	0.33840	0.23390				
GWA22	Implementing ideas, programs, systems or products		0.69821	0.77136	0.80502	0.71570
0.79535	0.77583	0.61316				
GWA23	Repairing and maintaining mechanical equipment		-0.29826	-0.25015	-0.24721	-0.27345
-0.09851	-0.31658	-0.27929				
GWA24	Repairing and maintaining electronic equipment		0.06453	0.10417	0.08427	0.00822
0.28132	-0.06214	-0.04261				
GWA25	Documenting/recording information		0.87219	0.83156	0.79178	0.53856
0.76724	0.71894	0.60006				
GWA26	Interpreting the meaning of information for others		0.87216	0.88293	0.85579	0.65316
0.82108	0.80192	0.65587				
GWA27	Communicating with supervisors, peers or subordinates		0.81744	0.82223	0.84136	0.64507
0.75262	0.81182	0.78059				
GWA28	Communicating with persons outside the organizations		0.68711	0.70030	0.71787	0.60580
0.63169	0.74402	0.70494				
GWA29	Establishing and maintaining interpersonal relationships		0.58899	0.59639	0.66189	0.56509
0.55176	0.71348	0.77497				
GWA30	Assisting and caring for others		0.27004	0.29793	0.35152	0.23521
0.33782	0.36179	0.42595				
GWA31	Selling or influencing others		0.50535	0.52623	0.58213	0.53266
0.48897	0.68477	0.66722				
GWA32	Resolving conflicts and negotiating with others		0.50841	0.52701	0.61203	0.45370
0.45398	0.68431	0.76877				
GWA33	Performing for or working directly with the public		0.29745	0.30908	0.35174	0.32673
0.29180	0.40607	0.47758				
GWA34	Coordinating the work and activities of others		0.57140	0.60320	0.68923	0.57417
0.56149	0.74458	0.86667				
GWA35	Developing and building teams		0.54792	0.58736	0.66668	0.59126
0.53770	0.76172	0.83207				
GWA36	Teaching others		0.56770	0.61729	0.64034	0.54877
0.60511	0.70417	0.70032				
GWA37	Guiding, directing and motivating subordinates		0.52426	0.56562	0.64729	0.54806
0.51532	0.71224	0.83620				
GWA38	Coaching and developing others		0.50169	0.54881	0.61073	0.54933
0.52062	0.70900	0.77201				
GWA39	Providing consultation and advice to others		0.81676	0.85986	0.87854	0.70122
0.79166	0.87997	0.75803				
GWA40	Performing administrative activities		0.71067	0.67231	0.70271	0.48003
0.59567	0.74172	0.78360				
GWA41	Staffing organizational units		0.38603	0.40128	0.49159	0.41286
0.33660	0.59589	0.72921				
GWA42	Monitoring and controlling resources		0.55291	0.54894	0.61343	0.54253
0.48208	0.72160	0.78506				

Correlations

GWA19	GWA20	GWA21	GWA15	GWA16	GWA17	GWA18
GWA1	Getting information needed to do job		0.83834	-0.42619	-0.54951	-0.31296
0.72254	-0.14686	0.36848				
GWA2	Identifying objects, actions, and events		0.78660	-0.39661	-0.48661	-0.20462
0.68827	-0.15176	0.34786				
GWA3	Monitoring processes, materials, or surroundings		0.53629	-0.10549	-0.18334	0.17801
0.46213	0.05164	0.38547				
GWA4	Inspecting equipment, structures or materials		0.13596	0.19333	0.23335	0.49726
0.12679	0.14714	0.54646				
GWA5	Estimating the characteristics of materials, products, events or information		0.75263	-0.22242	-0.31040	-0.08991
0.58493	-0.01290	0.50997				
GWA6	Judging the qualities of objects, services, or persons		0.81805	-0.37225	-0.47310	-0.25983
0.60933	-0.19167	0.31034				
GWA7	Evaluating information for compliance to standards		0.72665	-0.38458	-0.42005	-0.15334
0.66948	-0.18058	0.37497				
GWA8	Processing information		0.75400	-0.49577	-0.54728	-0.29170
0.80407	-0.21520	0.35781				
GWA9	Analyzing data or information		0.80481	-0.41264	-0.51100	-0.26312
0.75415	-0.17750	0.37857				
GWA10	Making decisions and solving problems		0.85997	-0.36560	-0.52550	-0.27465
0.68748	-0.12440	0.38932				
GWA11	Thinking creatively		0.75999	-0.34867	-0.38459	-0.26076
0.59112	-0.21130	0.51204				
GWA12	Updating and using job-relevant knowledge		0.74864	-0.33511	-0.36385	-0.11217
0.73807	-0.15011	0.46880				
GWA13	Developing objectives and strategies		0.88606	-0.32887	-0.51460	-0.36692
0.62467	-0.13986	0.33840				
GWA14	Scheduling work and activities		0.83550	-0.27924	-0.50112	-0.34039
0.49333	-0.08315	0.23390				
GWA15	Organizing, planning, and prioritizing work		1.00000	-0.33232	-0.53455	-0.35100
0.61728	-0.13213	0.37280				
GWA16	Performing general physical activities		-0.33232	1.00000	0.63645	0.38669
-0.50086	0.40891	-0.05716				

GWA17	Handling and moving objects	-0.53455	0.63645	1.00000	0.59053
-0.44644	0.18007 0.03685				
GWA18	Controlling machines and processes	-0.35100	0.38669	0.59053	1.00000
-0.25716	0.23168 0.19201				
GWA19	Interacting with computers	0.61728	-0.50086	-0.44644	-0.25716
1.00000	-0.23650 0.38007				
GWA20	Operating vehicles, mechanized devices, or equipment	-0.13213	0.40891	0.18007	0.23168
-0.23650	1.00000 -0.06319				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.37280	-0.05716	0.03685	0.19201
0.38007	-0.06319 1.00000				
GWA22	Implementing ideas, programs, systems or products	0.77123	-0.23494	-0.26324	-0.08178
0.59615	-0.18085 0.53327				
GWA23	Repairing and maintaining mechanical equipment	-0.29880	0.45726	0.49741	0.64205
-0.28659	0.34336 0.15164				
GWA24	Repairing and maintaining electronic equipment	0.00171	0.10703	0.18651	0.32802
0.18499	0.07503 0.30936				
GWA25	Documenting/recording information	0.72005	-0.45475	-0.52868	-0.27274
0.74146	-0.16796 0.27898				
GWA26	Interpreting the meaning of information for others	0.78540	-0.40901	-0.55810	-0.33726
0.73772	-0.16240 0.30382				
GWA27	Communicating with supervisors, peers or subordinates	0.83798	-0.37285	-0.58703	-0.31987
0.69207	-0.09052 0.31482				
GWA28	Communicating with persons outside the organizations	0.77221	-0.39578	-0.61865	-0.51662
0.57863	-0.09935 0.15196				
GWA29	Establishing and maintaining interpersonal relationships	0.74164	-0.30052	-0.57503	-0.46530
0.50740	-0.05575 0.09196				
GWA30	Assisting and caring for others	0.35117	-0.03862	-0.26091	-0.27154
0.22361	-0.02908 -0.10041				
GWA31	Selling or influencing others	0.67994	-0.31273	-0.50908	-0.38665
0.43450	-0.05545 0.14503				
GWA32	Resolving conflicts and negotiating with others	0.69386	-0.29221	-0.53970	-0.45155
0.41177	-0.04842 0.05625				
GWA33	Performing for or working directly with the public	0.43751	-0.19907	-0.43524	-0.49125
0.23808	-0.02995 -0.13646				
GWA34	Coordinating the work and activities of others	0.75663	-0.18344	-0.39901	-0.20092
0.46989	-0.00085 0.32369				
GWA35	Developing and building teams	0.74967	-0.18598	-0.38864	-0.22957
0.46221	-0.02409 0.25705				
GWA36	Teaching others	0.67590	-0.20499	-0.38771	-0.24781
0.48136	-0.04843 0.19616				
GWA37	Guiding, directing and motivating subordinates	0.71533	-0.20050	-0.37165	-0.21160
0.41539	-0.05057 0.26182				
GWA38	Coaching and developing others	0.68278	-0.18305	-0.38834	-0.24409
0.42436	-0.04263 0.15959				
GWA39	Providing consultation and advice to others	0.85867	-0.40025	-0.57587	-0.36470
0.69699	-0.15017 0.34538				
GWA40	Performing administrative activities	0.74526	-0.42423	-0.56422	-0.38166
0.60295	-0.14254 0.12332				
GWA41	Staffing organizational units	0.59643	-0.21142	-0.36541	-0.24896
0.30970	-0.06187 0.08472				
GWA42	Monitoring and controlling resources	0.72107	-0.25062	-0.40408	-0.29242
0.46275	-0.08304 0.20044				

Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA1	Getting information needed to do job		0.75783	-0.28215	0.10055	0.81638
0.87184	0.84859 0.74324					
GWA2	Identifying objects, actions, and events		0.73313	-0.23504	0.10998	0.81872
0.83261	0.81032 0.67850					
GWA3	Monitoring processes, materials, or surroundings		0.62588	0.13415	0.36984	0.58592
0.57097	0.58340 0.35897					
GWA4	Inspecting equipment, structures or materials		0.33435	0.54901	0.54551	0.17388
0.10173	0.14026 -0.08009					
GWA5	Estimating the characteristics of materials, products, events or information		0.75093	-0.10584	0.13230	0.65642
0.68526	0.70817 0.57127					
GWA6	Judging the qualities of objects, services, or persons		0.77545	-0.25307	0.05674	0.74852
0.79842	0.76756 0.68451					
GWA7	Evaluating information for compliance to standards		0.71326	-0.13541	0.17363	0.78104
0.76142	0.75058 0.60463					
GWA8	Processing information		0.69821	-0.29826	0.06453	0.87219
0.87216	0.81744 0.68711					
GWA9	Analyzing data or information		0.77136	-0.25015	0.10417	0.83156
0.88293	0.82223 0.70030					
GWA10	Making decisions and solving problems		0.80502	-0.24721	0.08427	0.79178
0.85579	0.84136 0.71787					
GWA11	Thinking creatively		0.71570	-0.27345	0.00822	0.53856
0.65316	0.64507 0.60580					
GWA12	Updating and using job-relevant knowledge		0.79535	-0.09851	0.28132	0.76724
0.82108	0.75262 0.63169					
GWA13	Developing objectives and strategies		0.77583	-0.31658	-0.06214	0.71894
0.80192	0.81182 0.74402					
GWA14	Scheduling work and activities		0.61316	-0.27929	-0.04261	0.60006
0.65587	0.78059 0.70494					
GWA15	Organizing, planning, and prioritizing work		0.77123	-0.29880	0.00171	0.72005
0.78540	0.83798 0.77221					
GWA16	Performing general physical activities		-0.23494	0.45726	0.10703	-0.45475
-0.40901	-0.37285 -0.39578					
GWA17	Handling and moving objects		-0.26324	0.49741	0.18651	-0.52868
-0.55810	-0.58703 -0.61865					
GWA18	Controlling machines and processes		-0.08178	0.64205	0.32802	-0.27274
-0.33726	-0.31987 -0.51662					
GWA19	Interacting with computers		0.59615	-0.28659	0.18499	0.74146
0.73772	0.69207 0.57863					
GWA20	Operating vehicles, mechanized devices, or equipment		-0.18085	0.34336	0.07503	-0.16796
-0.16240	-0.09052 -0.09935					
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.53327	0.15164	0.30936	0.27898
0.30382	0.31482 0.15196					
GWA22	Implementing ideas, programs, systems or products		1.00000	-0.08638	0.20231	0.62571
0.70382	0.66287 0.53786					
GWA23	Repairing and maintaining mechanical equipment		-0.08638	1.00000	0.48056	-0.26208

-0.32098	-0.30498	-0.43514				
GWA24	Repairing and maintaining electronic equipment		0.20231	0.48056	1.00000	0.10139
0.05456	0.03115	-0.07904				
GWA25	Documenting/recording information		0.62571	-0.26208	0.10139	1.00000
0.83886	0.79582	0.68690				
GWA26	Interpreting the meaning of information for others		0.70382	-0.32098	0.05456	0.83886
1.00000	0.83590	0.79555				
GWA27	Communicating with supervisors, peers or subordinates		0.66287	-0.30498	0.03115	0.79582
0.83590	1.00000	0.75837				
GWA28	Communicating with persons outside the organizations		0.53786	-0.43514	-0.07904	0.68690
0.79555	0.75837	1.00000				
GWA29	Establishing and maintaining interpersonal relationships		0.46150	-0.37937	-0.07739	0.61687
0.71518	0.77880	0.82736				
GWA30	Assisting and caring for others		0.21216	-0.26922	-0.06408	0.35842
0.43417	0.41066	0.52304				
GWA31	Selling or influencing others		0.46442	-0.30795	-0.08842	0.51147
0.59964	0.63410	0.78534				
GWA32	Resolving conflicts and negotiating with others		0.44317	-0.31343	-0.10222	0.54398
0.58311	0.69151	0.72820				
GWA33	Performing for or working directly with the public		0.21119	-0.37435	-0.12800	0.36488
0.48300	0.41139	0.74293				
GWA34	Coordinating the work and activities of others		0.60615	-0.18260	0.00804	0.56246
0.60976	0.78113	0.60767				
GWA35	Developing and building teams		0.60695	-0.18138	-0.00176	0.52649
0.58344	0.73531	0.58632				

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA36	Teaching others		0.56802	-0.22097	0.02920	0.56153
0.69266	0.69241	0.64238				
GWA37	Guiding, directing and motivating subordinates		0.56378	-0.19587	-0.02323	0.49274
0.54494	0.72139	0.52738				
GWA38	Coaching and developing others		0.52205	-0.20434	0.00110	0.49902
0.59281	0.68678	0.58347				
GWA39	Providing consultation and advice to others		0.73015	-0.31899	0.01612	0.76420
0.87469	0.86083	0.82044				
GWA40	Performing administrative activities		0.52846	-0.29901	-0.00949	0.77123
0.69252	0.78189	0.72215				
GWA41	Staffing organizational units		0.42125	-0.19033	-0.07712	0.37658
0.37741	0.56282	0.44290				
GWA42	Monitoring and controlling resources		0.50899	-0.22429	-0.03849	0.54004
0.53749	0.67025	0.62142				

Correlations

GWA33	GWA34	GWA35	GWA29	GWA30	GWA31	GWA32
GWA1	Getting information needed to do job		0.66540	0.35667	0.56207	0.57827
0.36993	0.64678	0.61053				
GWA2	Identifying objects, actions, and events		0.60038	0.32698	0.52803	0.52847
0.30981	0.61841	0.57356				
GWA3	Monitoring processes, materials, or surroundings		0.36208	0.28056	0.27284	0.30435
0.11786	0.50801	0.45274				
GWA4	Inspecting equipment, structures or materials		-0.10562	-0.13184	-0.04493	-0.06349
-0.25648	0.20644	0.11959				
GWA5	Estimating the characteristics of materials, products, events or information		0.50413	0.19752	0.50305	0.49126
0.21634	0.64491	0.62668				
GWA6	Judging the qualities of objects, services, or persons		0.61705	0.34343	0.58250	0.58542
0.37088	0.61332	0.61309				
GWA7	Evaluating information for compliance to standards		0.53942	0.26046	0.47504	0.55776
0.25807	0.58059	0.55902				
GWA8	Processing information		0.58899	0.27004	0.50535	0.50841
0.29745	0.57140	0.54792				
GWA9	Analyzing data or information		0.59639	0.29793	0.52623	0.52701
0.30908	0.60320	0.58736				
GWA10	Making decisions and solving problems		0.66189	0.35152	0.58213	0.61203
0.35174	0.68923	0.66668				
GWA11	Thinking creatively		0.56509	0.23521	0.53266	0.45370
0.32673	0.57417	0.59126				
GWA12	Updating and using job-relevant knowledge		0.55176	0.33782	0.48897	0.45398
0.29180	0.56149	0.53770				
GWA13	Developing objectives and strategies		0.71348	0.36179	0.68477	0.68431
0.40607	0.74458	0.76172				
GWA14	Scheduling work and activities		0.77497	0.42595	0.66722	0.76877
0.47758	0.86667	0.83207				
GWA15	Organizing, planning, and prioritizing work		0.74164	0.35117	0.67994	0.69386
0.43751	0.75663	0.74967				
GWA16	Performing general physical activities		-0.30052	-0.03862	-0.31273	-0.29221
-0.19907	-0.18344	-0.18598				
GWA17	Handling and moving objects		-0.57503	-0.26091	-0.50908	-0.53970
-0.43524	-0.39901	-0.38864				
GWA18	Controlling machines and processes		-0.46530	-0.27154	-0.38665	-0.45155
-0.49125	-0.20092	-0.22957				
GWA19	Interacting with computers		0.50740	0.22361	0.43450	0.41177
0.23808	0.46989	0.46221				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.05575	-0.02908	-0.05545	-0.04842
-0.02995	-0.00085	-0.02409				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.09196	-0.10041	0.14503	0.05625
-0.13646	0.32369	0.25705				
GWA22	Implementing ideas, programs, systems or products		0.46150	0.21216	0.46442	0.44317
0.21119	0.60615	0.60695				
GWA23	Repairing and maintaining mechanical equipment		-0.37937	-0.26922	-0.30795	-0.31343
-0.37435	-0.18260	-0.18138				
GWA24	Repairing and maintaining electronic equipment		-0.07739	-0.06408	-0.08842	-0.10222
-0.12800	0.00804	-0.00176				
GWA25	Documenting/recording information		0.61687	0.35842	0.51147	0.54398
0.36488	0.56246	0.52649				
GWA26	Interpreting the meaning of information for others		0.71518	0.43417	0.59964	0.58311
0.48300	0.60976	0.58344				
GWA27	Communicating with supervisors, peers or subordinates		0.77880	0.41066	0.63410	0.69151

0.41139	0.78113	0.73531				
GWA28	Communicating with persons outside the organizations		0.82736	0.52304	0.78534	0.72820
0.74293	0.60767	0.58632				
GWA29	Establishing and maintaining interpersonal relationships		1.00000	0.66208	0.77166	0.78415
0.69812	0.70496	0.69288				
GWA30	Assisting and caring for others		0.66208	1.00000	0.44048	0.45778
0.64265	0.36592	0.35621				
GWA31	Selling or influencing others		0.77166	0.44048	1.00000	0.77088
0.63365	0.58573	0.61411				
GWA32	Resolving conflicts and negotiating with others		0.78415	0.45778	0.77088	1.00000
0.59680	0.70914	0.73571				
GWA33	Performing for or working directly with the public		0.69812	0.64265	0.63365	0.59680
1.00000	0.36496	0.37239				
GWA34	Coordinating the work and activities of others		0.70496	0.36592	0.58573	0.70914
0.36496	1.00000	0.88187				
GWA35	Developing and building teams		0.69288	0.35621	0.61411	0.73571
0.37239	0.88187	1.00000				
GWA36	Teaching others		0.68970	0.51503	0.54576	0.56067
0.46102	0.67269	0.70885				
GWA37	Guiding, directing and motivating subordinates		0.63172	0.28590	0.50884	0.67114
0.29344	0.90378	0.89117				
GWA38	Coaching and developing others		0.71425	0.47827	0.57746	0.65762
0.42126	0.76834	0.84201				
GWA39	Providing consultation and advice to others		0.76680	0.41638	0.72099	0.69375
0.46067	0.71292	0.70740				
GWA40	Performing administrative activities		0.74305	0.39200	0.67119	0.78233
0.47022	0.71607	0.71860				
GWA41	Staffing organizational units		0.53660	0.21594	0.50911	0.65652
0.29234	0.70080	0.77013				
GWA42	Monitoring and controlling resources		0.68807	0.29951	0.65097	0.71840
0.38870	0.74576	0.74383				

Correlations

GWA40	GWA41	GWA42	GWA36	GWA37	GWA38	GWA39
GWA1	Getting information needed to do job		0.64508	0.60523	0.59423	0.85509
0.69790	0.43139	0.57071				
GWA2	Identifying objects, actions, and events		0.57803	0.57015	0.53881	0.81237
0.67594	0.42911	0.56590				
GWA3	Monitoring processes, materials, or surroundings		0.48213	0.44798	0.44335	0.55559
0.41244	0.27886	0.35293				
GWA4	Inspecting equipment, structures or materials		0.07418	0.15286	0.04740	0.11820
0.05590	0.03828	0.08311				
GWA5	Estimating the characteristics of materials, products, events or information		0.53038	0.59438	0.53091	0.73035
0.58417	0.45157	0.58571				
GWA6	Judging the qualities of objects, services, or persons		0.61472	0.57437	0.58568	0.82288
0.66214	0.45929	0.56289				
GWA7	Evaluating information for compliance to standards		0.53879	0.53565	0.50928	0.76334
0.69625	0.40657	0.54869				
GWA8	Processing information		0.56770	0.52426	0.50169	0.81676
0.71067	0.38603	0.55291				
GWA9	Analyzing data or information		0.61729	0.56562	0.54881	0.85986
0.67231	0.40128	0.54894				
GWA10	Making decisions and solving problems		0.64034	0.64729	0.61073	0.87854
0.70271	0.49159	0.61343				
GWA11	Thinking creatively		0.54877	0.54806	0.54933	0.70122
0.48003	0.41286	0.54253				
GWA12	Updating and using job-relevant knowledge		0.60511	0.51532	0.52062	0.79166
0.59567	0.33660	0.48208				
GWA13	Developing objectives and strategies		0.70417	0.71224	0.70900	0.87997
0.74172	0.59589	0.72160				
GWA14	Scheduling work and activities		0.70032	0.83620	0.77201	0.75803
0.78360	0.72921	0.78506				
GWA15	Organizing, planning, and prioritizing work		0.67590	0.71533	0.68278	0.85867
0.74526	0.59643	0.72107				
GWA16	Performing general physical activities		-0.20499	-0.20050	-0.18305	-0.40025
-0.42423	-0.21142	-0.25062				
GWA17	Handling and moving objects		-0.38771	-0.37165	-0.38834	-0.57587
-0.56422	-0.36541	-0.40408				
GWA18	Controlling machines and processes		-0.24781	-0.21160	-0.24409	-0.36470
-0.38166	-0.24896	-0.29242				
GWA19	Interacting with computers		0.48136	0.41539	0.42436	0.69699
0.60295	0.30970	0.46275				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.04843	-0.05057	-0.04263	-0.15017
-0.14254	-0.06187	-0.08304				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.19616	0.26182	0.15959	0.34538
0.12332	0.08472	0.20044				
GWA22	Implementing ideas, programs, systems or products		0.56802	0.56378	0.52205	0.73015
0.52846	0.42125	0.50899				
GWA23	Repairing and maintaining mechanical equipment		-0.22097	-0.19587	-0.20434	-0.31899
-0.29901	-0.19033	-0.22429				
GWA24	Repairing and maintaining electronic equipment		0.02920	-0.02323	0.00110	0.01612
-0.00949	-0.07712	-0.03849				
GWA25	Documenting/recording information		0.56153	0.49274	0.49902	0.76420
0.77123	0.37658	0.54004				
GWA26	Interpreting the meaning of information for others		0.69266	0.54494	0.59281	0.87469
0.69252	0.37741	0.53749				
GWA27	Communicating with supervisors, peers or subordinates		0.69241	0.72139	0.68678	0.86083
0.78189	0.56282	0.67025				
GWA28	Communicating with persons outside the organizations		0.64238	0.52738	0.58347	0.82044
0.72215	0.44290	0.62142				
GWA29	Establishing and maintaining interpersonal relationships		0.68970	0.63172	0.71425	0.76680
0.74305	0.53660	0.68807				
GWA30	Assisting and caring for others		0.51503	0.28590	0.47827	0.41638
0.39200	0.21594	0.29951				
GWA31	Selling or influencing others		0.54576	0.50884	0.57746	0.72099
0.67119	0.50911	0.65097				
GWA32	Resolving conflicts and negotiating with others		0.56067	0.67114	0.65762	0.69375
0.78233	0.65652	0.71840				
GWA33	Performing for or working directly with the public		0.46102	0.29344	0.42126	0.46067
0.47022	0.29234	0.38870				
GWA34	Coordinating the work and activities of others		0.67269	0.90378	0.76834	0.71292
0.71607	0.70080	0.74576				
GWA35	Developing and building teams		0.70885	0.89117	0.84201	0.70740
0.71860	0.77013	0.74383				
GWA36	Teaching others		1.00000	0.69056	0.87858	0.73519

0.60394	0.51353	0.55161				
GWA37	Guiding, directing and motivating subordinates		0.69056	1.00000	0.81221	0.66532
0.68268	0.78156	0.72843				
GWA38	Coaching and developing others		0.87858	0.81221	1.00000	0.70056
0.65370	0.67571	0.64352				
GWA39	Providing consultation and advice to others		0.73519	0.66532	0.70056	1.00000
0.76205	0.53354	0.67980				
GWA40	Performing administrative activities		0.60394	0.68268	0.65370	0.76205
1.00000	0.67059	0.79129				
GWA41	Staffing organizational units		0.51353	0.78156	0.67571	0.53354
0.67059	1.00000	0.73402				
GWA42	Monitoring and controlling resources		0.55161	0.72843	0.64352	0.67980
0.79129	0.73402	1.00000				

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Initial Factor Method: Principal Components
Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 42 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	23.1126819	18.7262116	0.5503	0.5503
2	4.3864703	1.5486546	0.1044	0.6547
3	2.8378157	1.2047079	0.0676	0.7223
4	1.6331078	0.5483729	0.0389	0.7612
5	1.0847349	0.1422579	0.0258	0.7870
6	0.9424770	0.0249417	0.0224	0.8095
7	0.9175353	0.2255782	0.0218	0.8313
8	0.6919571	0.1457685	0.0165	0.8478
9	0.5461886	0.0140143	0.0130	0.8608
10	0.5321743	0.0503492	0.0127	0.8735
11	0.4818252	0.0829805	0.0115	0.8849
12	0.3988446	0.0709994	0.0095	0.8944
13	0.3278452	0.0292393	0.0078	0.9022
14	0.2986060	0.0050402	0.0071	0.9093
15	0.2935658	0.0118242	0.0070	0.9163
16	0.2817416	0.0392799	0.0067	0.9230
17	0.2424617	0.0064349	0.0058	0.9288
18	0.2360268	0.0109739	0.0056	0.9344
19	0.2250529	0.0070171	0.0054	0.9398
20	0.2180358	0.0135556	0.0052	0.9450
21	0.2044802	0.0151236	0.0049	0.9498
22	0.1893566	0.0070240	0.0045	0.9544
23	0.1823326	0.0279366	0.0043	0.9587
24	0.1543960	0.0144730	0.0037	0.9624
25	0.1399230	0.0040954	0.0033	0.9657
26	0.1358276	0.0083494	0.0032	0.9689
27	0.1274783	0.0067103	0.0030	0.9720
28	0.1207680	0.0139920	0.0029	0.9749
29	0.1067760	0.0072600	0.0025	0.9774
30	0.0995160	0.0021775	0.0024	0.9798
31	0.0973385	0.0063180	0.0023	0.9821
32	0.0910205	0.0007960	0.0022	0.9842
33	0.0902245	0.0098212	0.0021	0.9864
34	0.0804033	0.0073875	0.0019	0.9883
35	0.0730159	0.0009746	0.0017	0.9900
36	0.0720413	0.0026186	0.0017	0.9918
37	0.0694227	0.0048605	0.0017	0.9934
38	0.0645621	0.0050125	0.0015	0.9950
39	0.0595496	0.0022518	0.0014	0.9964
40	0.0572978	0.0029131	0.0014	0.9977
41	0.0543847	0.0136484	0.0013	0.9990
42	0.0407363		0.0010	1.0000

5 factors will be retained by the MINEIGEN criterion.

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5
1	0.75406	0.58919	-0.11904	0.26471	0.00227
2	0.42413	-0.20578	0.74260	-0.41817	0.22681
3	-0.49831	0.67400	0.49392	0.13986	0.18407
4	0.05643	-0.37488	0.37040	0.84114	-0.10759
5	-0.00012	-0.12529	-0.23069	0.16731	0.95031

Rotated Factor Pattern

Factor3	Factor4	Factor5	Factor1	Factor2	
GWA1	Getting information needed to do job		0.85837	0.34190	-
0.08256	0.19685	0.00147			
GWA2	Identifying objects, actions, and events		0.86136	0.31622	-
0.00529	0.14213	-0.03920			
GWA3	Monitoring processes, materials, or surroundings		0.67992	0.22951	
0.45895	0.11345	0.01728			
GWA4	Inspecting equipment, structures or materials		0.33833	0.07487	
0.75185	-0.24196	0.07855			
GWA5	Estimating the characteristics of materials, products, events or information		0.72059	0.42946	
0.10727	0.03346	0.19949			
GWA6	Judging the qualities of objects, services, or persons		0.78596	0.36797	-
0.07099	0.18579	0.06273			
GWA7	Evaluating information for compliance to standards		0.81670	0.33072	
0.07155	0.06137	-0.12728			

GWA8	Processing information	0.88039	0.27295	-
0.14070	0.08155 -0.10682			
GWA9	Analyzing data or information	0.89347	0.29538	-
0.07123	0.13123 0.00737			
GWA10	Making decisions and solving problems	0.83562	0.41192	-
0.04098	0.17183 0.05753			
GWA11	Thinking creatively	0.63539	0.38031	-
0.22287	0.07566 0.41774			
GWA12	Updating and using job-relevant knowledge	0.88643	0.22978	-
0.11853	0.16467 0.07491			
GWA13	Developing objectives and strategies	0.66720	0.58135	-
0.17270	0.19725 0.15789			
GWA14	Scheduling work and activities	0.41816	0.79226	-
0.10339	0.23268 0.02864			
GWA15	Organizing, planning, and prioritizing work	0.67426	0.58163	-
0.13932	0.20202 0.13433			
GWA16	Performing general physical activities	-0.47746	-0.08147	-
0.52918	0.16144 0.39949			
GWA17	Handling and moving objects	-0.42602	-0.29037	-
0.48899	-0.18784 0.39636			
GWA18	Controlling machines and processes	-0.13174	-0.18239	-
0.70838	-0.29970 0.15945			
GWA19	Interacting with computers	0.78876	0.19347	-
0.13855	0.02541 -0.11465			
GWA20	Operating vehicles, mechanized devices, or equipment	-0.26239	0.04830	-
0.49417	0.26269 -0.02258			
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.51022	0.11408	-
0.23636	-0.27659 0.48907			
GWA22	Implementing ideas, programs, systems or products	0.75613	0.36355	-
0.06784	0.01539 0.32162			
GWA23	Repairing and maintaining mechanical equipment	-0.16602	-0.10711	-
0.80942	-0.18015 0.00799			
GWA24	Repairing and maintaining electronic equipment	0.26488	-0.10895	-
0.65450	-0.07016 -0.14521			
GWA25	Documenting/recording information	0.81356	0.27548	-
0.05829	0.18825 -0.23629			
GWA26	Interpreting the meaning of information for others	0.81863	0.28717	-
0.13047	0.33518 -0.01571			
GWA27	Communicating with supervisors, peers or subordinates	0.69737	0.54435	-
0.08097	0.23834 -0.07119			
GWA28	Communicating with persons outside the organizations	0.56850	0.39172	-
0.27912	0.54368 -0.05721			
GWA29	Establishing and maintaining interpersonal relationships	0.40856	0.55910	-
0.19721	0.58918 -0.06626			
GWA30	Assisting and caring for others	0.17170	0.18621	-
0.03977	0.79976 0.01716			
GWA31	Selling or influencing others	0.36799	0.51955	-
0.20234	0.46187 -0.03118			
GWA32	Resolving conflicts and negotiating with others	0.30310	0.69852	-
0.17329	0.38309 -0.19093			
GWA33	Performing for or working directly with the public	0.16199	0.24344	-
0.25925	0.78363 -0.07938			
GWA34	Coordinating the work and activities of others	0.38928	0.82360	-
0.04297	0.14880 0.07823			
GWA35	Developing and building teams	0.34105	0.86034	-
0.00118	0.14772 0.09184			
GWA36	Teaching others	0.43868	0.55381	-
0.01170	0.40609 0.14757			
GWA37	Guiding, directing and motivating subordinates	0.31913	0.87573	-
0.00587	0.04243 0.07916			
GWA38	Coaching and developing others	0.31290	0.75282	-
0.01315	0.31054 0.10856			
GWA39	Providing consultation and advice to others	0.73760	0.49012	-
0.14360	0.28225 0.03704			
GWA40	Performing administrative activities	0.51444	0.65263	-
0.12934	0.20565 -0.33143			
GWA41	Staffing organizational units	0.14630	0.87565	-
0.08136	-0.01621 -0.09927			
GWA42	Monitoring and controlling resources	0.34137	0.78163	-
0.08897	0.11250 -0.07729			

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
14.641019	9.744900	3.720577	3.627875	1.320440

Final Communality Estimates: Total = 33.054810

GWA1	GWA2	GWA3	GWA4	GWA5	GWA6	GWA7	GWA8	GWA9	GWA10
GWA11	GWA12	GWA13	GWA14	GWA15	GWA16	GWA17	GWA18	GWA19	GWA20
GWA21	GWA22	GWA23	GWA24	GWA25	GWA26	GWA27	GWA28	GWA29	GWA30
GWA31	GWA32	GWA33	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA40
GWA41	GWA42	GWA43	GWA44	GWA45	GWA46	GWA47	GWA48	GWA49	GWA50
0.89926700	0.86370394	0.73876472	0.75006038	0.75611033	0.79663324	0.80146624	0.88745278	0.90787864	0.90244549
0.77825118	0.88534078	0.87679176	0.86818640						
0.87119128	0.70029343	0.69731066	0.66766465	0.69254912	0.38490281	0.64489858	0.81217686	0.72671393	0.53641246
0.83243394	0.88223556	0.85107581	0.85340926						
0.86993551	0.70564871	0.66059300	0.79304231	0.77308645	0.85996113	0.88675034	0.68597291	0.87685139	0.77303980
0.88593250	0.85944754	0.80490208	0.75402557						

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS- IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

GWA1	GWA2	GWA3	GWA4
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GWA5	GWA6	GWA7				
GWA1	Getting information needed to do job		1.00000	0.73559	0.23982	0.06070
0.44633	0.53948	0.54553				
GWA2	Identifying objects, actions, and events		0.73559	1.00000	0.44288	0.20602
0.49219	0.65788	0.53986				
GWA3	Monitoring processes, materials, or surroundings		0.23982	0.44288	1.00000	0.48479
0.27757	0.28840	0.28843				
GWA4	Inspecting equipment, structures or materials		0.06070	0.20602	0.48479	1.00000
0.21424	0.13101	0.25262				
GWA5	Estimating the characteristics of materials, products, events or information		0.44633	0.49219	0.27757	0.21424
1.00000	0.52021	0.31343				
GWA6	Judging the qualities of objects, services, or persons		0.53948	0.65788	0.28840	0.13101
0.52021	1.00000	0.52227				
GWA7	Evaluating information for compliance to standards		0.54553	0.53986	0.28843	0.25262
0.31343	0.52227	1.00000				
GWA8	Processing information		0.65920	0.63877	0.14533	-0.11870
0.39368	0.45392	0.57882				
GWA9	Analyzing data or information		0.77649	0.76066	0.27587	0.00003
0.51516	0.62098	0.52145				
GWA10	Making decisions and solving problems		0.68831	0.72550	0.34030	0.05501
0.59376	0.68601	0.48980				
GWA11	Thinking creatively		0.40051	0.35748	0.08443	-0.12602
0.40532	0.47036	0.23428				
GWA12	Updating and using job-relevant knowledge		0.66873	0.68708	0.29879	0.04945
0.47366	0.58560	0.47915				
GWA13	Developing objectives and strategies		0.55343	0.53456	0.21220	-0.13258
0.53298	0.60621	0.37524				
GWA14	Scheduling work and activities		0.40624	0.38378	0.17032	-0.12566
0.45231	0.47460	0.31329				
GWA15	Organizing, planning, and prioritizing work		0.56225	0.53762	0.21094	-0.07280
0.53182	0.63957	0.41944				
GWA16	Performing general physical activities		-0.42602	-0.35548	0.08863	0.31608
-0.12851	-0.34009	-0.32717				
GWA17	Handling and moving objects		-0.46545	-0.40007	0.06653	0.37698
-0.22864	-0.40699	-0.28794				
GWA18	Controlling machines and processes		-0.34227	-0.22161	0.31996	0.45656
-0.14142	-0.28542	-0.13261				
GWA19	Interacting with computers		0.49594	0.41992	0.03721	-0.19377
0.22413	0.32775	0.42858				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.18305	-0.10293	0.09448	0.16938
0.02480	-0.19074	-0.17345				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.27790	0.21538	0.13901	0.33847
0.38534	0.17883	0.22166				
GWA22	Implementing ideas, programs, systems or products		0.37580	0.39645	0.25581	0.14552
0.44885	0.50169	0.28955				
GWA23	Repairing and maintaining mechanical equipment		-0.21354	-0.11256	0.24441	0.58812
-0.08494	-0.19505	-0.04515				
GWA24	Repairing and maintaining electronic equipment		0.09589	0.16183	0.30150	0.47363
0.03018	0.00829	0.10073				
GWA25	Documenting/recording information		0.52516	0.56436	0.20165	-0.07197
0.25161	0.41355	0.52178				
GWA26	Interpreting the meaning of information for others		0.61886	0.58841	0.15170	-0.22067
0.34062	0.52544	0.42367				
GWA27	Communicating with supervisors, peers or subordinates		0.52352	0.51337	0.27896	-0.11051
0.42650	0.46491	0.38839				
GWA28	Communicating with persons outside the organizations		0.43590	0.37014	-0.06849	-0.34125
0.26336	0.40443	0.27222				
GWA29	Establishing and maintaining interpersonal relationships		0.39691	0.33779	0.05991	-0.30885
0.30979	0.42857	0.26818				
GWA30	Assisting and caring for others		0.13580	0.11538	0.06106	-0.26032
0.04468	0.14271	0.04194				
GWA31	Selling or influencing others		0.31513	0.29639	-0.02173	-0.22387
0.32650	0.39709	0.21640				
GWA32	Resolving conflicts and negotiating with others		0.37146	0.34193	0.08075	-0.19560
0.34456	0.41727	0.36899				
GWA33	Performing for or working directly with the public		0.13649	0.10246	-0.11918	-0.36368
0.03398	0.16518	0.04144				
GWA34	Coordinating the work and activities of others		0.39640	0.41574	0.30778	0.01610
0.49253	0.44249	0.32469				
GWA35	Developing and building teams		0.36212	0.37022	0.23695	-0.06525
0.45820	0.45611	0.30003				
GWA36	Teaching others		0.36325	0.34662	0.19195	-0.10524
0.31409	0.41374	0.24017				
GWA37	Guiding, directing and motivating subordinates		0.34682	0.36206	0.25448	0.00153
0.45293	0.41472	0.30060				
GWA38	Coaching and developing others		0.34832	0.32754	0.21427	-0.09990
0.36260	0.43509	0.24254				
GWA39	Providing consultation and advice to others		0.61094	0.59377	0.17091	-0.12472
0.48021	0.61806	0.44136				
GWA40	Performing administrative activities		0.46406	0.46882	0.14586	-0.10092
0.34434	0.43725	0.53192				
GWA41	Staffing organizational units		0.23969	0.25929	0.13133	-0.05531
0.36207	0.36926	0.24323				
GWA42	Monitoring and controlling resources		0.32476	0.37505	0.15682	-0.04546
0.48010	0.42817	0.35897				

Correlations

GWA12	GWA13	GWA14	GWA8	GWA9	GWA10	GWA11
GWA1	Getting information needed to do job		0.65920	0.77649	0.68831	0.40051
0.66873	0.55343	0.40624				
GWA2	Identifying objects, actions, and events		0.63877	0.76066	0.72550	0.35748
0.68708	0.53456	0.38378				
GWA3	Monitoring processes, materials, or surroundings		0.14533	0.27587	0.34030	0.08443
0.29879	0.21220	0.17032				
GWA4	Inspecting equipment, structures or materials		-0.11870	0.00003	0.05501	-0.12602
0.04945	-0.13258	-0.12566				
GWA5	Estimating the characteristics of materials, products, events or information		0.39368	0.51516	0.59376	0.40532
0.47366	0.53298	0.45231				
GWA6	Judging the qualities of objects, services, or persons		0.45392	0.62098	0.68601	0.47036
0.58560	0.60621	0.47460				
GWA7	Evaluating information for compliance to standards		0.57882	0.52145	0.48980	0.23428
0.47915	0.37524	0.31329				
GWA8	Processing information		1.00000	0.78636	0.62136	0.37201
0.65742	0.57612	0.46009				

GWA9	Analyzing data or information	0.78636	1.00000	0.82102	0.49520
0.76295	0.70813 0.51101				
GWA10	Making decisions and solving problems	0.62136	0.82102	1.00000	0.54574
0.72510	0.77023 0.63651				
GWA11	Thinking creatively	0.37201	0.49520	0.54574	1.00000
0.51736	0.62032 0.49549				
GWA12	Updating and using job-relevant knowledge	0.65742	0.76295	0.72510	0.51736
1.00000	0.65094 0.50228				
GWA13	Developing objectives and strategies	0.57612	0.70813	0.77023	0.62032
0.65094	1.00000 0.77973				
GWA14	Scheduling work and activities	0.46009	0.51101	0.63651	0.49549
0.50228	0.77973 1.00000				
GWA15	Organizing, planning, and prioritizing work	0.55501	0.67026	0.75372	0.64317
0.65917	0.83079 0.78678				
GWA16	Performing general physical activities	-0.54534	-0.50468	-0.39968	-0.35612
-0.39622	-0.40030 -0.31790				
GWA17	Handling and moving objects	-0.57750	-0.57568	-0.59178	-0.36955
-0.46409	-0.62717 -0.57415				

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

GWA12	GWA13	GWA14	GWA8	GWA9	GWA10	GWA11
GWA18	Controlling machines and processes		-0.39111	-0.38585	-0.42059	-0.34832
-0.32421	-0.49976 -0.44439					
GWA19	Interacting with computers		0.70339	0.59297	0.44407	0.37968
0.59415	0.46037 0.37385					
GWA20	Operating vehicles, mechanized devices, or equipment		-0.20395	-0.19790	-0.10491	-0.22662
-0.12904	-0.15388 -0.10972					
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.16836	0.25928	0.25838	0.44155
0.30710	0.22595 0.09743					
GWA22	Implementing ideas, programs, systems or products		0.25827	0.45952	0.51207	0.53010
0.50270	0.54058 0.36145					
GWA23	Repairing and maintaining mechanical equipment		-0.32147	-0.25644	-0.23695	-0.32015
-0.15578	-0.36725 -0.32936					
GWA24	Repairing and maintaining electronic equipment		-0.02831	0.06614	0.03981	-0.10302
0.19146	-0.15974 -0.13321					
GWA25	Documenting/recording information		0.77646	0.58656	0.50081	0.22316
0.54954	0.45129 0.42773					
GWA26	Interpreting the meaning of information for others		0.71984	0.73665	0.68921	0.47205
0.73370	0.70436 0.60341					
GWA27	Communicating with supervisors, peers or subordinates		0.60859	0.60636	0.65701	0.41410
0.59592	0.66203 0.68315					
GWA28	Communicating with persons outside the organizations		0.53562	0.49578	0.53173	0.41978
0.54133	0.58125 0.62635					
GWA29	Establishing and maintaining interpersonal relationships		0.48676	0.48486	0.56319	0.46105
0.54845	0.66073 0.74109					
GWA30	Assisting and caring for others		0.21898	0.18623	0.26627	0.16066
0.29582	0.31182 0.44465					
GWA31	Selling or influencing others		0.38031	0.41962	0.48298	0.45503
0.46501	0.60656 0.58333					
GWA32	Resolving conflicts and negotiating with others		0.44970	0.45746	0.54656	0.38428
0.45108	0.63039 0.69812					
GWA33	Performing for or working directly with the public		0.24869	0.17862	0.22096	0.23706
0.27563	0.29267 0.43967					
GWA34	Coordinating the work and activities of others		0.40814	0.47970	0.61990	0.43948
0.46630	0.70360 0.81538					
GWA35	Developing and building teams		0.38530	0.48523	0.59674	0.48833
0.47131	0.75635 0.77405					
GWA36	Teaching others		0.39083	0.46600	0.53447	0.43840
0.52460	0.68393 0.67937					
GWA37	Guiding, directing and motivating subordinates		0.35048	0.44190	0.57514	0.44089
0.41683	0.69733 0.77596					
GWA38	Coaching and developing others		0.34103	0.43173	0.54473	0.44720
0.47299	0.70876 0.73716					
GWA39	Providing consultation and advice to others		0.64800	0.75814	0.77416	0.57583
0.73967	0.81534 0.65745					
GWA40	Performing administrative activities		0.69489	0.54743	0.55015	0.27958
0.52016	0.57596 0.64939					
GWA41	Staffing organizational units		0.27499	0.32777	0.44456	0.32679
0.28091	0.58698 0.67942					
GWA42	Monitoring and controlling resources		0.47822	0.44931	0.51863	0.39401
0.41452	0.61792 0.68089					

Correlations

GWA19	GWA20	GWA21	GWA15	GWA16	GWA17	GWA18
GWA1	Getting information needed to do job		0.56225	-0.42602	-0.46545	-0.34227
0.49594	-0.18305 0.27790					
GWA2	Identifying objects, actions, and events		0.53762	-0.35548	-0.40007	-0.22161
0.41992	-0.10293 0.21538					
GWA3	Monitoring processes, materials, or surroundings		0.21094	0.08863	0.06653	0.31996
0.03721	0.09448 0.13901					
GWA4	Inspecting equipment, structures or materials		-0.07280	0.31608	0.37698	0.45656
-0.19377	0.16938 0.33847					
GWA5	Estimating the characteristics of materials, products, events or information		0.53182	-0.12851	-0.22864	-0.14142
0.22413	0.02480 0.38534					
GWA6	Judging the qualities of objects, services, or persons		0.63957	-0.34009	-0.40699	-0.28542
0.32775	-0.19074 0.17883					
GWA7	Evaluating information for compliance to standards		0.41944	-0.32717	-0.28794	-0.13261
0.42858	-0.17345 0.22166					
GWA8	Processing information		0.55501	-0.54534	-0.57750	-0.39111
0.70339	-0.20395 0.16836					
GWA9	Analyzing data or information		0.67026	-0.50468	-0.57568	-0.38585
0.59297	-0.19790 0.25928					
GWA10	Making decisions and solving problems		0.75372	-0.39968	-0.59178	-0.42059
0.44407	-0.10491 0.25838					
GWA11	Thinking creatively		0.64317	-0.35612	-0.36955	-0.34832
0.37968	-0.22662 0.44155					
GWA12	Updating and using job-relevant knowledge		0.65917	-0.39622	-0.46409	-0.32421

0.59415	-0.12904	0.30710				
GWA13	Developing objectives and strategies		0.83079	-0.40030	-0.62717	-0.49976
0.46037	-0.15388	0.22595				
GWA14	Scheduling work and activities		0.78678	-0.31790	-0.57415	-0.44439
0.37385	-0.10972	0.09743				
GWA15	Organizing, planning, and prioritizing work		1.00000	-0.37352	-0.55922	-0.46235
0.44435	-0.13946	0.25469				
GWA16	Performing general physical activities		-0.37352	1.00000	0.60731	0.43672
-0.55394	0.37589	-0.05281				
GWA17	Handling and moving objects		-0.55922	0.60731	1.00000	0.70393
-0.43569	0.12199	0.06928				
GWA18	Controlling machines and processes		-0.46235	0.43672	0.70393	1.00000
-0.35525	0.14111	0.09258				
GWA19	Interacting with computers		0.44435	-0.55394	-0.43569	-0.35525
1.00000	-0.24302	0.18807				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.13946	0.37589	0.12199	0.14111
-0.24302	1.00000	-0.09112				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.25469	-0.05281	0.06928	0.09258
0.18807	-0.09112	1.00000				
GWA22	Implementing ideas, programs, systems or products		0.56461	-0.18876	-0.11771	-0.09986
0.23368	-0.20158	0.45163				
GWA23	Repairing and maintaining mechanical equipment		-0.32492	0.46118	0.48697	0.57403
-0.34321	0.33317	0.06431				
GWA24	Repairing and maintaining electronic equipment		-0.06422	0.09147	0.23942	0.25892
0.07124	0.08379	0.19099				
GWA25	Documenting/recording information		0.47765	-0.43654	-0.50170	-0.33451
0.56735	-0.10058	0.02352				
GWA26	Interpreting the meaning of information for others		0.66507	-0.48462	-0.67088	-0.53690
0.59892	-0.14268	0.09758				
GWA27	Communicating with supervisors, peers or subordinates		0.67344	-0.33893	-0.60517	-0.43244
0.50699	-0.02466	0.10901				
GWA28	Communicating with persons outside the organizations		0.60374	-0.41590	-0.64919	-0.62226
0.44881	-0.06719	-0.03257				
GWA29	Establishing and maintaining interpersonal relationships		0.67125	-0.31468	-0.61516	-0.54505
0.44262	-0.05959	-0.01933				
GWA30	Assisting and caring for others		0.30163	-0.02878	-0.29011	-0.32447
0.18412	-0.00796	-0.15897				
GWA31	Selling or influencing others		0.58072	-0.32273	-0.54017	-0.44395
0.34993	-0.03927	0.05315				
GWA32	Resolving conflicts and negotiating with others		0.63881	-0.30008	-0.57500	-0.49603
0.37106	-0.03016	-0.01658				
GWA33	Performing for or working directly with the public		0.33977	-0.17236	-0.39796	-0.45610
0.20107	0.01291	-0.20594				
GWA34	Coordinating the work and activities of others		0.70457	-0.21863	-0.47224	-0.31579
0.32293	-0.02202	0.17884				
GWA35	Developing and building teams		0.70515	-0.23180	-0.47664	-0.34337
0.32716	-0.05682	0.14222				
GWA36	Teaching others		0.61828	-0.23391	-0.46199	-0.37591
0.32733	-0.06560	0.08625				
GWA37	Guiding, directing and motivating subordinates		0.66932	-0.23491	-0.43261	-0.29806
0.27723	-0.07461	0.15373				
GWA38	Coaching and developing others		0.63465	-0.22749	-0.46920	-0.34505
0.29750	-0.06029	0.07886				
GWA39	Providing consultation and advice to others		0.74576	-0.48501	-0.66302	-0.53004
0.55872	-0.17276	0.23730				
GWA40	Performing administrative activities		0.61980	-0.42787	-0.53832	-0.40050
0.55483	-0.11633	-0.01093				
GWA41	Staffing organizational units		0.55504	-0.22906	-0.38754	-0.29216
0.23214	-0.07696	0.01904				
GWA42	Monitoring and controlling resources		0.63887	-0.23390	-0.42214	-0.33774
0.35449	-0.05297	0.07584				

Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA1	Getting information needed to do job		0.37580	-0.21354	0.09589	0.52516
0.61886	0.52352	0.43590				
GWA2	Identifying objects, actions, and events		0.39645	-0.11256	0.16183	0.56436
0.58841	0.51337	0.37014				
GWA3	Monitoring processes, materials, or surroundings		0.25581	0.24441	0.30150	0.20165
0.15170	0.27896	-0.06849				
GWA4	Inspecting equipment, structures or materials		0.14552	0.58812	0.47363	-0.07197
-0.22067	-0.11051	-0.34125				
GWA5	Estimating the characteristics of materials, products, events or information		0.44885	-0.08494	0.03018	0.25161
0.34062	0.42650	0.26336				
GWA6	Judging the qualities of objects, services, or persons		0.50169	-0.19505	0.00829	0.41355
0.52544	0.46491	0.40443				
GWA7	Evaluating information for compliance to standards		0.28955	-0.04515	0.10073	0.52178
0.42367	0.38839	0.27222				
GWA8	Processing information		0.25827	-0.32147	-0.02831	0.77646
0.71984	0.60859	0.53562				
GWA9	Analyzing data or information		0.45952	-0.25644	0.06614	0.58656
0.73665	0.60636	0.49578				
GWA10	Making decisions and solving problems		0.51207	-0.23695	0.03981	0.50081
0.68921	0.65701	0.53173				
GWA11	Thinking creatively		0.53010	-0.32015	-0.10302	0.22316
0.47205	0.41410	0.41978				
GWA12	Updating and using job-relevant knowledge		0.50270	-0.15578	0.19146	0.54954
0.73370	0.59592	0.54133				
GWA13	Developing objectives and strategies		0.54058	-0.36725	-0.15974	0.45129
0.70436	0.66203	0.58125				
GWA14	Scheduling work and activities		0.36145	-0.32936	-0.13321	0.42773
0.60341	0.68315	0.62635				
GWA15	Organizing, planning, and prioritizing work		0.56461	-0.32492	-0.06422	0.47765
0.66507	0.67344	0.60374				
GWA16	Performing general physical activities		-0.18876	0.46118	0.09147	-0.43654
-0.48462	-0.33893	-0.41590				
GWA17	Handling and moving objects		-0.11771	0.48697	0.23942	-0.50170
-0.67088	-0.60517	-0.64919				
GWA18	Controlling machines and processes		-0.09986	0.57403	0.25892	-0.33451
-0.53690	-0.43244	-0.62226				
GWA19	Interacting with computers		0.23368	-0.34321	0.07124	0.56735
0.59892	0.50699	0.44881				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.20158	0.33317	0.08379	-0.10058
-0.14268	-0.02466	-0.06719				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.45163	0.06431	0.19099	0.02352

0.09758	0.10901	-0.03257				
GWA22	Implementing ideas, programs, systems or products		1.00000	-0.09140	0.12799	0.12548
0.32039	0.28764	0.18967				
GWA23	Repairing and maintaining mechanical equipment		-0.09140	1.00000	0.44674	-0.24859
-0.39841	-0.31147	-0.45284				
GWA24	Repairing and maintaining electronic equipment		0.12799	0.44674	1.00000	0.01939
-0.07082	-0.04019	-0.15263				
GWA25	Documenting/recording information		0.12548	-0.24859	0.01939	1.00000
0.65022	0.57692	0.54943				
GWA26	Interpreting the meaning of information for others		0.32039	-0.39841	-0.07082	0.65022
1.00000	0.69195	0.73336				
GWA27	Communicating with supervisors, peers or subordinates		0.28764	-0.31147	-0.04019	0.57692
0.69195	1.00000	0.59225				
GWA28	Communicating with persons outside the organizations		0.18967	-0.45284	-0.15263	0.54943
0.73336	0.59225	1.00000				
GWA29	Establishing and maintaining interpersonal relationships		0.23766	-0.38656	-0.13975	0.50086
0.71616	0.71113	0.80463				
GWA30	Assisting and caring for others		0.04669	-0.27961	-0.11081	0.31063
0.46070	0.41887	0.54644				
GWA31	Selling or influencing others		0.26080	-0.31270	-0.15506	0.37070
0.56086	0.49216	0.71184				
GWA32	Resolving conflicts and negotiating with others		0.22943	-0.32212	-0.15452	0.45672
0.57922	0.61081	0.70152				
GWA33	Performing for or working directly with the public		0.01055	-0.34599	-0.16102	0.32599
0.49627	0.34086	0.78675				
GWA34	Coordinating the work and activities of others		0.39345	-0.23018	-0.08839	0.36771
0.51139	0.75006	0.45763				
GWA35	Developing and building teams		0.40340	-0.24506	-0.10483	0.32386
0.52434	0.64636	0.45141				

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA36	Teaching others		0.34630	-0.25997	-0.04666	0.36839
0.64340	0.59508	0.52796				
GWA37	Guiding, directing and motivating subordinates		0.36247	-0.23185	-0.10777	0.28580
0.44401	0.64043	0.36725				
GWA38	Coaching and developing others		0.34004	-0.23605	-0.05783	0.33328
0.55493	0.61965	0.47280				
GWA39	Providing consultation and advice to others		0.45176	-0.36815	-0.05509	0.53282
0.80818	0.69558	0.69394				
GWA40	Performing administrative activities		0.20697	-0.28026	-0.04641	0.78136
0.62347	0.66035	0.63192				
GWA41	Staffing organizational units		0.27767	-0.20018	-0.12287	0.23836
0.32293	0.49432	0.34727				
GWA42	Monitoring and controlling resources		0.30255	-0.22316	-0.10100	0.46124
0.44944	0.56446	0.51686				

Correlations

GWA33	GWA34	GWA35	GWA29	GWA30	GWA31	GWA32
GWA1	Getting information needed to do job		0.39691	0.13580	0.31513	0.37146
0.13649	0.39640	0.36212				
GWA2	Identifying objects, actions, and events		0.33779	0.11538	0.29639	0.34193
0.10246	0.41574	0.37022				
GWA3	Monitoring processes, materials, or surroundings		0.05991	0.06106	-0.02173	0.08075
-0.11918	0.30778	0.23695				
GWA4	Inspecting equipment, structures or materials		-0.30885	-0.26032	-0.22387	-0.19560
-0.36368	0.01610	-0.06525				
GWA5	Estimating the characteristics of materials, products, events or information		0.30979	0.04468	0.32650	0.34456
0.03398	0.49253	0.45820				
GWA6	Judging the qualities of objects, services, or persons		0.42857	0.14271	0.39709	0.41727
0.16518	0.44249	0.45611				
GWA7	Evaluating information for compliance to standards		0.26818	0.04194	0.21640	0.36899
0.04144	0.32469	0.30003				
GWA8	Processing information		0.48676	0.21898	0.38031	0.44970
0.24869	0.40814	0.38530				
GWA9	Analyzing data or information		0.48486	0.18623	0.41962	0.45746
0.17862	0.47970	0.48523				
GWA10	Making decisions and solving problems		0.56319	0.26627	0.48298	0.54656
0.22096	0.61990	0.59674				
GWA11	Thinking creatively		0.46105	0.16066	0.45503	0.38428
0.23706	0.43948	0.48833				
GWA12	Updating and using job-relevant knowledge		0.54845	0.29582	0.46501	0.45108
0.27563	0.46630	0.47131				
GWA13	Developing objectives and strategies		0.66073	0.31182	0.60656	0.63039
0.29267	0.70360	0.75635				
GWA14	Scheduling work and activities		0.74109	0.44465	0.58333	0.69812
0.43967	0.81538	0.77405				
GWA15	Organizing, planning, and prioritizing work		0.67125	0.30163	0.58072	0.63881
0.33977	0.70457	0.70515				
GWA16	Performing general physical activities		-0.31468	-0.02878	-0.32273	-0.30008
-0.17236	-0.21863	-0.23180				
GWA17	Handling and moving objects		-0.61516	-0.29011	-0.54017	-0.57500
-0.39796	-0.47224	-0.47664				
GWA18	Controlling machines and processes		-0.54505	-0.32447	-0.44395	-0.49603
-0.45610	-0.31579	-0.34337				
GWA19	Interacting with computers		0.44262	0.18412	0.34993	0.37106
0.20107	0.32293	0.32716				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.05959	-0.00796	-0.03927	-0.03016
0.01291	-0.02202	-0.05682				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		-0.01933	-0.15897	0.05315	-0.01658
-0.20594	0.17884	0.14222				
GWA22	Implementing ideas, programs, systems or products		0.23766	0.04669	0.26080	0.22943
0.01055	0.39345	0.40340				
GWA23	Repairing and maintaining mechanical equipment		-0.38656	-0.27961	-0.31270	-0.32212
-0.34599	-0.23018	-0.24506				
GWA24	Repairing and maintaining electronic equipment		-0.13975	-0.11081	-0.15506	-0.15452

-0.16102	-0.08839	-0.10483				
GWA25	Documenting/recording information		0.50086	0.31063	0.37070	0.45672
0.32599	0.36771	0.32386				
GWA26	Interpreting the meaning of information for others		0.71616	0.46070	0.56086	0.57922
0.49627	0.51139	0.52434				
GWA27	Communicating with supervisors, peers or subordinates		0.71113	0.41887	0.49216	0.61081
0.34086	0.75006	0.64636				
GWA28	Communicating with persons outside the organizations		0.80463	0.54644	0.71184	0.70152
0.78675	0.45763	0.45141				
GWA29	Establishing and maintaining interpersonal relationships		1.00000	0.67215	0.73798	0.76162
0.68324	0.63381	0.63933				
GWA30	Assisting and caring for others		0.67215	1.00000	0.37907	0.42706
0.62291	0.32743	0.31133				
GWA31	Selling or influencing others		0.73798	0.37907	1.00000	0.73182
0.57078	0.47929	0.52625				
GWA32	Resolving conflicts and negotiating with others		0.76162	0.42706	0.73182	1.00000
0.56989	0.63136	0.66827				
GWA33	Performing for or working directly with the public		0.68324	0.62291	0.57078	0.56989
1.00000	0.27250	0.28110				
GWA34	Coordinating the work and activities of others		0.63381	0.32743	0.47929	0.63136
0.27250	1.00000	0.84533				
GWA35	Developing and building teams		0.63933	0.31133	0.52625	0.66827
0.28110	0.84533	1.00000				
GWA36	Teaching others		0.65558	0.47975	0.46004	0.49680
0.38327	0.63954	0.68837				
GWA37	Guiding, directing and motivating subordinates		0.54273	0.22450	0.41733	0.58707
0.17879	0.87654	0.87448				
GWA38	Coaching and developing others		0.67809	0.46419	0.48840	0.57166
0.31811	0.73388	0.81333				
GWA39	Providing consultation and advice to others		0.71345	0.37579	0.65843	0.63002
0.37334	0.60223	0.63079				
GWA40	Performing administrative activities		0.65651	0.36105	0.53669	0.68345
0.42271	0.58067	0.56030				
GWA41	Staffing organizational units		0.46566	0.16719	0.42563	0.56675
0.19813	0.66320	0.73478				
GWA42	Monitoring and controlling resources		0.62454	0.27699	0.55564	0.64940
0.36030	0.64065	0.62935				

Correlations

GWA40	GWA41	GWA42	GWA36	GWA37	GWA38	GWA39
GWA1	Getting information needed to do job		0.36325	0.34682	0.34832	0.61094
0.46406	0.23969	0.32476				
GWA2	Identifying objects, actions, and events		0.34662	0.36206	0.32754	0.59377
0.46882	0.25929	0.37505				
GWA3	Monitoring processes, materials, or surroundings		0.19195	0.25448	0.21427	0.17091
0.14586	0.13133	0.15682				
GWA4	Inspecting equipment, structures or materials		-0.10524	0.00153	-0.09990	-0.12472
-0.10092	-0.05531	-0.04546				
GWA5	Estimating the characteristics of materials, products, events or information		0.31409	0.45293	0.36260	0.48021
0.34434	0.36207	0.48010				
GWA6	Judging the qualities of objects, services, or persons		0.41374	0.41472	0.43509	0.61806
0.43725	0.36926	0.42817				
GWA7	Evaluating information for compliance to standards		0.24017	0.30060	0.24254	0.44136
0.53192	0.24323	0.35897				
GWA8	Processing information		0.39083	0.35048	0.34103	0.64800
0.69489	0.27499	0.47822				
GWA9	Analyzing data or information		0.46600	0.44190	0.43173	0.75814
0.54743	0.32777	0.44931				
GWA10	Making decisions and solving problems		0.53447	0.57514	0.54473	0.77416
0.55015	0.44456	0.51863				
GWA11	Thinking creatively		0.43840	0.44089	0.44720	0.57583
0.27958	0.32679	0.39401				
GWA12	Updating and using job-relevant knowledge		0.52460	0.41683	0.47299	0.73967
0.52016	0.28091	0.41452				
GWA13	Developing objectives and strategies		0.68393	0.69733	0.70876	0.81534
0.57596	0.58698	0.61792				
GWA14	Scheduling work and activities		0.67937	0.77596	0.73716	0.65745
0.64939	0.67942	0.68089				
GWA15	Organizing, planning, and prioritizing work		0.61828	0.66932	0.63465	0.74576
0.61980	0.55504	0.63887				
GWA16	Performing general physical activities		-0.23391	-0.23491	-0.22749	-0.48501
-0.42787	-0.22906	-0.23390				
GWA17	Handling and moving objects		-0.46199	-0.43261	-0.46920	-0.66302
-0.53832	-0.38754	-0.42214				
GWA18	Controlling machines and processes		-0.37591	-0.29806	-0.34505	-0.53004
-0.40050	-0.29216	-0.33774				
GWA19	Interacting with computers		0.32733	0.27723	0.29750	0.55872
0.55483	0.23214	0.35449				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.06560	-0.07461	-0.06029	-0.17276
-0.11633	-0.07696	-0.05297				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.08625	0.15373	0.07886	0.23730
-0.01093	0.01904	0.07584				
GWA22	Implementing ideas, programs, systems or products		0.34630	0.36247	0.34004	0.45176
0.20697	0.27767	0.30255				
GWA23	Repairing and maintaining mechanical equipment		-0.25997	-0.23185	-0.23605	-0.36815
-0.28026	-0.20018	-0.22316				
GWA24	Repairing and maintaining electronic equipment		-0.04666	-0.10777	-0.05783	-0.05509
-0.04641	-0.12287	-0.10100				
GWA25	Documenting/recording information		0.36839	0.28580	0.33328	0.53282
0.78136	0.23836	0.46124				
GWA26	Interpreting the meaning of information for others		0.64340	0.44401	0.55493	0.80818
0.62347	0.32293	0.44944				
GWA27	Communicating with supervisors, peers or subordinates		0.59508	0.64043	0.61965	0.69558
0.66035	0.49432	0.56446				
GWA28	Communicating with persons outside the organizations		0.52796	0.36725	0.47280	0.69394
0.63192	0.34727	0.51686				
GWA29	Establishing and maintaining interpersonal relationships		0.65558	0.54273	0.67809	0.71345
0.65651	0.46566	0.62454				
GWA30	Assisting and caring for others		0.47975	0.22450	0.46419	0.37579
0.36105	0.16719	0.27699				
GWA31	Selling or influencing others		0.46004	0.41733	0.48840	0.65843
0.53669	0.42563	0.55564				
GWA32	Resolving conflicts and negotiating with others		0.49680	0.58707	0.57166	0.63002
0.68345	0.56675	0.64940				
GWA33	Performing for or working directly with the public		0.38327	0.17879	0.31811	0.37334

0.42271	0.19813	0.36030				
GWA34	Coordinating the work and activities of others		0.63954	0.87654	0.73388	0.60223
0.58067	0.66320	0.64065				
GWA35	Developing and building teams		0.68837	0.87448	0.81333	0.63079
0.56030	0.73478	0.62935				
GWA36	Teaching others		1.00000	0.65912	0.88333	0.64486
0.47628	0.46180	0.45327				
GWA37	Guiding, directing and motivating subordinates		0.65912	1.00000	0.77736	0.55970
0.51311	0.75621	0.62614				
GWA38	Coaching and developing others		0.88333	0.77736	1.00000	0.63230
0.50320	0.62267	0.52409				
GWA39	Providing consultation and advice to others		0.64486	0.55970	0.63230	1.00000
0.60543	0.45132	0.54591				
GWA40	Performing administrative activities		0.47628	0.51311	0.50320	0.60543
1.00000	0.51584	0.70477				
GWA41	Staffing organizational units		0.46180	0.75621	0.62267	0.45132
0.51584	1.00000	0.61953				
GWA42	Monitoring and controlling resources		0.45327	0.62614	0.52409	0.54591
0.70477	0.61953	1.00000				

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure
 Initial Factor Method: Principal Components
 Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 42 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	18.5717153	14.3127003	0.4422	0.4422
2	4.2590149	1.1175312	0.1014	0.5436
3	3.1414838	1.0829707	0.0748	0.6184
4	2.0585131	0.5230758	0.0490	0.6674
5	1.5354373	0.3866301	0.0366	0.7040
6	1.1488072	0.0870401	0.0274	0.7313
7	1.0617671	0.1388300	0.0253	0.7566
8	0.9229371	0.1093832	0.0220	0.7786
9	0.8135539	0.1951135	0.0194	0.7979
10	0.6184404	0.0359129	0.0147	0.8127
11	0.5825275	0.0349745	0.0139	0.8265
12	0.5475530	0.0603372	0.0130	0.8396
13	0.4872158	0.0350373	0.0116	0.8512
14	0.4521785	0.0271531	0.0108	0.8619
15	0.4250254	0.0203559	0.0101	0.8721
16	0.4046696	0.0204088	0.0096	0.8817
17	0.3842607	0.0348905	0.0091	0.8908
18	0.3493702	0.0214728	0.0083	0.8992
19	0.3278975	0.0104921	0.0078	0.9070
20	0.3174054	0.0088788	0.0076	0.9145
21	0.3085266	0.0397070	0.0073	0.9219
22	0.2688195	0.0041827	0.0064	0.9283
23	0.2646368	0.0171013	0.0063	0.9346
24	0.2475355	0.0061599	0.0059	0.9405
25	0.2413756	0.0278148	0.0057	0.9462
26	0.2135608	0.0021627	0.0051	0.9513
27	0.2113981	0.0216071	0.0050	0.9563
28	0.1897910	0.0159923	0.0045	0.9608
29	0.1737987	0.0071244	0.0041	0.9650
30	0.1666742	0.0068050	0.0040	0.9689
31	0.1598692	0.0137964	0.0038	0.9728
32	0.1460729	0.0120696	0.0035	0.9762
33	0.1340033	0.0052085	0.0032	0.9794
34	0.1287948	0.0123948	0.0031	0.9825
35	0.1164000	0.0051511	0.0028	0.9853
36	0.1112489	0.0068843	0.0026	0.9879
37	0.1043646	0.0087025	0.0025	0.9904
38	0.0956621	0.0061513	0.0023	0.9927
39	0.0895108	0.0111799	0.0021	0.9948
40	0.0783309	0.0025893	0.0019	0.9967
41	0.0757416	0.0116310	0.0018	0.9985
42	0.0641106		0.0015	1.0000

7 factors will be retained by the MINEIGEN criterion.

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure
 Initial Factor Method: Principal Components
 Final Communality Estimates: Total = 31.776739

GWA1	GWA2	GWA3	GWA4	GWA5	GWA6	GWA7	GWA8	GWA9	GWA10
GWA11	GWA12	GWA13	GWA14						

0.71486482	0.79427068	0.62761067	0.74288548	0.64611586	0.60515086	0.61805338	0.82009310	0.85042666	0.84098201
0.71399913	0.79664552	0.85071443	0.82506589						
GWA15	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22	GWA23	GWA24
GWA25	GWA26	GWA27	GWA28						
0.80716348	0.66763943	0.76267132	0.67804846	0.68853521	0.59925939	0.65079612	0.66812938	0.66234009	0.55916119
0.77765456	0.84316224	0.72019144	0.87151134						
GWA29	GWA30	GWA31	GWA32	GWA33	GWA34	GWA35	GWA36	GWA37	GWA38
GWA39	GWA40	GWA41	GWA42						
0.88525601	0.72245682	0.73021891	0.78397871	0.80266101	0.83790280	0.86547712	0.79940578	0.89128352	0.86168596
0.82368211	0.86705810	0.74519020	0.75733940						

PRINCIPAL COMPONENT ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5	6
7						
0.06642	1	0.62115	0.60250	0.38987	-0.17139	0.24474
-0.02541	2	0.36868	-0.00485	-0.49998	0.67996	0.38020
-0.03863	3	-0.58483	0.69147	0.01369	0.26220	0.05305
0.12122	4	0.20369	-0.11073	0.47997	0.54338	-0.58505
-0.39155	5	-0.14519	-0.34418	0.55315	0.11571	0.58581
0.80662	6	-0.02876	-0.16766	0.02111	-0.14841	0.27232
0.41810	7	-0.26986	0.00112	0.24708	0.32994	0.18200

Rotated Factor Pattern

Factor5	Factor6	Factor7	Factor1	Factor2	Factor3	Factor4
GWA1	Getting information needed to do job		0.79242	0.15165	0.06455	-0.02574
0.23674	-0.02396	-0.04989				
GWA2	Identifying objects, actions, and events		0.83177	0.19240	0.01541	0.12305
0.18613	0.11594	-0.04417				
GWA3	Monitoring processes, materials, or surroundings		0.33608	0.29137	-0.09631	0.59581
0.00623	0.16156	-0.19838				
GWA4	Inspecting equipment, structures or materials		0.09013	0.00699	-0.28683	0.74990
0.16745	0.22603	0.10473				
GWA5	Estimating the characteristics of materials, products, events or information		0.39777	0.36995	-0.04758	0.05133
0.47249	0.30004	0.18127				
GWA6	Judging the qualities of objects, services, or persons		0.59317	0.31680	0.05354	-0.03598
0.36559	0.12020	0.02600				
GWA7	Evaluating information for compliance to standards		0.64037	0.18927	-0.02602	0.20239
0.06894	-0.16448	0.31419				
GWA8	Processing information		0.80901	0.18109	0.18276	-0.10171
0.02009	-0.24281	0.17235				
GWA9	Analyzing data or information		0.82851	0.25555	0.10903	-0.07345
0.27660	-0.04721	-0.05174				
GWA10	Making decisions and solving problems		0.70173	0.43019	0.14894	-0.06338
0.33958	0.13479	-0.06177				
GWA11	Thinking creatively		0.23910	0.30607	0.19701	-0.20677
0.67734	-0.14800	-0.02980				
GWA12	Updating and using job-relevant knowledge		0.69319	0.22523	0.32798	0.10937
0.35872	-0.09079	-0.09462				
GWA13	Developing objectives and strategies		0.47597	0.62577	0.21651	-0.22542
0.36437	0.00397	-0.04589				
GWA14	Scheduling work and activities		0.27367	0.76014	0.34529	-0.13806
0.16086	-0.03326	0.08418				
GWA15	Organizing, planning, and prioritizing work		0.46349	0.57718	0.26709	-0.13571
0.40529	-0.00216	0.07197				
GWA16	Performing general physical activities		-0.52932	-0.08572	-0.01737	0.42316
-0.06439	0.43594	-0.08101				
GWA17	Handling and moving objects		-0.54509	-0.33207	-0.26504	0.53213
0.04283	-0.00321	0.00473				
GWA18	Controlling machines and processes		-0.32220	-0.18490	-0.34833	0.64487
-0.05332	0.00452	0.00067				
GWA19	Interacting with computers		0.58075	0.12479	0.22787	-0.08150
0.08942	-0.50114	0.13412				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.10723	-0.02600	0.11269	0.20608
-0.20164	0.70028	0.02940				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.11843	0.01365	-0.12165	0.24633
0.73033	-0.14935	0.07365				
GWA22	Implementing ideas, programs, systems or products		0.23883	0.28011	0.00909	0.11124
0.71186	-0.09271	-0.06952				
GWA23	Repairing and maintaining mechanical equipment		-0.18063	-0.15305	-0.17824	0.70667
-0.05165	0.26077	0.06685				
GWA24	Repairing and maintaining electronic equipment		0.12564	-0.15612	0.04874	0.69877
0.09468	-0.12630	-0.05858				
GWA25	Documenting/recording information		0.71912	0.17708	0.31443	0.02763
-0.19233	-0.19654	0.23221				
GWA26	Interpreting the meaning of information for others		0.67059	0.29219	0.48457	-0.17984
0.11664	-0.10282	-0.12953				
GWA27	Communicating with supervisors, peers or subordinates		0.53006	0.57496	0.32345	-0.05619
0.01120	-0.02066	-0.01771				
GWA28	Communicating with persons outside the organizations		0.39610	0.23671	0.72918	-0.30920
0.09935	0.00621	0.14621				
GWA29	Establishing and maintaining interpersonal relationships		0.29878	0.49280	0.71246	-0.18637
0.08577	-0.02548	0.05284				
GWA30	Assisting and caring for others		0.06425	0.24333	0.76363	-0.01734
-0.11807	-0.03312	-0.24626				
GWA31	Selling or influencing others		0.22268	0.34141	0.58415	-0.24492
0.26848	0.08577	0.28881				

GWA32	Resolving conflicts and negotiating with others	0.28725	0.53917	0.50154	-0.18839
0.07042	0.06634 0.33820				
GWA33	Performing for or working directly with the public	0.06170	0.11277	0.84822	-0.22490
-0.03228	0.04793 0.11287				
GWA34	Coordinating the work and activities of others	0.26371	0.84799	0.16731	-0.00177
0.13862	0.02521 0.03782				
GWA35	Developing and building teams	0.20786	0.86837	0.17699	-0.06475
0.17920	-0.02053 0.01252				
GWA36	Teaching others	0.25067	0.65509	0.40479	-0.01714
0.12173	-0.10720 -0.34200				
GWA37	Guiding, directing and motivating subordinates	0.19137	0.91205	0.03426	-0.04848
0.13341	-0.03624 0.01360				
GWA38	Coaching and developing others	0.18637	0.80524	0.31615	-0.01926
0.10670	-0.08545 -0.24397				
GWA39	Providing consultation and advice to others	0.60335	0.42063	0.37122	-0.18300
0.32749	-0.04832 -0.04299				
GWA40	Performing administrative activities	0.53632	0.46908	0.36473	-0.02339
-0.12806	-0.18575 0.41822				
GWA41	Staffing organizational units	0.10395	0.81089	0.01633	-0.11997
0.05468	-0.02681 0.24180				
GWA42	Monitoring and controlling resources	0.27179	0.61503	0.26561	-0.05077
0.12080	0.01643 0.46607				

Variance Explained by Each Factor

Factor7	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
1.2880856	9.0148510	8.4833166	4.8975183	3.4998836	3.0887953	1.5042883

Final Communality Estimates: Total = 31.776739

GWA1	GWA2	GWA3	GWA4	GWA5	GWA6	GWA7	GWA8	GWA9	GWA10
GWA11	GWA12	GWA13	GWA14	GWA15	GWA16	GWA17	GWA18	GWA19	GWA20
0.71486482	0.79427068	0.62761067	0.74288548	0.64611586	0.60515086	0.61805338	0.82009310	0.85042666	0.84098201
0.71399913	0.79664552	0.85071443	0.82506589						
GWA25	GWA26	GWA27	GWA28	GWA29	GWA30	GWA31	GWA32	GWA33	GWA34
0.80716348	0.66763943	0.76267132	0.67804846	0.68853521	0.59925939	0.65079612	0.66812938	0.66234009	0.55916119
0.77765456	0.84316224	0.72019144	0.87151134						
GWA39	GWA40	GWA41	GWA42	GWA43	GWA44	GWA45	GWA46	GWA47	GWA48
0.88525601	0.72245682	0.73021891	0.78397871	0.80266101	0.83790280	0.86547712	0.79940578	0.89128352	0.86168596
0.82368211	0.86705810	0.74519020	0.75733940						

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-LEVEL SCALE

The FACTOR Procedure

Correlations

GWA1	GWA2	GWA3	GWA9	GWA10
GWA11	GWA12	GWA13	GWA15	
GWA1	GWA1	Getting information needed to do job	1.00000	0.90697
0.69567	0.86648	0.82289	0.83834	0.91409
GWA2	GWA2	Identifying objects, actions, and events	0.90697	1.00000
0.64525	0.85705	0.77303	0.78660	0.89846
GWA3	GWA3	Monitoring processes, materials, or surroundings	0.65542	0.70389
0.42704	0.72585	0.53931	0.53629	0.68143
GWA9	GWA9	Analyzing data or information	0.92141	0.89621
0.67710	0.87458	0.82897	0.80481	0.92836
GWA10	GWA10	Making decisions and solving problems	0.91409	0.89846
0.71089	0.85987	0.86597	0.85997	1.00000
GWA11	GWA11	Thinking creatively	0.69567	0.64525
1.00000	0.66240	0.73668	0.75999	0.67710
GWA12	GWA12	Updating and using job-relevant knowledge	0.86648	0.85705
0.66240	1.00000	0.74419	0.74864	0.85987
GWA13	GWA13	Developing objectives and strategies	0.82289	0.77303
0.73668	0.74419	1.00000	0.88606	0.86597
GWA15	GWA15	Organizing, planning, and prioritizing work	0.83834	0.78660
0.75999	0.74864	0.88606	1.00000	0.85997
GWA26	GWA26	Interpreting the meaning of information for others	0.87184	0.83261
0.65316	0.82108	0.80192	0.78540	0.88293
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.66540	0.60038
0.56509	0.55176	0.71348	0.74164	0.59639
GWA30	GWA30	Assisting and caring for others	0.35667	0.32698
0.23521	0.33782	0.36179	0.35117	0.29793
GWA31	GWA31	Selling or influencing others	0.56207	0.52803
0.53266	0.48897	0.68477	0.67994	0.52623
GWA32	GWA32	Resolving conflicts and negotiating with others	0.57827	0.52847
0.45370	0.45398	0.68431	0.69386	0.52701
GWA34	GWA34	Coordinating the work and activities of others	0.64678	0.61841
0.57417	0.56149	0.74458	0.75663	0.60320
GWA35	GWA35	Developing and building teams	0.61053	0.57356
0.59126	0.53770	0.76172	0.74967	0.58736
GWA36	GWA36	Teaching others	0.64508	0.57803
0.54877	0.60511	0.70417	0.67590	0.61729
GWA37	GWA37	Guiding, directing and motivating subordinates	0.60523	0.57015
0.54806	0.51532	0.71224	0.71533	0.56562
GWA38	GWA38	Coaching and developing others	0.59423	0.53881
0.54933	0.52062	0.70900	0.68278	0.54881
GWA39	GWA39	Providing consultation and advice to others	0.85509	0.81237
0.70122	0.79166	0.87997	0.85867	0.85986
GWA42	GWA42	Monitoring and controlling resources	0.57071	0.56590
0.54253	0.48208	0.72160	0.72107	0.35293
KN1	KN1	Administration and Management	0.73706	0.67013
0.57226	0.61169	0.81664	0.79089	0.43852

KN22	KN22 Therapy and Counseling			0.36053	0.32161	0.31294	0.32644	0.36370
0.23885	0.34801	0.37727	0.33536					
sk2	SK2 Active listening			0.78187	0.69622	0.43065	0.71851	0.74053
0.53824	0.66974	0.70404	0.73850					
sk5	SK5 Mathematics			0.69674	0.68381	0.52133	0.74572	0.68729
0.47596	0.70545	0.59873	0.58301					
sk6	SK6 Science			0.54046	0.60422	0.64082	0.60604	0.54980
0.37991	0.66454	0.40010	0.41482					
sk7	SK7 Critical thinking			0.88165	0.83203	0.61506	0.85729	0.87047
0.61793	0.80255	0.77186	0.80836					
sk8	SK8 Active learning			0.87401	0.82431	0.57437	0.86061	0.85323
0.69405	0.81042	0.78542	0.80617					
sk9	SK9 Learning strategies			0.73625	0.65943	0.48572	0.69160	0.70887
0.60600	0.66413	0.72169	0.73489					
sk10	SK10 Monitoring			0.77948	0.71407	0.54515	0.74165	0.77635
0.62445	0.69407	0.76035	0.78106					
sk11	SK11 Social Perceptiveness			0.61946	0.53575	0.31553	0.54470	0.60972
0.47898	0.48356	0.65629	0.67884					
sk12	SK12 Coordination			0.67108	0.60964	0.47384	0.59369	0.68982
0.50591	0.54416	0.69695	0.74329					
sk13	SK13 Persuasion			0.70107	0.63674	0.39621	0.64539	0.70063
0.51861	0.59371	0.73113	0.74970					
sk14	SK14 Negotiation			0.65094	0.59420	0.34922	0.58915	0.67524
0.47965	0.51775	0.70900	0.74349					
sk15	SK15 Instructing			0.65289	0.58392	0.47817	0.59215	0.63338
0.51026	0.58224	0.65538	0.66928					
sk17	SK17 Problem identification			0.80447	0.76574	0.64573	0.79439	0.81653
0.51466	0.77478	0.73320	0.73899					
sk18	SK18 Information gathering			0.89800	0.83513	0.54866	0.89111	0.85596
0.60964	0.80790	0.79400	0.78721					
sk19	SK19 Information organization			0.85385	0.78923	0.48014	0.83881	0.79985
0.63489	0.76121	0.75329	0.75512					
sk20	SK20 Synthesis/Reorganization			0.85969	0.78927	0.50137	0.84229	0.82849
0.70057	0.77589	0.77871	0.80598					
sk22	SK22 Idea evaluation			0.85152	0.77829	0.55060	0.82418	0.85740
0.72154	0.75202	0.83820	0.84603					
sk24	SK24 Solution appraisal			0.82441	0.75558	0.55433	0.81497	0.82894
0.64202	0.75882	0.80641	0.79866					
sk37	SK37 Visioning			0.79515	0.72309	0.54409	0.75965	0.79969
0.63659	0.70901	0.78434	0.78457					
sk38	SK38 Systems perceptions			0.77322	0.72695	0.63642	0.75506	0.78571
0.50715	0.69293	0.73567	0.72402					
sk39	SK39 Identification of downstream consequences			0.79179	0.75031	0.59202	0.78552	0.81587
0.57047	0.71705	0.80119	0.77588					
sk40	SK40 Identification of key causes			0.80916	0.73595	0.55457	0.78457	0.82021
0.59967	0.71925	0.80531	0.80221					
sk41	SK41 Judgment and decision making			0.83499	0.78200	0.57958	0.81768	0.85817
0.57962	0.74511	0.80008	0.78933					
sk42	SK42 Systems evaluation			0.78260	0.73841	0.59438	0.77887	0.81001
0.55893	0.70999	0.78016	0.75732					
sk43	SK43 Time management			0.69426	0.61297	0.41344	0.62670	0.69380
0.55721	0.56466	0.74072	0.76689					
sk46	SK46 Management of personnel resources			0.60620	0.56001	0.42054	0.54971	0.63808
0.50773	0.48655	0.68940	0.71146					

				Correlations				
GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
GWA1	GWA1 Getting information needed to do job			0.87184	0.66540	0.35667	0.56207	0.57827
0.64678	0.61053	0.64508	0.60523					
GWA2	GWA2 Identifying objects, actions, and events			0.83261	0.60038	0.32698	0.52803	0.52847
0.61841	0.57356	0.57803	0.57015					
GWA3	GWA3 Monitoring processes, materials, or surroundings			0.57097	0.36208	0.28056	0.27284	0.30435
0.50801	0.45274	0.48213	0.44798					

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-LEVEL SCALE

The FACTOR Procedure

Correlations

				GWA26	GWA29	GWA30	GWA31	GWA32
GWA34	GWA35	GWA36	GWA37					
GWA9	GWA9 Analyzing data or information			0.88293	0.59639	0.29793	0.52623	0.52701
0.60320	0.58736	0.61729	0.56562					
GWA10	GWA10 Making decisions and solving problems			0.85579	0.66189	0.35152	0.58213	0.61203
0.68923	0.66668	0.64034	0.64729					
GWA11	GWA11 Thinking creatively			0.65316	0.56509	0.23521	0.53266	0.45370
0.57417	0.59126	0.54877	0.54806					
GWA12	GWA12 Updating and using job-relevant knowledge			0.82108	0.55176	0.33782	0.48897	0.45398
0.56149	0.53770	0.60511	0.51532					
GWA13	GWA13 Developing objectives and strategies			0.80192	0.71348	0.36179	0.68477	0.68431
0.74458	0.76172	0.70417	0.71224					
GWA15	GWA15 Organizing, planning, and prioritizing work			0.78540	0.74164	0.35117	0.67994	0.69386
0.75663	0.74967	0.67590	0.71533					
GWA26	GWA26 Interpreting the meaning of information for others			1.00000	0.71518	0.43417	0.59964	0.58311
0.60976	0.58344	0.69266	0.54494					
GWA29	GWA29 Establishing and maintaining interpersonal relationships			0.71518	1.00000	0.66208	0.77166	0.78415
0.70496	0.69288	0.68970	0.63172					
GWA30	GWA30 Assisting and caring for others			0.43417	0.66208	1.00000	0.44048	0.45778
0.36592	0.35621	0.51503	0.28590					
GWA31	GWA31 Selling or influencing others			0.59964	0.77166	0.44048	1.00000	0.77088
0.58573	0.61411	0.54576	0.50884					
GWA32	GWA32 Resolving conflicts and negotiating with others			0.58311	0.78415	0.45778	0.77088	1.00000
0.70914	0.73571	0.56067	0.67114					

GWA34	GWA34	Coordinating the work and activities of others	0.60976	0.70496	0.36592	0.58573	0.70914
1.00000	0.88187	0.67269	0.90378				
GWA35	GWA35	Developing and building teams	0.58344	0.69288	0.35621	0.61411	0.73571
0.88187	1.00000	0.70885	0.89117				
GWA36	GWA36	Teaching others	0.69266	0.68970	0.51503	0.54576	0.56067
0.67269	0.70885	1.00000	0.69056				
GWA37	GWA37	Guiding, directing and motivating subordinates	0.54494	0.63172	0.28590	0.50884	0.67114
0.90378	0.89117	0.69056	1.00000				
GWA38	GWA38	Coaching and developing others	0.59281	0.71425	0.47827	0.57746	0.65762
0.76834	0.84201	0.87858	0.81221				
GWA39	GWA39	Providing consultation and advice to others	0.87469	0.76680	0.41638	0.72099	0.69375
0.71292	0.70740	0.73519	0.66532				
GWA42	GWA42	Monitoring and controlling resources	0.53749	0.68807	0.29951	0.65097	0.71840
0.74576	0.74383	0.55161	0.72843				
KN1	KN1	Administration and Management	0.67365	0.73695	0.35792	0.62337	0.73079
0.82989	0.80158	0.67313	0.82987				
KN22	KN22	Therapy and Counseling	0.38107	0.49239	0.71391	0.31838	0.33611
0.27630	0.32899	0.53275	0.26977				
sk2	SK2	Active listening	0.78006	0.81327	0.56286	0.64149	0.67180
0.60929	0.56877	0.63857	0.54485				
sk5	SK5	Mathematics	0.63486	0.36085	0.07898	0.32740	0.30108
0.44726	0.38940	0.40615	0.42569				
sk6	SK6	Science	0.50385	0.14971	0.10294	0.08809	0.01018
0.27088	0.21666	0.34509	0.24472				
sk7	SK7	Critical thinking	0.80562	0.63705	0.35187	0.53874	0.55802
0.61052	0.57814	0.61664	0.58502				
sk8	SK8	Active learning	0.80699	0.61380	0.31141	0.51447	0.50190
0.59187	0.57864	0.62900	0.58418				
sk9	SK9	Learning strategies	0.68881	0.64535	0.41408	0.47143	0.50554
0.59903	0.62474	0.76124	0.63853				
sk10	SK10	Monitoring	0.70995	0.67425	0.36019	0.52091	0.56295
0.63265	0.63530	0.65791	0.63681				
sk11	SK11	Social Perceptiveness	0.64276	0.84466	0.65543	0.67658	0.72615
0.58981	0.59320	0.65783	0.55688				
sk12	SK12	Coordination	0.60832	0.71648	0.41798	0.55637	0.65218
0.79081	0.73166	0.61764	0.73220				
sk13	SK13	Persuasion	0.67901	0.76954	0.47024	0.76816	0.72996
0.62461	0.60158	0.62328	0.57536				
sk14	SK14	Negotiation	0.58491	0.71771	0.35021	0.74139	0.81119
0.67043	0.64576	0.54386	0.64405				
sk15	SK15	Instructing	0.64714	0.67972	0.48089	0.51791	0.53908
0.67915	0.66437	0.85528	0.69743				
sk17	SK17	Problem identification	0.74072	0.59939	0.35951	0.52499	0.55931
0.58830	0.57043	0.59109	0.54757				
sk18	SK18	Information gathering	0.84593	0.61616	0.31528	0.53810	0.54197
0.57569	0.54843	0.59103	0.54062				
sk19	SK19	Information organization	0.80891	0.60130	0.29983	0.48704	0.49917
0.54434	0.53160	0.59098	0.51909				
sk20	SK20	Synthesis/Reorganization	0.80345	0.61740	0.28942	0.50165	0.50918
0.57385	0.56358	0.59631	0.55836				
sk22	SK22	Idea evaluation	0.76760	0.64232	0.31115	0.56439	0.56097
0.64214	0.64329	0.65340	0.64227				
sk24	SK24	Solution appraisal	0.74940	0.62405	0.30966	0.53577	0.53906
0.61633	0.61822	0.62633	0.60658				
sk37	SK37	Visioning	0.68992	0.57630	0.22554	0.51208	0.52338
0.63863	0.63506	0.59712	0.63958				
sk38	SK38	Systems perceptions	0.66667	0.54104	0.21995	0.46455	0.52182
0.63448	0.60929	0.56128	0.61654				
sk39	SK39	Identification of downstream consequences	0.69489	0.56922	0.22351	0.53017	0.55443
0.65043	0.62822	0.58378	0.63886				
sk40	SK40	Identification of key causes	0.71822	0.62883	0.31419	0.57083	0.59498
0.63782	0.62750	0.61775	0.62038				
sk41	SK41	Judgment and decision making	0.75145	0.62695	0.34488	0.55512	0.59164
0.63503	0.61721	0.58981	0.60485				
sk42	SK42	Systems evaluation	0.68394	0.56471	0.20592	0.50877	0.55353
0.66610	0.64735	0.57671	0.66234				
sk43	SK43	Time management	0.62011	0.70012	0.36192	0.55458	0.65505
0.77556	0.74178	0.65190	0.79240				
sk46	SK46	Management of personnel resources	0.52455	0.64084	0.28234	0.49825	0.64407
0.85299	0.82078	0.64876	0.89055				

Correlations

				GWA38	GWA39	GWA42	KN1	KN22
sk2	sk5	sk6	sk7					
GWA1	GWA1	Getting information needed to do job		0.59423	0.85509	0.57071	0.73706	0.36053
0.78187	0.69674	0.54046	0.88165					
GWA2	GWA2	Identifying objects, actions, and events		0.53881	0.81237	0.56590	0.67013	0.32161
0.69622	0.68381	0.60422	0.83203					
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.44335	0.55559	0.35293	0.43852	0.31294
0.43065	0.52133	0.64082	0.61506					
GWA9	GWA9	Analyzing data or information		0.54881	0.85986	0.54894	0.70084	0.32644
0.71851	0.74572	0.60604	0.85729					
GWA10	GWA10	Making decisions and solving problems		0.61073	0.87854	0.61343	0.75233	0.36370
0.74053	0.68729	0.54980	0.87047					
GWA11	GWA11	Thinking creatively		0.54933	0.70122	0.54253	0.57226	0.23885
0.53824	0.47596	0.37991	0.61793					
GWA12	GWA12	Updating and using job-relevant knowledge		0.52062	0.79166	0.48208	0.61169	0.34801
0.66974	0.70545	0.66454	0.80255					
GWA13	GWA13	Developing objectives and strategies		0.70900	0.87997	0.72160	0.81664	0.37727
0.70404	0.59873	0.40010	0.77186					
GWA15	GWA15	Organizing, planning, and prioritizing work		0.68278	0.85867	0.72107	0.79089	0.33536
0.73850	0.58301	0.41482	0.80836					
GWA26	GWA26	Interpreting the meaning of information for others		0.59281	0.87469	0.53749	0.67365	0.38107
0.78006	0.63486	0.50385	0.80562					
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.71425	0.76680	0.68807	0.73695	0.49239
0.81327	0.36085	0.14971	0.63705					
GWA30	GWA30	Assisting and caring for others		0.47827	0.41638	0.29951	0.35792	0.71391
0.56286	0.07898	0.10294	0.35187					
GWA31	GWA31	Selling or influencing others		0.57746	0.72099	0.65097	0.62337	0.31838
0.64149	0.32740	0.08809	0.53874					
GWA32	GWA32	Resolving conflicts and negotiating with others		0.65762	0.69375	0.71840	0.73079	0.33611
0.67180	0.30108	0.01018	0.55802					
GWA34	GWA34	Coordinating the work and activities of others		0.76834	0.71292	0.74576	0.82989	0.27630
0.60929	0.44726	0.27088	0.61052					
GWA35	GWA35	Developing and building teams		0.84201	0.70740	0.74383	0.80158	0.32899
0.56877	0.38940	0.21666	0.57814					

GWA36	GWA36	Teaching others	0.87858	0.73519	0.55161	0.67313	0.53275
0.63857		0.40615 0.34509 0.61664					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.81221	0.66532	0.72843	0.82987	0.26977
0.54485		0.42569 0.24472 0.58502					
GWA38	GWA38	Coaching and developing others	1.00000	0.70056	0.64352	0.72475	0.50748
0.58532		0.33877 0.22081 0.56345					
GWA39	GWA39	Providing consultation and advice to others	0.70056	1.00000	0.67980	0.78084	0.39024
0.77358		0.62099 0.44545 0.82041					
GWA42	GWA42	Monitoring and controlling resources	0.64352	0.67980	1.00000	0.74896	0.17747
0.52159		0.41021 0.16310 0.52408					
KN1	KN1	Administration and Management	0.72475	0.78084	0.74896	1.00000	0.32755
0.73220		0.55320 0.26615 0.72244					
KN22	KN22	Therapy and Counseling	0.50748	0.39024	0.17747	0.32755	1.00000
0.50943		0.14418 0.21363 0.39019					
sk2	SK2	Active listening	0.58532	0.77358	0.52159	0.73220	0.50943
1.00000		0.51670 0.31561 0.80449					
sk5	SK5	Mathematics	0.33877	0.62099	0.41021	0.55320	0.14418
0.51670		1.00000 0.64907 0.70376					
sk6	SK6	Science	0.22081	0.44545	0.16310	0.26615	0.21363
0.31561		0.64907 1.00000 0.59055					
sk7	SK7	Critical thinking	0.56345	0.82041	0.52408	0.72244	0.39019
0.80449		0.70376 0.59055 1.00000					
sk8	SK8	Active learning	0.57071	0.81719	0.52462	0.70608	0.37874
0.77840		0.71191 0.61544 0.93913					
sk9	SK9	Learning strategies	0.71101	0.72270	0.50390	0.69678	0.53039
0.73966		0.55474 0.47628 0.81313					
sk10	SK10	Monitoring	0.64091	0.76382	0.56485	0.73584	0.44875
0.76322		0.58434 0.45499 0.84950					
sk11	SK11	Social Perceptiveness	0.64717	0.67862	0.53677	0.69249	0.62789
0.84031		0.31633 0.13670 0.66283					
sk12	SK12	Coordination	0.66189	0.68677	0.60357	0.78416	0.38778
0.75471		0.45693 0.29463 0.72757					
sk13	SK13	Persuasion	0.60317	0.76259	0.57485	0.75101	0.45571
0.81434		0.46506 0.24760 0.75763					
sk14	SK14	Negotiation	0.58911	0.71019	0.64475	0.78265	0.35315
0.74025		0.45622 0.16864 0.70143					
sk15	SK15	Instructing	0.80145	0.69134	0.51421	0.69755	0.51911
0.70524		0.44382 0.37400 0.69723					
sk17	SK17	Problem identification	0.54613	0.77837	0.52398	0.69683	0.40079
0.74378		0.68456 0.55832 0.87077					
sk18	SK18	Information gathering	0.52521	0.82596	0.50462	0.73185	0.35231
0.79813		0.72097 0.53063 0.89261					
sk19	SK19	Information organization	0.51886	0.77892	0.49671	0.69709	0.33251
0.76773		0.68703 0.49098 0.84032					
sk20	SK20	Synthesis/Reorganization	0.53518	0.79920	0.50973	0.70110	0.33533
0.77526		0.68102 0.51050 0.87918					
sk22	SK22	Idea evaluation	0.62030	0.82484	0.57338	0.76526	0.38535
0.76664		0.64901 0.51667 0.89875					
sk24	SK24	Solution appraisal	0.58601	0.80290	0.55999	0.75179	0.39521
0.75750		0.67195 0.52829 0.88646					
sk37	SK37	Visioning	0.58610	0.77020	0.55138	0.76449	0.32700
0.70895		0.63809 0.46952 0.85347					
sk38	SK38	Systems perceptions	0.54515	0.72876	0.53224	0.73663	0.31208
0.68725		0.62427 0.48873 0.83556					
sk39	SK39	Identification of downstream consequences	0.55953	0.78206	0.57630	0.77191	0.31016
0.70233		0.67285 0.51010 0.85532					
sk40	SK40	Identification of key causes	0.59061	0.78809	0.56862	0.77224	0.39624
0.75926		0.63994 0.47468 0.86788					
sk41	SK41	Judgment and decision making	0.55830	0.79772	0.54647	0.77449	0.39039
0.78091		0.65169 0.48092 0.89609					
sk42	SK42	Systems evaluation	0.57264	0.76520	0.57877	0.78552	0.29474
0.69893		0.67101 0.47677 0.82854					
sk43	SK43	Time management	0.69801	0.70375	0.65468	0.84965	0.37248
0.72878		0.49497 0.29679 0.74408					
sk46	SK46	Management of personnel resources	0.74325	0.64537	0.69746	0.83660	0.29025
0.59727		0.42792 0.25806 0.62557					

Correlations

				sk8	sk9	sk10	sk11	sk12
sk13	sk14	sk15	sk17					
GWA1	GWA1	Getting information needed to do job		0.87401	0.73625	0.77948	0.61946	0.67108
0.70107		0.65094 0.65289 0.80447						
GWA2	GWA2	Identifying objects, actions, and events		0.82431	0.65943	0.71407	0.53575	0.60964
0.63674		0.59420 0.58392 0.76574						
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.57437	0.48572	0.54515	0.31553	0.47384
0.39621		0.34922 0.47817 0.64573						
GWA9	GWA9	Analyzing data or information		0.86061	0.69160	0.74165	0.54470	0.59369
0.64539		0.58915 0.59215 0.79439						
GWA10	GWA10	Making decisions and solving problems		0.85323	0.70887	0.77635	0.60972	0.68982
0.70063		0.67524 0.63338 0.81653						
GWA11	GWA11	Thinking creatively		0.69405	0.60600	0.62445	0.47898	0.50591
0.51861		0.47965 0.51026 0.51466						
GWA12	GWA12	Updating and using job-relevant knowledge		0.81042	0.66413	0.69407	0.48356	0.54416
0.59371		0.51775 0.58224 0.77478						

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

				sk8	sk9	sk10	sk11	sk12
sk13	sk14	sk15	sk17					
GWA13	GWA13	Developing objectives and strategies		0.78542	0.72169	0.76035	0.65629	0.69695
0.73113		0.70900 0.65538 0.73320						
GWA15	GWA15	Organizing, planning, and prioritizing work		0.80617	0.73489	0.78106	0.67884	0.74329
0.74970		0.74349 0.66928 0.73899						
GWA26	GWA26	Interpreting the meaning of information for others		0.80699	0.68881	0.70995	0.64276	0.60832

0.67901	0.58491	0.64714	0.74072					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.61380	0.64535	0.67425	0.84466	0.71648	
0.76954	0.71771	0.67972	0.59939					
GWA30	GWA30	Assisting and caring for others	0.31141	0.41408	0.36019	0.65543	0.41798	
0.47024	0.35021	0.48089	0.35951					
GWA31	GWA31	Selling or influencing others	0.51447	0.47143	0.52091	0.67658	0.55637	
0.76816	0.74139	0.51791	0.52499					
GWA32	GWA32	Resolving conflicts and negotiating with others	0.50190	0.50554	0.56295	0.72615	0.65218	
0.72996	0.81119	0.53908	0.55931					
GWA34	GWA34	Coordinating the work and activities of others	0.59187	0.59903	0.63265	0.58981	0.79081	
0.62461	0.67043	0.67915	0.58830					
GWA35	GWA35	Developing and building teams	0.57864	0.62474	0.63530	0.59320	0.73166	
0.60158	0.64576	0.66437	0.57043					
GWA36	GWA36	Teaching others	0.62900	0.76124	0.65791	0.65783	0.61764	
0.62328	0.54386	0.85528	0.59109					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.58418	0.63853	0.63681	0.55688	0.73220	
0.57536	0.64405	0.69743	0.54757					
GWA38	GWA38	Coaching and developing others	0.57071	0.71101	0.64091	0.64717	0.66189	
0.60317	0.58911	0.80145	0.54613					
GWA39	GWA39	Providing consultation and advice to others	0.81719	0.72270	0.76382	0.67862	0.68677	
0.76259	0.71019	0.69134	0.77837					
GWA42	GWA42	Monitoring and controlling resources	0.52462	0.50390	0.56485	0.53677	0.60357	
0.57485	0.64475	0.51421	0.52398					
KN1	KN1	Administration and Management	0.70608	0.69678	0.73584	0.69249	0.78416	
0.75101	0.78265	0.69755	0.69683					
KN22	KN22	Therapy and Counseling	0.37874	0.53039	0.44875	0.62789	0.38778	
0.45571	0.35315	0.51911	0.40079					
sk2	SK2	Active listening	0.77840	0.73966	0.76322	0.84031	0.75471	
0.81434	0.74025	0.70524	0.74378					
sk5	SK5	Mathematics	0.71191	0.55474	0.58434	0.31633	0.45693	
0.46506	0.45622	0.44382	0.68456					
sk6	SK6	Science	0.61544	0.47628	0.45499	0.13670	0.29463	
0.24760	0.16864	0.37400	0.55832					
sk7	SK7	Critical thinking	0.93913	0.81313	0.84950	0.66283	0.72757	
0.75763	0.70143	0.69723	0.87077					
sk8	SK8	Active Learning	1.00000	0.84664	0.86144	0.63772	0.69527	
0.72701	0.65619	0.69702	0.82148					
sk9	SK9	Learning strategies	0.84664	1.00000	0.84513	0.71921	0.70587	
0.72478	0.63796	0.84283	0.72563					
sk10	SK10	Monitoring	0.86144	0.84513	1.00000	0.70615	0.73942	
0.73545	0.69045	0.72695	0.78176					
sk11	SK11	Social Perceptiveness	0.63772	0.71921	0.70615	1.00000	0.73105	
0.82708	0.75249	0.72269	0.61652					
sk12	SK12	Coordination	0.69527	0.70587	0.73942	0.73105	1.00000	
0.74537	0.75180	0.72221	0.66235					
sk13	SK13	Persuasion	0.72701	0.72478	0.73545	0.82708	0.74537	
1.00000	0.89346	0.71901	0.71543					
sk14	SK14	Negotiation	0.65619	0.63796	0.69045	0.75249	0.75180	
0.89346	1.00000	0.62991	0.66132					
sk15	SK15	Instructing	0.69702	0.84283	0.72695	0.72269	0.72221	
0.71901	0.62991	1.00000	0.63600					
sk17	SK17	Problem identification	0.82148	0.72563	0.78176	0.61652	0.66235	
0.71543	0.66132	0.63600	1.00000					
sk18	SK18	Information gathering	0.89158	0.73619	0.78067	0.62726	0.64798	
0.72907	0.66541	0.61370	0.83883					
sk19	SK19	Information organization	0.86797	0.74527	0.77379	0.59813	0.61640	
0.67294	0.60717	0.60641	0.76424					
sk20	SK20	Synthesis/Reorganization	0.90652	0.78651	0.82089	0.61639	0.66294	
0.69887	0.63692	0.63075	0.78206					
sk22	SK22	Idea evaluation	0.91960	0.83422	0.85901	0.67546	0.74615	
0.76357	0.70459	0.70313	0.82953					
sk24	SK24	Solution appraisal	0.89485	0.82914	0.87098	0.65886	0.72511	
0.74312	0.68418	0.69749	0.86864					
sk37	SK37	Visioning	0.86258	0.79499	0.82945	0.62263	0.76136	
0.73940	0.70782	0.68848	0.80326					
sk38	SK38	Systems perceptions	0.80482	0.72153	0.78662	0.58436	0.74267	
0.69829	0.68049	0.64317	0.82201					
sk39	SK39	Identification of downstream consequences	0.84198	0.75465	0.80929	0.59750	0.73940	
0.74371	0.73223	0.65777	0.82759					
sk40	SK40	Identification of key causes	0.85190	0.78906	0.83849	0.68366	0.74375	
0.77677	0.73927	0.68186	0.87178					
sk41	SK41	Judgment and decision making	0.86668	0.74555	0.82688	0.66462	0.75224	
0.76099	0.72660	0.64610	0.86347					
sk42	SK42	Systems evaluation	0.81281	0.73380	0.80944	0.60034	0.73281	
0.72404	0.71215	0.64991	0.82815					
sk43	SK43	Time management	0.74217	0.77563	0.78450	0.73984	0.82418	
0.75078	0.74756	0.75610	0.70539					
sk46	SK46	Management of personnel resources	0.62309	0.68887	0.68566	0.63391	0.80040	
0.64085	0.69308	0.73979	0.59367					

Correlations

sk37	sk38	sk39	sk40	sk18	sk19	sk20	sk22	sk24
GWA1	GWA1	Getting information needed to do job	0.89800	0.85385	0.85969	0.85152	0.82441	
0.79515	0.77322	0.79179	0.80916					
GWA2	GWA2	Identifying objects, actions, and events	0.83513	0.78923	0.78927	0.77829	0.75558	
0.72309	0.72695	0.75031	0.73595					
GWA3	GWA3	Monitoring processes, materials, or surroundings	0.54866	0.48014	0.50137	0.55060	0.55433	
0.54409	0.63642	0.59202	0.55457					
GWA9	GWA9	Analyzing data or information	0.89111	0.83881	0.84229	0.82418	0.81497	
0.75965	0.75506	0.78552	0.78457					
GWA10	GWA10	Making decisions and solving problems	0.85596	0.79985	0.82849	0.85740	0.82894	
0.79969	0.78571	0.81587	0.82021					
GWA11	GWA11	Thinking creatively	0.60964	0.63489	0.70057	0.72154	0.64202	
0.63659	0.50715	0.57047	0.59967					
GWA12	GWA12	Updating and using job-relevant knowledge	0.80790	0.76121	0.77589	0.75202	0.75882	
0.70901	0.69293	0.71705	0.71925					
GWA13	GWA13	Developing objectives and strategies	0.79400	0.75329	0.77871	0.83820	0.80641	
0.78434	0.73567	0.80119	0.80531					
GWA15	GWA15	Organizing, planning, and prioritizing work	0.78721	0.75512	0.80598	0.84603	0.79866	
0.78457	0.72402	0.77588	0.80221					
GWA26	GWA26	Interpreting the meaning of information for others	0.84593	0.80891	0.80345	0.76760	0.74940	
0.68992	0.66667	0.69489	0.71822					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.61616	0.60130	0.61740	0.64232	0.62405	
0.57630	0.54104	0.56922	0.62883					
GWA30	GWA30	Assisting and caring for others	0.31528	0.29983	0.28942	0.31115	0.30966	

0.22554	0.21995	0.22351	0.31419						
GWA31	GWA31	Selling or influencing others		0.53810	0.48704	0.50165	0.56439	0.53577	
0.51208	0.46455	0.53017	0.57083						
GWA32	GWA32	Resolving conflicts and negotiating with others		0.54197	0.49917	0.50918	0.56097	0.53906	
0.52338	0.52182	0.55443	0.59498						
GWA34	GWA34	Coordinating the work and activities of others		0.57569	0.54434	0.57385	0.64214	0.61633	
0.63863	0.63448	0.65043	0.63782						
GWA35	GWA35	Developing and building teams		0.54843	0.53160	0.56358	0.64329	0.61822	
0.63506	0.60929	0.62822	0.62750						
GWA36	GWA36	Teaching others		0.59103	0.59098	0.59631	0.65340	0.62633	
0.59712	0.56128	0.58378	0.61775						
GWA37	GWA37	Guiding, directing and motivating subordinates		0.54062	0.51909	0.55836	0.64227	0.60658	
0.63958	0.61654	0.63886	0.62038						
GWA38	GWA38	Coaching and developing others		0.52521	0.51886	0.53518	0.62030	0.58601	
0.58610	0.54515	0.55953	0.59061						
GWA39	GWA39	Providing consultation and advice to others		0.82596	0.77892	0.79920	0.82484	0.80290	
0.77020	0.72876	0.78206	0.78809						
GWA42	GWA42	Monitoring and controlling resources		0.50462	0.49671	0.50973	0.57338	0.55999	
0.55138	0.53224	0.57630	0.56862						
KN1	KN1	Administration and Management		0.73185	0.69709	0.70110	0.76526	0.75179	
0.76449	0.73663	0.77191	0.77224						
KN22	KN22	Therapy and Counseling		0.35231	0.33251	0.33533	0.38535	0.39521	
0.32700	0.31208	0.31016	0.39624						
sk2	SK2	Active listening		0.79813	0.76773	0.77526	0.76664	0.75750	
0.70895	0.68725	0.70233	0.75926						
sk5	SK5	Mathematics		0.72097	0.68703	0.68102	0.64901	0.67195	
0.63809	0.62427	0.67285	0.63994						
sk6	SK6	Science		0.53063	0.49098	0.51050	0.51667	0.52829	
0.46952	0.48873	0.51010	0.47468						
sk7	SK7	Critical thinking		0.89261	0.84032	0.87918	0.89875	0.88646	
0.85347	0.83556	0.85532	0.86788						
sk8	SK8	Active learning		0.89158	0.86797	0.90652	0.91960	0.89485	
0.86258	0.80482	0.84198	0.85190						
sk9	SK9	Learning strategies		0.73619	0.74527	0.78651	0.83422	0.82914	
0.79499	0.72153	0.75465	0.78906						
sk10	SK10	Monitoring		0.78067	0.77379	0.82089	0.85901	0.87098	
0.82945	0.78662	0.80929	0.83849						
sk11	SK11	Social Perceptiveness		0.62726	0.59813	0.61639	0.67546	0.65886	
0.62263	0.58436	0.59750	0.68366						
sk12	SK12	Coordination		0.64798	0.61640	0.66294	0.74615	0.72511	
0.76136	0.74267	0.73940	0.74375						
sk13	SK13	Persuasion		0.72907	0.67294	0.69887	0.76357	0.74312	
0.73940	0.69829	0.74371	0.77677						
sk14	SK14	Negotiation		0.66541	0.60717	0.63692	0.70459	0.68418	
0.70782	0.68049	0.73223	0.73927						
sk15	SK15	Instructing		0.61370	0.60641	0.63075	0.70313	0.69749	
0.68848	0.64317	0.65777	0.68186						
sk17	SK17	Problem identification		0.83883	0.76424	0.78206	0.82953	0.86864	
0.80326	0.82201	0.82759	0.87178						
sk18	SK18	Information gathering		1.00000	0.91977	0.89426	0.86682	0.85543	
0.80711	0.79383	0.82794	0.83021						
sk19	SK19	Information organization		0.91977	1.00000	0.92155	0.84027	0.82606	
0.77673	0.73165	0.76496	0.77882						
sk20	SK20	Synthesis/Reorganization		0.89426	0.92155	1.00000	0.89238	0.86547	
0.82864	0.76409	0.80198	0.82273						
sk22	SK22	Idea evaluation		0.86682	0.84027	0.89238	1.00000	0.92674	
0.90005	0.83640	0.87518	0.90132						
sk24	SK24	Solution appraisal		0.85543	0.82606	0.86547	0.92674	1.00000	
0.89730	0.84563	0.87379	0.91885						
sk37	SK37	Visioning		0.80711	0.77673	0.82864	0.90005	0.89730	
1.00000	0.88800	0.89723	0.89771						
sk38	SK38	Systems perceptions		0.79383	0.73165	0.76409	0.83640	0.84563	
0.88800	1.00000	0.92306	0.87623						
sk39	SK39	Identification of downstream consequences		0.82794	0.76496	0.80198	0.87518	0.87379	
0.89723	0.92306	1.00000	0.90504						
sk40	SK40	Identification of key causes		0.83021	0.77882	0.82273	0.90132	0.91885	
0.89771	0.87623	0.90504	1.00000						
sk41	SK41	Judgment and decision making		0.86498	0.80329	0.83273	0.89463	0.89530	
0.87684	0.87325	0.89200	0.91399						
sk42	SK42	Systems evaluation		0.80909	0.74690	0.77290	0.85235	0.86235	
0.88097	0.90231	0.92115	0.88904						
sk43	SK43	Time management		0.70611	0.69236	0.72228	0.80073	0.79836	
0.79918	0.75412	0.76987	0.80743						
sk46	SK46	Management of personnel resources		0.57838	0.55933	0.58776	0.69143	0.67345	
0.70109	0.68140	0.70180	0.69041						

Correlations

			sk41	sk42	sk43
sk46					
	GWA1	GWA1 Getting information needed to do job	0.83499	0.78260	0.69426
0.60620	GWA2	GWA2 Identifying objects, actions, and events	0.78200	0.73841	0.61297
0.56001	GWA3	GWA3 Monitoring processes, materials, or surroundings	0.57958	0.59438	0.41344
0.42054	GWA9	GWA9 Analyzing data or information	0.81768	0.77887	0.62670
0.54971	GWA10	GWA10 Making decisions and solving problems	0.85817	0.81001	0.69380
0.63808	GWA11	GWA11 Thinking creatively	0.57962	0.55893	0.55721
0.50773	GWA12	GWA12 Updating and using job-relevant knowledge	0.74511	0.70999	0.56466
0.48655	GWA13	GWA13 Developing objectives and strategies	0.80008	0.78016	0.74072
0.68940	GWA15	GWA15 Organizing, planning, and prioritizing work	0.78933	0.75732	0.76689
0.71146	GWA26	GWA26 Interpreting the meaning of information for others	0.75145	0.68394	0.62011
0.52455	GWA29	GWA29 Establishing and maintaining interpersonal relationships	0.62695	0.56471	0.70012
0.64084					

The FACTOR Procedure

Correlations

		sk41	sk42	sk43
sk46				
0.28234	GWA30 GWA30 Assisting and caring for others	0.34488	0.20592	0.36192
0.49825	GWA31 GWA31 Selling or influencing others	0.55512	0.50877	0.55458
0.64407	GWA32 GWA32 Resolving conflicts and negotiating with others	0.59164	0.55353	0.65505
0.85299	GWA34 GWA34 Coordinating the work and activities of others	0.63503	0.66610	0.77556
0.82078	GWA35 GWA35 Developing and building teams	0.61721	0.64735	0.74178
0.64876	GWA36 GWA36 Teaching others	0.58981	0.57671	0.65190
0.89055	GWA37 GWA37 Guiding, directing and motivating subordinates	0.60485	0.66234	0.79240
0.74325	GWA38 GWA38 Coaching and developing others	0.55830	0.57264	0.69801
0.64537	GWA39 GWA39 Providing consultation and advice to others	0.79772	0.76520	0.70375
0.69746	GWA42 GWA42 Monitoring and controlling resources	0.54647	0.57877	0.65468
0.83660	KN1 KN1 Administration and Management	0.77449	0.78552	0.84965
0.29025	KN22 KN22 Therapy and Counseling	0.39039	0.29474	0.37248
0.59727	sk2 SK2 Active listening	0.78091	0.69893	0.72878
0.42792	sk5 SK5 Mathematics	0.65169	0.67101	0.49497
0.25806	sk6 SK6 Science	0.48092	0.47677	0.29679
0.62557	sk7 SK7 Critical thinking	0.89609	0.82854	0.74408
0.62309	sk8 SK8 Active learning	0.86668	0.81281	0.74217
0.68887	sk9 SK9 Learning strategies	0.74555	0.73380	0.77563
0.68566	sk10 SK10 Monitoring	0.82688	0.80944	0.78450
0.63391	sk11 SK11 Social Perceptiveness	0.66462	0.60034	0.73984
0.80040	sk12 SK12 Coordination	0.75224	0.73281	0.82418
0.64085	sk13 SK13 Persuasion	0.76099	0.72404	0.75078
0.69308	sk14 SK14 Negotiation	0.72660	0.71215	0.74756
0.73979	sk15 SK15 Instructing	0.64610	0.64991	0.75610
0.59367	sk17 SK17 Problem identification	0.86347	0.82815	0.70539
0.57838	sk18 SK18 Information gathering	0.86498	0.80909	0.70611
0.55933	sk19 SK19 Information organization	0.80329	0.74690	0.69236
0.58776	sk20 SK20 Synthesis/Reorganization	0.83273	0.77290	0.72228
0.69143	sk22 SK22 Idea evaluation	0.89463	0.85235	0.80073
0.67345	sk24 SK24 Solution appraisal	0.89530	0.86235	0.79836
0.70109	sk37 SK37 Visioning	0.87684	0.88097	0.79918
0.68140	sk38 SK38 Systems perceptions	0.87325	0.90231	0.75412
0.70180	sk39 SK39 Identification of downstream consequences	0.89200	0.92115	0.76987
0.69041	sk40 SK40 Identification of key causes	0.91399	0.88904	0.80743
0.66456	sk41 SK41 Judgment and decision making	1.00000	0.87633	0.78393
0.73077	sk42 SK42 Systems evaluation	0.87633	1.00000	0.77374
0.86621	sk43 SK43 Time management	0.78393	0.77374	1.00000
1.00000	sk46 SK46 Management of personnel resources	0.66456	0.73077	0.86621

SAS OUTPUT PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-LEVEL SCALE

The FACTOR Procedure
Initial Factor Method: Principal Components
Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 49 Average = 1

Eigenvalue Difference Proportion Cumulative

Rotated Factor Pattern

Factor4	Factor5		Factor1	Factor2	Factor3
	GWA1	GWA1 Getting information needed to do job	0.75586	0.36282	0.27610
0.30706	0.18410				
	GWA2	GWA2 Identifying objects, actions, and events	0.79679	0.26033	0.27051
0.26481	0.13885				
	GWA3	GWA3 Monitoring processes, materials, or surroundings	0.70065	0.12020	0.30882
-0.13491	0.19249				
	GWA9	GWA9 Analyzing data or information	0.82365	0.30792	0.24192
0.27522	0.12267				
	GWA10	GWA10 Making decisions and solving problems	0.74578	0.34469	0.34563
0.30895	0.14560				
	GWA11	GWA11 Thinking creatively	0.59172	0.13373	0.37620
0.31653	0.07937				
	GWA12	GWA12 Updating and using job-relevant knowledge	0.84366	0.21426	0.22462
0.17510	0.19396				
	GWA13	GWA13 Developing objectives and strategies	0.57668	0.33351	0.48552
0.39997	0.14696				
	GWA15	GWA15 Organizing, planning, and prioritizing work	0.56272	0.35897	0.47713
0.41700	0.13895				
	GWA26	GWA26 Interpreting the meaning of information for others	0.72772	0.22404	0.23860
0.38431	0.28929				
	GWA29	GWA29 Establishing and maintaining interpersonal relationships	0.25509	0.24384	0.43246
0.58842	0.47218				
	GWA30	GWA30 Assisting and caring for others	0.10649	0.00093	0.14013
0.29389	0.82736				
	GWA31	GWA31 Selling or influencing others	0.22350	0.19072	0.33990
0.73647	0.22445				
	GWA32	GWA32 Resolving conflicts and negotiating with others	0.13211	0.26223	0.50856
0.66954	0.20916				
	GWA34	GWA34 Coordinating the work and activities of others	0.30333	0.24617	0.80786
0.25466	0.12083				
	GWA35	GWA35 Developing and building teams	0.27192	0.21869	0.82069
0.26360	0.15586				
	GWA36	GWA36 Teaching others	0.38837	0.17872	0.58055
0.11106	0.53134				
	GWA37	GWA37 Guiding, directing and motivating subordinates	0.25029	0.28510	0.86190
0.14747	0.09812				
	GWA38	GWA38 Coaching and developing others	0.25862	0.16856	0.75017
0.15697	0.43783				
	GWA39	GWA39 Providing consultation and advice to others	0.62969	0.30336	0.39781
0.43913	0.22805				
	GWA42	GWA42 Monitoring and controlling resources	0.26795	0.17048	0.66484
0.47200	-0.00503				
	KN1	KN1 Administration and Management	0.33151	0.47725	0.61970
0.35435	0.12255				
	KN22	KN22 Therapy and Counseling	0.14305	0.18216	0.09441
0.03473	0.84778				
	sk2	SK2 Active listening	0.40688	0.50324	0.19714
0.45257	0.44364				
	sk5	SK5 Mathematics	0.72352	0.35255	0.14995
0.06000	-0.06865				
	sk6	SK6 Science	0.78632	0.15957	0.05287
-0.31676	0.10541				
	sk7	SK7 Critical thinking	0.66151	0.57825	0.21856
0.21576	0.22089				
	sk8	SK8 Active learning	0.68995	0.55437	0.22715
0.18105	0.20477				
	sk9	SK9 Learning strategies	0.44726	0.55763	0.37385
0.05102	0.43371				
	sk10	SK10 Monitoring	0.48849	0.60271	0.34066
0.16961	0.28371				
	sk11	SK11 Social Perceptiveness	0.14580	0.47754	0.29459
0.47027	0.58400				
	sk12	SK12 Coordination	0.24354	0.56902	0.53834
0.23372	0.25566				
	sk13	SK13 Persuasion	0.27444	0.57618	0.27736
0.51245	0.33846				
	sk14	SK14 Negotiation	0.18769	0.57362	0.38581
0.54594	0.16335				
	sk15	SK15 Instructing	0.31155	0.41810	0.53541
0.04657	0.51619				
	sk17	SK17 Problem identification	0.61342	0.55660	0.22332
0.18519	0.21380				
	sk18	SK18 Information gathering	0.69764	0.51664	0.15842
0.30737	0.15846				
	sk19	SK19 Information organization	0.66674	0.48892	0.15871
0.28292	0.16495				
	sk20	SK20 Synthesis/Reorganization	0.66436	0.53069	0.19313
0.26598	0.15582				
	sk22	SK22 Idea evaluation	0.59309	0.61091	0.31479
0.22256	0.17599				
	sk24	SK24 Solution appraisal	0.58029	0.64974	0.28059
0.17878	0.18389				
	sk37	SK37 Visioning	0.51188	0.69374	0.34603
0.14671	0.09225				
	sk38	SK38 Systems perceptions	0.51237	0.68473	0.33664
0.09351	0.07364				
	sk39	SK39 Identification of downstream consequences	0.53799	0.67791	0.34293
0.16420	0.05371				
	sk40	SK40 Identification of key causes	0.51118	0.68627	0.30296
0.21981	0.16592				
	sk41	SK41 Judgment and decision making	0.55950	0.65094	0.26245
0.24719	0.16235				
	sk42	SK42 Systems evaluation	0.51804	0.66596	0.38044
0.14867	0.03767				
	sk43	SK43 Time management	0.25680	0.62802	0.56731
0.21496	0.20700				
	sk46	SK46 Management of personnel resources	0.18904	0.48152	0.77312
0.12495	0.11832				

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
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13.504718 9.951747 8.877206 4.994621 4.307034

Final Communality Estimates: Total = 41.635327

	GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29										
	0.90736874 0.88074574	0.86522801 0.80187414	0.65598205 0.79462854	0.92252891	0.91110201	0.61603185	0.87639931	0.86109690	0.86636431	0.86808168
sk2										
	0.83688492 0.85928640	0.88468673 0.67856727	0.88908077 0.75801207	0.81446616	0.91818051	0.87438723	0.89162708	0.76568429	0.86227812	0.78249035
sk18										
	0.91508514 0.89829748	0.90967461 0.81601966	0.84146709 0.85533797	0.82719246	0.89829677	0.79290410	0.86138494	0.83785116	0.82715136	0.81596353
sk43										
	0.87124696	0.90456149 0.89491897	0.90340848	0.89306468	0.85887400	0.89644111	0.89989111	0.89310803	0.88012161	

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

The FACTOR Procedure

Correlations

GWA16	GWA17	GWA18	GWA19	GWA4	GWA5	GWA14
GWA4	GWA4	Inspecting equipment, structures or materials		1.00000	0.35670	0.08426
0.19333	0.23335	0.49726	0.12679			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.35670	1.00000	0.63524
0.22242	-0.31040	-0.08991	0.58493			
GWA14	GWA14	Scheduling work and activities		0.08426	0.63524	1.00000
0.27924	-0.50112	-0.34039	0.49333			
GWA16	GWA16	Performing general physical activities		0.19333	-0.22242	-0.27924
1.00000	0.63645	0.38669	-0.50086			
GWA17	GWA17	Handling and moving objects		0.23335	-0.31040	-0.50112
0.63645	1.00000	0.59053	-0.44644			
GWA18	GWA18	Controlling machines and processes		0.49726	-0.08991	-0.34039
0.38669	0.59053	1.00000	-0.25716			
GWA19	GWA19	Interacting with computers		0.12679	0.58493	0.49333
0.50086	-0.44644	-0.25716	1.00000			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		0.14714	-0.01290	-0.08315
0.40891	0.18007	0.23168	-0.23650			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.54646	0.50997	0.23390
0.05716	0.03685	0.19201	0.38007			
GWA22	GWA22	Implementing ideas, programs, systems or products		0.33435	0.75093	0.61316
0.23494	-0.26324	-0.08178	0.59615			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.54901	-0.10584	-0.27929
0.45726	0.49741	0.64205	-0.28659			
GWA24	GWA24	Repairing and maintaining electronic equipment		0.54551	0.13230	-0.04261
0.10703	0.18651	0.32802	0.18499			
GWA25	GWA25	Documenting/recording information		0.17388	0.65642	0.60006
0.45475	-0.52868	-0.27274	0.74146			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		0.14026	0.70817	0.78059
0.37285	-0.58703	-0.31987	0.69207			
GWA28	GWA28	Communicating with persons outside the organizations		-0.08009	0.57127	0.70494
0.39578	-0.61865	-0.51662	0.57863			
GWA40	GWA40	Performing administrative activities		0.05590	0.58417	0.78360
0.42423	-0.56422	-0.38166	0.60295			
GWA41	GWA41	Staffing organizational units		0.03828	0.45157	0.72921
0.21142	-0.36541	-0.24896	0.30970			
KN2	KN2	Clerical		-0.14353	0.23258	0.41789
0.40739	-0.41381	-0.38953	0.52252			
KN3	KN3	Economics and Accounting		-0.10653	0.48828	0.59439
0.36529	-0.49734	-0.44313	0.43989			
KN4	KN4	Sales and Marketing		-0.11210	0.29481	0.41955
0.25330	-0.35750	-0.35630	0.24235			
KN5	KN5	Customer and Personal Service		-0.17292	0.15452	0.39259
0.12473	-0.26822	-0.40905	0.21253			
KN6	KN6	Personnel and Human Resources		0.02354	0.44908	0.70547
0.23893	-0.41639	-0.32728	0.34386			
KN7	KN7	Production and Processing		0.39855	0.07677	-0.15085
0.05717	0.32264	0.43281	-0.08096			
KN8	KN8	Food Production		0.01958	0.13273	0.12619
0.03142	-0.05674	-0.04342	0.02500			
KN9	KN9	Computers and Electronics		0.23922	0.42323	0.31056
0.38943	-0.31559	-0.13996	0.72769			
KN10	KN10	Engineering and Technology		0.64531	0.26850	-0.05713
0.21106	0.24684	0.48680	0.10763			
KN11	KN11	Design		0.45840	0.30068	-0.00742
0.04237	0.16007	0.20987	0.16911			
KN12	KN12	Building and Construction		0.33014	0.06058	-0.12829
0.40678	0.32292	0.28156	-0.21203			
KN13	KN13	Mechanical		0.59317	-0.06577	-0.31645
0.50006	0.55851	0.65968	-0.30673			
KN14	KN14	Mathematics		0.22566	0.65622	0.46247
0.34807	-0.35848	-0.15602	0.67045			
KN16	KN16	Chemistry		0.35073	0.25782	0.07585
0.08133	0.13793	0.32429	0.10679			
KN17	KN17	Biology		0.08634	0.29199	0.24409
0.00024	-0.09445	-0.01468	0.21293			
KN20	KN20	Geography		-0.00753	0.35200	0.22186
0.04250	-0.25307	-0.22631	0.21480			
KN21	KN21	Medicine and Dentistry		0.04245	0.14634	0.18456
0.05390	-0.01694	-0.02789	0.10966			

KN23	KN23	Education and Training		0.01117	0.46876	0.62688	-
0.20998		-0.35909	-0.31659	0.43273			
KN29	KN29	Public Safety and Security		0.35601	0.28280	0.17272	
0.22532		-0.00549	0.07425	0.09420			
KN31	KN31	Telecommunications		0.14568	0.26729	0.28204	-
0.14205		-0.26083	-0.17780	0.35981			
KN32	KN32	Communications and Media		-0.06126	0.43832	0.56045	-
0.42736		-0.50750	-0.37146	0.52626			
KN33	KN33	Transportation		0.11621	0.15053	0.09249	
0.15501		-0.02488	-0.03224	-0.04783			
sk3	SK3	Writing		0.06005	0.63233	0.66763	-
0.51605		-0.62610	-0.42016	0.71512			
sk4	SK4	Speaking		-0.01659	0.58938	0.72567	-
0.40478		-0.63376	-0.46749	0.60529			
sk27	SK27	Equipment selection		0.58054	0.45121	0.18453	
0.11705		0.22932	0.39931	0.24619			
sk28	SK28	Installation		0.55863	0.00156	-0.19561	
0.36083		0.43477	0.46111	-0.08718			
sk29	SK29	Programming		0.19471	0.42868	0.29736	-
0.32248		-0.27017	-0.13992	0.71892			
sk30	SK30	Testing		0.71363	0.32876	0.03670	
0.03354		0.14786	0.41405	0.29033			
sk31	SK31	Operation monitoring		0.62473	0.02762	-0.20202	
0.19196		0.35329	0.69757	-0.01969			
sk32	SK32	Operation and control		0.47222	-0.05275	-0.22734	
0.25020		0.43702	0.71124	-0.10614			
sk33	SK33	Product inspection		0.58968	0.32796	0.13024	-
0.01982		0.16622	0.28839	0.18446			
sk34	SK34	Equipment maintenance		0.59785	-0.11504	-0.29136	
0.44143		0.51393	0.62612	-0.25757			
sk35	SK35	Troubleshooting		0.70430	0.11292	-0.08266	
0.28226		0.32093	0.48158	0.02886			
sk36	SK36	Repairing		0.53128	-0.14039	-0.30203	
0.44875		0.49820	0.53619	-0.28267			
sk44	SK44	Management of financial resources		-0.01986	0.55757	0.70865	-
0.34369		-0.48968	-0.42225	0.42580			
sk45	SK45	Management of material resources		0.24986	0.59076	0.69285	-
0.16362		-0.30096	-0.19891	0.39851			

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GWA23	GWA24	GWA25	GWA27	GWA20	GWA21	GWA22
GWA4	GWA4	Inspecting equipment, structures or materials		0.14714	0.54646	0.33435
0.54901		0.54551	0.17388	0.14026		
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		-0.01290	0.50997	0.75093
0.10584		0.13230	0.65642	0.70817		
GWA14	GWA14	Scheduling work and activities		-0.08315	0.23390	0.61316
0.27929		-0.04261	0.60006	0.78059		
GWA16	GWA16	Performing general physical activities		0.40891	-0.05716	-0.23494
0.45726		0.10703	-0.45475	-0.37285		
GWA17	GWA17	Handling and moving objects		0.18007	0.03685	-0.26324
0.49741		0.18651	-0.52868	-0.58703		
GWA18	GWA18	Controlling machines and processes		0.23168	0.19201	-0.08178
0.64205		0.32802	-0.27274	-0.31987		
GWA19	GWA19	Interacting with computers		-0.23650	0.38007	0.59615
0.28659		0.18499	0.74146	0.69207		
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		1.00000	-0.06319	-0.18085
0.34336		0.07503	-0.16796	-0.09052		
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		-0.06319	1.00000	0.53327
0.15164		0.30936	0.27898	0.31482		
GWA22	GWA22	Implementing ideas, programs, systems or products		-0.18085	0.53327	1.00000
0.08638		0.20231	0.62571	0.66287		
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.34336	0.15164	-0.08638
1.00000		0.48056	-0.26208	-0.30498		
GWA24	GWA24	Repairing and maintaining electronic equipment		0.07503	0.30936	0.20231
0.48056		1.00000	0.10139	0.03115		
GWA25	GWA25	Documenting/recording information		-0.16796	0.27898	0.62571
0.26208		0.10139	1.00000	0.79582		
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.09052	0.31482	0.66287
0.30498		0.03115	0.79582	1.00000		
GWA28	GWA28	Communicating with persons outside the organizations		-0.09935	0.15196	0.53786
0.43514		-0.07904	0.68690	0.75837		
GWA40	GWA40	Performing administrative activities		-0.14254	0.12332	0.52846
0.29901		-0.00949	0.77123	0.78189		
GWA41	GWA41	Staffing organizational units		-0.06187	0.08472	0.42125
0.19033		-0.07712	0.37658	0.56282		
KN2	KN2	Clerical		-0.16022	-0.07607	0.19413
0.30230		-0.03102	0.62298	0.48435		
KN3	KN3	Economics and Accounting		-0.07966	0.06976	0.35042
0.30921		-0.12359	0.49677	0.57031		
KN4	KN4	Sales and Marketing		-0.01438	0.07073	0.20313
0.24498		-0.08630	0.23148	0.33834		
KN5	KN5	Customer and Personal Service		-0.04604	-0.08537	0.12722
0.28188		-0.02791	0.24155	0.27965		
KN6	KN6	Personnel and Human Resources		-0.04539	0.06155	0.40505
0.24178		-0.08278	0.43728	0.60901		
KN7	KN7	Production and Processing		-0.08795	0.34722	0.09321
0.29267		0.10284	-0.10534	-0.14269		
KN8	KN8	Food Production		0.06190	0.02099	0.08806
0.06132		-0.10456	0.11546	0.08744		
KN9	KN9	Computers and Electronics		-0.10809	0.36474	0.43310
0.07042		0.54860	0.54941	0.49698		
KN10	KN10	Engineering and Technology		0.17982	0.62428	0.24664
0.52852		0.47325	0.03557	0.05088		
KN11	KN11	Design		-0.05115	0.76488	0.31619
0.22614		0.32938	0.02375	0.05096		
KN12	KN12	Building and Construction		0.15909	0.36731	0.08348
0.34668		0.12985	-0.23952	-0.14982		
KN13	KN13	Mechanical		0.34786	0.26451	-0.05903
0.83264		0.46278	-0.31713	-0.33774		

KN14	KN14 Mathematics			-0.12708	0.45012	0.56626	-
0.14241	0.11548	0.65161	0.63278				
KN16	KN16 Chemistry			-0.01651	0.21495	0.26562	-
0.15156	0.10387	0.21834	0.13751				
KN17	KN17 Biology			-0.05166	0.07467	0.33025	-
0.16485	-0.05430	0.35895	0.29939				
KN20	KN20 Geography			0.36470	0.08448	0.14493	-
0.11099	-0.03153	0.28553	0.29053				
KN21	KN21 Medicine and Dentistry			-0.02106	-0.02874	0.21884	-
0.12090	0.01320	0.24866	0.21332				
KN23	KN23 Education and Training			-0.03282	0.17779	0.51156	-
0.24688	0.00020	0.49317	0.61527				
KN29	KN29 Public Safety and Security			0.37431	0.13897	0.16879	-
0.16267	0.16311	0.23388	0.25402				
KN31	KN31 Telecommunications			0.11862	0.13425	0.19500	-
0.07943	0.40640	0.31824	0.35729				
KN32	KN32 Communications and Media			-0.10159	0.16977	0.44162	-
0.33939	-0.02122	0.52065	0.63325				
KN33	KN33 Transportation			0.63684	-0.02797	-0.05700	-
0.10644	0.01710	0.06816	0.10389				
sk3	SK3 Writing			-0.17619	0.26677	0.63446	-
0.36984	-0.01259	0.85529	0.82572				
sk4	SK4 Speaking			-0.09111	0.18906	0.57372	-
0.39283	-0.03732	0.73467	0.82910				
sk27	SK27 Equipment selection			0.00082	0.62779	0.49633	-
0.34115	0.35107	0.18901	0.21164				
sk28	SK28 Installation			0.07775	0.35732	0.11238	-
0.64835	0.59766	-0.19569	-0.20840				
sk29	SK29 Programming			-0.17802	0.45095	0.49592	-
0.17324	0.15625	0.49164	0.47085				
sk30	SK30 Testing			-0.01020	0.51793	0.41470	-
0.45948	0.57531	0.25409	0.15876				
sk31	SK31 Operation monitoring			0.25262	0.24336	0.03229	-
0.62329	0.46582	-0.02429	-0.12311				
sk32	SK32 Operation and control			0.32635	0.14673	-0.04646	-
0.57111	0.34801	-0.13685	-0.19807				
sk33	SK33 Product inspection			-0.14368	0.51132	0.39754	-
0.31823	0.31645	0.18252	0.12769				
sk34	SK34 Equipment maintenance			0.28153	0.15403	-0.07018	-
0.83102	0.53150	-0.25984	-0.32492				
sk35	SK35 Troubleshooting			0.23394	0.39958	0.14727	-
0.68816	0.63639	-0.02788	-0.06581				
sk36	SK36 Repairing			0.25470	0.15026	-0.07123	-
0.81880	0.55772	-0.30204	-0.35376				
sk44	SK44 Management of financial resources			-0.10280	0.17273	0.48138	-
0.32157	-0.09521	0.50970	0.62138				
sk45	SK45 Management of material resources			-0.02295	0.39113	0.55039	-
0.12267	0.04630	0.45352	0.57989				

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				GWA28	GWA40	GWA41	
KN2	KN3	KN4	KN5				
GWA4	GWA4 Inspecting equipment, structures or materials			-0.08009	0.05590	0.03828	-
0.14353	-0.10653	-0.11210	-0.17292				
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.57127	0.58417	0.45157	-
0.23258	0.48828	0.29481	0.15452				
GWA14	GWA14 Scheduling work and activities			0.70494	0.78360	0.72921	-
0.41789	0.59439	0.41955	0.39259				
GWA16	GWA16 Performing general physical activities			-0.39578	-0.42423	-0.21142	-
0.40739	-0.36529	-0.25330	-0.12473				
GWA17	GWA17 Handling and moving objects			-0.61865	-0.56422	-0.36541	-
0.41381	-0.49734	-0.35750	-0.26822				
GWA18	GWA18 Controlling machines and processes			-0.51662	-0.38166	-0.24896	-
0.38953	-0.44313	-0.35630	-0.40905				
GWA19	GWA19 Interacting with computers			0.57863	0.60295	0.30970	-
0.52252	0.43989	0.24235	0.21253				
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			-0.09935	-0.14254	-0.06187	-
0.16022	-0.07966	-0.01438	-0.04604				
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.15196	0.12332	0.08472	-
0.07607	0.06976	0.07073	-0.08537				
GWA22	GWA22 Implementing ideas, programs, systems or products			0.53786	0.52846	0.42125	-
0.19413	0.35042	0.20313	0.12722				
GWA23	GWA23 Repairing and maintaining mechanical equipment			-0.43514	-0.29901	-0.19033	-
0.30230	-0.30921	-0.24498	-0.28188				
GWA24	GWA24 Repairing and maintaining electronic equipment			-0.07904	-0.00949	-0.07712	-
0.03102	-0.12359	-0.08630	-0.02791				
GWA25	GWA25 Documenting/recording information			0.68690	0.77123	0.37658	-
0.62298	0.49677	0.23148	0.24155				
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.75837	0.78189	0.56282	-
0.48435	0.57031	0.33834	0.27965				
GWA28	GWA28 Communicating with persons outside the organizations			1.00000	0.72215	0.44290	-
0.50337	0.59613	0.53510	0.53482				
GWA40	GWA40 Performing administrative activities			0.72215	1.00000	0.67059	-
0.63064	0.69788	0.43320	0.39227				
GWA41	GWA41 Staffing organizational units			0.44290	0.67059	1.00000	-
0.25264	0.51454	0.39217	0.28511				
KN2	KN2 Clerical			0.50337	0.63064	0.25264	-
1.00000	0.50974	0.27652	0.40661				
KN3	KN3 Economics and Accounting			0.59613	0.69788	0.51454	-
0.50974	1.00000	0.58714	0.39103				
KN4	KN4 Sales and Marketing			0.53510	0.43320	0.39217	-
0.27652	0.58714	1.00000	0.51333				
KN5	KN5 Customer and Personal Service			0.53482	0.39227	0.28511	-
0.40661	0.39103	0.51333	1.00000				
KN6	KN6 Personnel and Human Resources			0.48784	0.64645	0.79663	-
0.37968	0.60282	0.40711	0.38662				
KN7	KN7 Production and Processing			-0.35297	-0.15855	-0.04157	-
0.20883	-0.05361	-0.02929	-0.29876				
KN8	KN8 Food Production			0.12373	0.12119	0.14655	-
0.02094	0.12628	0.14450	0.02976				
KN9	KN9 Computers and Electronics			0.39995	0.40316	0.13554	-
0.45875	0.32770	0.18478	0.15592				
KN10	KN10 Engineering and Technology			-0.18279	-0.15448	-0.12224	-
0.21975	-0.10223	-0.14560	-0.28644				
KN11	KN11 Design			-0.06376	-0.10085	-0.07065	-
0.15793	0.00246	0.02304	-0.12431				

KN12	KN12 Building and Construction			-0.23360	-0.25321	-0.08982	-
0.30134	-0.07246	-0.10250	-0.23578				
KN13	KN13 Mechanical			-0.49928	-0.38346	-0.23502	-
0.37165	-0.30470	-0.25568	-0.32994				
KN14	KN14 Mathematics			0.48157	0.52371	0.28662	
0.39728	0.58269	0.27030	0.11596				
KN16	KN16 Chemistry			0.07305	0.02854	-0.02901	-
0.03348	-0.11278	-0.11660	-0.05498				
KN17	KN17 Biology			0.35527	0.19405	0.08609	
0.10671	0.03044	0.01566	0.16237				
KN20	KN20 Geography			0.33699	0.21273	0.12748	
0.22522	0.28527	0.26217	0.20225				
KN21	KN21 Medicine and Dentistry			0.29529	0.16502	0.04636	
0.15370	-0.00871	0.00794	0.35429				
KN23	KN23 Education and Training			0.59966	0.50733	0.45662	
0.35268	0.41488	0.34364	0.41192				
KN29	KN29 Public Safety and Security			0.18047	0.16263	0.09995	
0.11248	0.13782	0.05647	0.16442				
KN31	KN31 Telecommunications			0.35382	0.28421	0.12609	
0.31902	0.25354	0.20407	0.24966				
KN32	KN32 Communications and Media			0.63942	0.52065	0.38954	
0.45174	0.43726	0.43238	0.28563				
KN33	KN33 Transportation			0.09561	0.05822	0.02671	
0.10733	0.14333	0.14087	0.14757				
sk3	SK3 Writing			0.77832	0.74087	0.44486	
0.57313	0.53508	0.32304	0.27122				
sk4	SK4 Speaking			0.84278	0.71758	0.47593	
0.54345	0.57610	0.43358	0.45746				
sk27	SK27 Equipment selection			-0.00466	0.04913	0.10557	-
0.12480	-0.03605	-0.07957	-0.18198				
sk28	SK28 Installation			-0.34740	-0.24416	-0.14117	-
0.30236	-0.25536	-0.17732	-0.22956				
sk29	SK29 Programming			0.34982	0.32003	0.13403	
0.22477	0.21352	0.09600	0.02513				
sk30	SK30 Testing			-0.03878	0.02354	-0.03584	-
0.09589	-0.10412	-0.14817	-0.20923				
sk31	SK31 Operation monitoring			-0.37725	-0.17945	-0.15370	-
0.19944	-0.32917	-0.31673	-0.33304				
sk32	SK32 Operation and control			-0.42171	-0.22519	-0.16578	-
0.22056	-0.34708	-0.31228	-0.31171				
sk33	SK33 Product inspection			-0.05731	0.10586	0.10800	-
0.03891	0.05839	-0.01854	-0.20639				
sk34	SK34 Equipment maintenance			-0.48773	-0.30071	-0.18239	-
0.32158	-0.37548	-0.29977	-0.29650				
sk35	SK35 Troubleshooting			-0.25185	-0.10865	-0.09099	-
0.20058	-0.18585	-0.18689	-0.22770				
sk36	SK36 Repairing			-0.45167	-0.31787	-0.20427	-
0.34463	-0.33620	-0.25278	-0.28179				
sk44	SK44 Management of financial resources			0.62591	0.72077	0.66450	
0.39408	0.78015	0.54736	0.38785				
sk45	SK45 Management of material resources			0.48853	0.59579	0.60775	
0.27687	0.51938	0.41990	0.30505				

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KN9	KN10	KN11	KN12	KN6	KN7	KN8
GWA4	GWA4 Inspecting equipment, structures or materials			0.02354	0.39855	0.01958
0.23922	0.64531	0.45840	0.33014			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.44908	0.07677	0.13273
0.42323	0.26850	0.30068	0.06058			
GWA14	GWA14 Scheduling work and activities			0.70547	-0.15085	0.12619
0.31056	-0.05713	-0.00742	-0.12829			
GWA16	GWA16 Performing general physical activities			-0.23893	0.05717	0.03142
0.38943	0.21106	0.04237	0.40678			
GWA17	GWA17 Handling and moving objects			-0.41639	0.32264	-0.05674
0.31559	0.24684	0.16007	0.32292			
GWA18	GWA18 Controlling machines and processes			-0.32728	0.43281	-0.04342
0.13996	0.48680	0.20987	0.28156			
GWA19	GWA19 Interacting with computers			0.34386	-0.08096	0.02500
0.72769	0.10763	0.16911	-0.21203			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			-0.04539	-0.08795	0.06190
0.10809	0.17982	-0.05115	0.15909			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.06155	0.34722	0.02099
0.36474	0.62428	0.76488	0.36731			
GWA22	GWA22 Implementing ideas, programs, systems or products			0.40505	0.09321	0.08806
0.43310	0.24664	0.31619	0.08348			
GWA23	GWA23 Repairing and maintaining mechanical equipment			-0.24178	0.29267	-0.06132
0.07042	0.52852	0.22614	0.34668			
GWA24	GWA24 Repairing and maintaining electronic equipment			-0.08278	0.10284	-0.10456
0.54860	0.47325	0.32938	0.12985			
GWA25	GWA25 Documenting/recording information			0.43728	-0.10534	0.11546
0.54941	0.03557	0.02375	-0.23952			
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.60901	-0.14269	0.08744
0.49698	0.05088	0.05096	-0.14982			
GWA28	GWA28 Communicating with persons outside the organizations			0.48784	-0.35297	0.12373
0.39995	-0.18279	-0.06376	-0.23360			
GWA40	GWA40 Performing administrative activities			0.64645	-0.15855	0.12119
0.40316	-0.15448	-0.10085	-0.25321			
GWA41	GWA41 Staffing organizational units			0.79663	-0.04157	0.14655
0.13554	-0.12224	-0.07065	-0.08982			
KN2	KN2 Clerical			0.37968	-0.20883	0.02094
0.45875	-0.21975	-0.15793	-0.30134			
KN3	KN3 Economics and Accounting			0.60282	-0.05361	0.12628
0.32770	-0.10223	0.00246	-0.07246			
KN4	KN4 Sales and Marketing			0.40711	-0.02929	0.14450
0.18478	-0.14560	0.02304	-0.10250			
KN5	KN5 Customer and Personal Service			0.38662	-0.29876	0.02976
0.15592	-0.28644	-0.12431	-0.23578			
KN6	KN6 Personnel and Human Resources			1.00000	-0.01114	0.14466

0.22747	-0.08364	-0.02121	-0.06693			
KN7	KN7	Production and Processing		-0.01114	1.00000	0.16788
0.05978	0.44057	0.42136	0.27078			
KN8	KN8	Food Production		0.14466	0.16788	1.00000
0.08180	-0.05862	-0.10300	-0.04959			
KN9	KN9	Computers and Electronics		0.22747	-0.05978	-0.08180
1.00000	0.28349	0.29583	-0.10775			
KN10	KN10	Engineering and Technology		-0.08364	0.44057	-0.05862
0.28349	1.00000	0.69630	0.53123			
KN11	KN11	Design		-0.02121	0.42136	-0.10300
0.29583	0.69630	1.00000	0.56115			
KN12	KN12	Building and Construction		-0.06693	0.27078	-0.04959
0.10775	0.53123	0.56115	1.00000			
KN13	KN13	Mechanical		-0.22455	0.43649	-0.07393
0.05194	0.70595	0.42223	0.54305			
KN14	KN14	Mathematics		0.39721	0.10362	0.06694
0.55113	0.33379	0.35576	0.06176			
KN16	KN16	Chemistry		-0.02866	0.18605	0.24525
0.02144	0.30176	0.09056	0.03946			
KN17	KN17	Biology		0.10406	-0.13366	0.41390
0.04963	-0.02680	-0.10504	-0.13056			
KN20	KN20	Geography		0.17832	-0.18947	0.05271
0.23182	0.07082	0.08371	0.00849			
KN21	KN21	Medicine and Dentistry		0.10578	-0.20378	0.08721
0.08244	-0.09995	-0.13027	-0.16075			
KN23	KN23	Education and Training		0.57946	-0.13085	0.12879
0.35552	-0.00808	0.03477	-0.11085			
KN29	KN29	Public Safety and Security		0.21860	0.01749	0.07144
0.18096	0.31343	0.13749	0.21387			
KN31	KN31	Telecommunications		0.21287	-0.18611	-0.04315
0.60041	0.17208	0.14272	-0.06671			
KN32	KN32	Communications and Media		0.42353	-0.14482	0.03331
0.47133	-0.08284	0.03661	-0.19159			
KN33	KN33	Transportation		0.11706	-0.04821	0.09878
0.05188	0.12141	-0.01981	0.07191			
sk3	SK3	Writing		0.50271	-0.17943	0.12199
0.54286	-0.03190	0.01632	-0.23212			
sk4	SK4	Speaking		0.57948	-0.26226	0.10076
0.47337	-0.07403	-0.01079	-0.20128			
sk27	SK27	Equipment selection		0.06500	0.35989	0.06635
0.26326	0.61475	0.51689	0.35614			
sk28	SK28	Installation		-0.17809	0.30312	-0.07341
0.14330	0.57125	0.45188	0.47368			
sk29	SK29	Programming		0.18633	0.01222	0.04473
0.57776	0.23153	0.26319	-0.04558			
sk30	SK30	Testing		-0.03850	0.34389	0.04104
0.41590	0.66474	0.46247	0.23560			
sk31	SK31	Operation monitoring		-0.18755	0.38406	-0.03735
0.15129	0.56288	0.21478	0.13525			
sk32	SK32	Operation and control		-0.20506	0.34478	-0.07361
0.05234	0.46927	0.15106	0.15393			
sk33	SK33	Product inspection		0.09717	0.49998	0.10762
0.25304	0.50919	0.50503	0.31237			
sk34	SK34	Equipment maintenance		-0.22924	0.33136	-0.05125
0.02926	0.48989	0.21307	0.29807			
sk35	SK35	Troubleshooting		-0.11623	0.30497	-0.04999
0.27606	0.67122	0.41107	0.32645			
sk36	SK36	Repairing		-0.25253	0.25586	-0.07322
0.01027	0.49079	0.25050	0.37154			
sk44	SK44	Management of financial resources		0.68788	-0.05770	0.16248
0.29986	-0.08842	0.04355	-0.06856			
sk45	SK45	Management of material resources		0.59546	0.11369	0.16045
0.29305	0.18269	0.23850	0.07921			

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	KN17	KN20	KN21	KN23	KN13	KN14	KN16
GWA4	GWA4	Inspecting equipment, structures or materials			0.59317	0.22566	0.35073
0.08634	-0.00753	0.04245	0.01117				
GWA5	GWA5	Estimating the characteristics of materials, products, events or information			-0.06577	0.65622	0.25782
0.29199	0.35200	0.14634	0.46876				
GWA14	GWA14	Scheduling work and activities			-0.31645	0.46247	0.07585
0.24409	0.22186	0.18456	0.62688				
GWA16	GWA16	Performing general physical activities			0.50006	-0.34807	0.08133
0.00024	-0.04250	0.05390	-0.20998				
GWA17	GWA17	Handling and moving objects			0.55851	-0.35848	0.13793
0.09445	-0.25307	-0.01694	-0.35909				
GWA18	GWA18	Controlling machines and processes			0.65968	-0.15602	0.32429
0.01468	-0.22631	-0.02789	-0.31659				
GWA19	GWA19	Interacting with computers			-0.30673	0.67045	0.10679
0.21293	0.21480	0.10966	0.43273				
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment			0.34786	-0.12708	-0.01651
0.05166	0.36470	-0.02106	-0.03282				
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment			0.26451	0.45012	0.21495
0.07467	0.08448	-0.02874	0.17779				
GWA22	GWA22	Implementing ideas, programs, systems or products			-0.05903	0.56626	0.26562
0.33025	0.14493	0.21884	0.51156				
GWA23	GWA23	Repairing and maintaining mechanical equipment			0.83264	-0.14241	0.15156
0.16485	-0.11099	-0.12090	-0.24688				
GWA24	GWA24	Repairing and maintaining electronic equipment			0.46278	0.11548	0.10387
0.05430	-0.03153	0.01320	0.00020				
GWA25	GWA25	Documenting/recording information			-0.31713	0.65161	0.21834
0.35895	0.28553	0.24866	0.49317				
GWA27	GWA27	Communicating with supervisors, peers or subordinates			-0.33774	0.63278	0.13751
0.29939	0.29053	0.21332	0.61527				
GWA28	GWA28	Communicating with persons outside the organizations			-0.49928	0.48157	0.07305
0.35527	0.33699	0.29529	0.59966				
GWA40	GWA40	Performing administrative activities			-0.38346	0.52371	0.02854
0.19405	0.21273	0.16502	0.50733				
GWA41	GWA41	Staffing organizational units			-0.23502	0.28662	-0.02901
0.08609	0.12748	0.04636	0.45662				
KN2	KN2	Clerical			-0.37165	0.39728	-0.03348
0.10671	0.22522	0.15370	0.35268				
KN3	KN3	Economics and Accounting			-0.30470	0.58269	-0.11278
0.03044	0.28527	-0.00871	0.41488				
KN4	KN4	Sales and Marketing			-0.25568	0.27030	-0.11660

0.01566	0.26217	0.00794	0.34364			
KN5	KN5 Customer and Personal Service			-0.32994	0.11596	-0.05498
0.16237	0.20225	0.35429	0.41192			
KN6	KN6 Personnel and Human Resources			-0.22455	0.39721	-0.02866
0.10406	0.17832	0.10578	0.57946			
KN7	KN7 Production and Processing			0.43649	0.10362	0.18605
0.13366	-0.18947	-0.20378	-0.13085			
KN8	KN8 Food Production			-0.07393	0.06694	0.24525
0.41390	0.05271	0.08721	0.12879			
KN9	KN9 Computers and Electronics			-0.05194	0.55113	0.02144
0.04963	0.23182	0.08244	0.35552			
KN10	KN10 Engineering and Technology			0.70595	0.33379	0.30176
0.02680	0.07082	-0.09995	-0.00808			
KN11	KN11 Design			0.42223	0.35576	0.09056
0.10504	0.08371	-0.13027	0.03477			
KN12	KN12 Building and Construction			0.54305	0.06176	0.03946
0.13056	0.00849	-0.16075	-0.11085			
KN13	KN13 Mechanical			1.00000	-0.07595	0.16833
0.18317	-0.07994	-0.13633	-0.23297			
KN14	KN14 Mathematics			-0.07595	1.00000	0.21968
0.22536	0.27135	0.07752	0.45544			
KN16	KN16 Chemistry			0.16833	0.21968	1.00000
0.63416	0.00301	0.42249	0.13822			
KN17	KN17 Biology			-0.18317	0.22536	0.63416
1.00000	0.06965	0.67855	0.31974			
KN20	KN20 Geography			-0.07994	0.27135	0.00301
0.06965	1.00000	-0.00313	0.24950			
KN21	KN21 Medicine and Dentistry			-0.13633	0.07752	0.42249
0.67855	-0.00313	1.00000	0.34440			
KN23	KN23 Education and Training			-0.23297	0.45544	0.13822
0.31974	0.24950	0.34440	1.00000			
KN29	KN29 Public Safety and Security			0.26546	0.19887	0.24241
0.14628	0.39417	0.23251	0.26323			
KN31	KN31 Telecommunications			-0.02629	0.27312	-0.03598
0.01270	0.39087	0.08049	0.29224			
KN32	KN32 Communications and Media			-0.36906	0.38864	0.00350
0.13081	0.37083	0.11947	0.53181			
KN33	KN33 Transportation			0.14887	0.09442	-0.03566
0.01796	0.57221	0.02245	0.09827			
sk3	SK3 Writing			-0.41433	0.63116	0.15932
0.36956	0.29029	0.26995	0.61753			
sk4	SK4 Speaking			-0.41184	0.56129	0.09604
0.33798	0.33928	0.33949	0.71587			
sk27	SK27 Equipment selection			0.43828	0.36031	0.40749
0.25493	-0.02064	0.13826	0.16709			
sk28	SK28 Installation			0.69795	-0.01088	0.10797
0.14024	-0.15900	-0.11348	-0.14750			
sk29	SK29 Programming			-0.12619	0.56091	0.11432
0.18753	0.09675	0.04531	0.32372			
sk30	SK30 Testing			0.53011	0.36576	0.41752
0.18461	-0.05826	0.10927	0.12494			
sk31	SK31 Operation monitoring			0.66741	0.02910	0.30605
0.01113	-0.07852	0.01170	-0.15650			
sk32	SK32 Operation and control			0.62402	-0.07233	0.23115
0.05902	-0.06387	0.01752	-0.20212			
sk33	SK33 Product inspection			0.42292	0.31512	0.30173
0.05797	-0.09695	-0.02485	0.10547			
sk34	SK34 Equipment maintenance			0.78578	-0.17515	0.15597
0.14727	-0.16397	-0.10486	-0.25345			
sk35	SK35 Troubleshooting			0.72784	0.11191	0.19888
0.08694	-0.04350	-0.07357	-0.06100			
sk36	SK36 Repairing			0.78708	-0.17597	0.10308
0.18136	-0.15620	-0.14368	-0.26133			
sk44	SK44 Management of financial resources			-0.31633	0.49507	-0.02624
0.15790	0.19751	0.11995	0.51686			
sk45	SK45 Management of material resources			-0.05812	0.47527	0.14597
0.23306	0.20363	0.16252	0.52878			

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure

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KN33	sk3	sk4	sk27	KN29	KN31	KN32
GWA4	GWA4 Inspecting equipment, structures or materials			0.35601	0.14568	-0.06126
0.11621	0.06005	-0.01659	0.58054			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.28280	0.26729	0.43832
0.15053	0.63233	0.58938	0.45121			
GWA14	GWA14 Scheduling work and activities			0.17272	0.28204	0.56045
0.09249	0.66763	0.72567	0.18453			
GWA16	GWA16 Performing general physical activities			0.22532	-0.14205	-0.42736
0.15501	-0.51605	-0.40478	0.11705			
GWA17	GWA17 Handling and moving objects			-0.00549	-0.26083	-0.50750
0.02488	-0.62610	-0.63376	0.22932			
GWA18	GWA18 Controlling machines and processes			0.07425	-0.17780	-0.37146
0.03224	-0.42016	-0.46749	0.39931			
GWA19	GWA19 Interacting with computers			0.09420	0.35981	0.52626
0.04783	0.71512	0.60529	0.24619			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			0.37431	0.11862	-0.10159
0.63684	-0.17619	-0.09111	0.00082			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.13897	0.13425	0.16977
0.02797	0.26677	0.18906	0.62779			
GWA22	GWA22 Implementing ideas, programs, systems or products			0.16879	0.19500	0.44162
0.05700	0.63446	0.57372	0.49633			
GWA23	GWA23 Repairing and maintaining mechanical equipment			0.16267	-0.07943	-0.33939
0.10644	-0.36984	-0.39283	0.34115			
GWA24	GWA24 Repairing and maintaining electronic equipment			0.16311	0.40640	-0.02122
0.01710	-0.01259	-0.03732	0.35107			
GWA25	GWA25 Documenting/recording information			0.23388	0.31824	0.52065
0.06816	0.85529	0.73467	0.18901			
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.25402	0.35729	0.63325
0.10389	0.82572	0.82910	0.21164			
GWA28	GWA28 Communicating with persons outside the organizations			0.18047	0.35382	0.63942

0.09561	0.77832	0.84278	-0.00466			
GWA40	GWA40	Performing administrative activities		0.16263	0.28421	0.52065
0.05822	0.74087	0.71758	0.04913			
GWA41	GWA41	Staffing organizational units		0.09995	0.12609	0.38954
0.02671	0.44486	0.47593	0.10557			
KN2	KN2	Clerical		0.11248	0.31902	0.45174
0.10733	0.57313	0.54345	-0.12480			
KN3	KN3	Economics and Accounting		0.13782	0.25354	0.43726
0.14333	0.53508	0.57610	-0.03605			
KN4	KN4	Sales and Marketing		0.05647	0.20407	0.43238
0.14087	0.32304	0.43358	-0.07957			
KN5	KN5	Customer and Personal Service		0.16442	0.24966	0.28563
0.14757	0.27122	0.45746	-0.18198			
KN6	KN6	Personnel and Human Resources		0.21860	0.21287	0.42353
0.11706	0.50271	0.57948	0.06500			
KN7	KN7	Production and Processing		0.01749	-0.18611	-0.14482
0.04821	-0.17943	-0.26226	0.35989			
KN8	KN8	Food Production		0.07144	-0.04315	0.03331
0.09878	0.12199	0.10076	0.06635			
KN9	KN9	Computers and Electronics		0.18096	0.60041	0.47133
0.05188	0.54286	0.47337	0.26326			
KN10	KN10	Engineering and Technology		0.31343	0.17208	-0.08284
0.12141	-0.03190	-0.07403	0.61475			
KN11	KN11	Design		0.13749	0.14272	0.03661
0.01981	0.01632	-0.01079	0.51689			
KN12	KN12	Building and Construction		0.21387	-0.06671	-0.19159
0.07191	-0.23212	-0.20128	0.35614			
KN13	KN13	Mechanical		0.26546	-0.02629	-0.36906
0.14887	-0.41433	-0.41184	0.43828			
KN14	KN14	Mathematics		0.19887	0.27312	0.38864
0.09442	0.63116	0.56129	0.36031			
KN16	KN16	Chemistry		0.24241	-0.03598	0.00350
0.03566	0.15932	0.09604	0.40749			
KN17	KN17	Biology		0.14628	0.01270	0.13081
0.01796	0.36956	0.33798	0.25493			
KN20	KN20	Geography		0.39417	0.39087	0.37083
0.57221	0.29029	0.33928	-0.02064			
KN21	KN21	Medicine and Dentistry		0.23251	0.08049	0.11947
0.02245	0.26995	0.33949	0.13826			
KN23	KN23	Education and Training		0.26323	0.29224	0.53181
0.09827	0.61753	0.71587	0.16709			
KN29	KN29	Public Safety and Security		1.00000	0.32990	0.15903
0.48684	0.16678	0.25575	0.15249			
KN31	KN31	Telecommunications		0.32990	1.00000	0.48026
0.30001	0.32456	0.40566	0.10419			
KN32	KN32	Communications and Media		0.15903	0.48026	1.00000
0.13257	0.66131	0.66469	0.01977			
KN33	KN33	Transportation		0.48684	0.30001	0.13257
1.00000	0.03708	0.13469	-0.03214			
sk3	SK3	Writing		0.16678	0.32456	0.66131
0.03708	1.00000	0.85356	0.17046			
sk4	SK4	Speaking		0.25575	0.40566	0.66469
0.13469	0.85356	1.00000	0.09926			
sk27	SK27	Equipment selection		0.15249	0.10419	0.01977
0.03214	0.17046	0.09926	1.00000			
sk28	SK28	Installation		0.07330	0.06373	-0.27838
0.06959	-0.26582	-0.28294	0.50287			
sk29	SK29	Programming		0.02158	0.23881	0.29598
0.10431	0.50515	0.39629	0.36795			
sk30	SK30	Testing		0.26117	0.19612	-0.02211
0.04149	0.17729	0.07565	0.65387			
sk31	SK31	Operation monitoring		0.23153	0.08758	-0.22051
0.11692	-0.16397	-0.23752	0.45237			
sk32	SK32	Operation and control		0.17888	0.05003	-0.23929
0.12788	-0.25625	-0.30130	0.40513			
sk33	SK33	Product inspection		0.13406	0.03872	0.02848
0.13793	0.16781	0.05239	0.58882			
sk34	SK34	Equipment maintenance		0.12785	-0.02822	-0.40057
0.06052	-0.38256	-0.41767	0.37998			
sk35	SK35	Troubleshooting		0.25630	0.20572	-0.19440
0.08689	-0.10695	-0.14902	0.53360			
sk36	SK36	Repairing		0.07383	-0.00424	-0.40369
0.01948	-0.38253	-0.40991	0.35997			
sk44	SK44	Management of financial resources		0.09885	0.22522	0.45368
0.06598	0.61365	0.63679	0.10844			
sk45	SK45	Management of material resources		0.21744	0.23978	0.38789
0.11022	0.54715	0.56792	0.42277			

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	sk31	sk32	sk33	sk34	sk28	sk29	sk30
GWA4	GWA4	Inspecting equipment, structures or materials			0.55863	0.19471	0.71363
0.62473	0.47222	0.58968	0.59785				
GWA5	GWA5	Estimating the characteristics of materials, products, events or information			0.00156	0.42868	0.32876
0.02762	-0.05275	0.32796	-0.11504				
GWA14	GWA14	Scheduling work and activities			-0.19561	0.29736	0.03670
0.20202	-0.22734	0.13024	-0.29136				
GWA16	GWA16	Performing general physical activities			0.36083	-0.32248	0.03354
0.19196	0.25020	-0.01982	0.44143				
GWA17	GWA17	Handling and moving objects			0.43477	-0.27017	0.14786
0.35329	0.43702	0.16622	0.51393				
GWA18	GWA18	Controlling machines and processes			0.46111	-0.13992	0.41405
0.69757	0.71124	0.28839	0.62612				
GWA19	GWA19	Interacting with computers			-0.08718	0.71892	0.29033
0.01969	-0.10614	0.18446	-0.25757				
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment			0.07775	-0.17802	-0.01020
0.25262	0.32635	-0.14368	0.28153				
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment			0.35732	0.45095	0.51793
0.24336	0.14673	0.51132	0.15403				
GWA22	GWA22	Implementing ideas, programs, systems or products			0.11238	0.49592	0.41470
0.03229	-0.04646	0.39754	-0.07018				
GWA23	GWA23	Repairing and maintaining mechanical equipment			0.64835	-0.17324	0.45948
0.62329	0.57111	0.31823	0.83102				
GWA24	GWA24	Repairing and maintaining electronic equipment			0.59766	0.15625	0.57531
0.46582	0.34801	0.31645	0.53150				
GWA25	GWA25	Documenting/recording information			-0.19569	0.49164	0.25409

0.02429	-0.13685	0.18252	-0.25984				
GWA27	GWA27	Communicating with supervisors, peers or subordinates	-0.20840	0.47085	0.15876	-	
0.12311	-0.19807	0.12769	-0.32492				
GWA28	GWA28	Communicating with persons outside the organizations	-0.34740	0.34982	-0.03878	-	
0.37725	-0.42171	-0.05731	-0.48773				
GWA40	GWA40	Performing administrative activities	-0.24416	0.32003	0.02354	-	
0.17945	-0.22519	0.10586	-0.30071				
GWA41	GWA41	Staffing organizational units	-0.14117	0.13403	-0.03584	-	
0.15370	-0.16578	0.10800	-0.18239				
KN2	KN2	Clerical	-0.30236	0.22477	-0.09589	-	
0.19944	-0.22056	-0.03891	-0.32158				
KN3	KN3	Economics and Accounting	-0.25536	0.21352	-0.10412	-	
0.32917	-0.34708	0.05839	-0.37548				
KN4	KN4	Sales and Marketing	-0.17732	0.09600	-0.14817	-	
0.31673	-0.31228	-0.01854	-0.29977				
KN5	KN5	Customer and Personal Service	-0.22956	0.02513	-0.20923	-	
0.33304	-0.31171	-0.20639	-0.29650				
KN6	KN6	Personnel and Human Resources	-0.17809	0.18633	-0.03850	-	
0.18755	-0.20506	0.09717	-0.22924				
KN7	KN7	Production and Processing	0.30312	0.01222	0.34389	-	
0.38406	0.34478	0.49998	0.33136				
KN8	KN8	Food Production	-0.07341	0.04473	0.04104	-	
0.03735	-0.07361	0.10762	-0.05125				
KN9	KN9	Computers and Electronics	0.14330	0.57776	0.41590	-	
0.15129	0.05234	0.25304	-0.02926				
KN10	KN10	Engineering and Technology	0.57125	0.23153	0.66474	-	
0.56288	0.46927	0.50919	0.48989				
KN11	KN11	Design	0.45188	0.26319	0.46247	-	
0.21478	0.15106	0.50503	0.21307				
KN12	KN12	Building and Construction	0.47368	-0.04558	0.23560	-	
0.13525	0.15393	0.31237	0.29807				
KN13	KN13	Mechanical	0.69795	-0.12619	0.53011	-	
0.66741	0.62402	0.42292	0.78578				
KN14	KN14	Mathematics	-0.01088	0.56091	0.36576	-	
0.02910	-0.07233	0.31512	-0.17515				
KN16	KN16	Chemistry	0.10797	0.11432	0.41752	-	
0.30605	0.23115	0.30173	0.15597				
KN17	KN17	Biology	-0.14024	0.18753	0.18461	-	
0.01113	-0.05902	0.05797	-0.14727				
KN20	KN20	Geography	-0.15900	0.09675	-0.05826	-	
0.07852	-0.06387	-0.09695	-0.16397				
KN21	KN21	Medicine and Dentistry	-0.11348	0.04531	0.10927	-	
0.01170	0.01752	-0.02485	-0.10486				
KN23	KN23	Education and Training	-0.14750	0.32372	0.12494	-	
0.15650	-0.20212	0.10547	-0.25345				
KN29	KN29	Public Safety and Security	0.07330	0.02158	0.26117	-	
0.23153	0.17888	0.13406	0.12785				
KN31	KN31	Telecommunications	0.06373	0.23881	0.19612	-	
0.08758	0.05003	0.03872	-0.02822				
KN32	KN32	Communications and Media	-0.27838	0.29598	-0.02211	-	
0.22051	-0.23929	0.02848	-0.40057				
KN33	KN33	Transportation	-0.06959	-0.10431	-0.04149	-	
0.11692	0.12788	-0.13793	0.06052				
sk3	SK3	Writing	-0.26582	0.50515	0.17729	-	
0.16397	-0.25625	0.16781	-0.38256				
sk4	SK4	Speaking	-0.28294	0.39629	0.07565	-	
0.23752	-0.30130	0.05239	-0.41767				
sk27	SK27	Equipment selection	0.50287	0.36795	0.65387	-	
0.45237	0.40513	0.58882	0.37998				
sk28	SK28	Installation	1.00000	0.09589	0.59406	-	
0.51435	0.45590	0.45713	0.72537				
sk29	SK29	Programming	0.09589	1.00000	0.39811	-	
0.10157	0.02731	0.23313	-0.09202				
sk30	SK30	Testing	0.59406	0.39811	1.00000	-	
0.64211	0.46879	0.65162	0.51641				
sk31	SK31	Operation monitoring	0.51435	0.10157	0.64211	-	
1.00000	0.86455	0.41012	0.72793				
sk32	SK32	Operation and control	0.45590	0.02731	0.46879	-	
0.86455	1.00000	0.33634	0.66699				
sk33	SK33	Product inspection	0.45713	0.23313	0.65162	-	
0.41012	0.33634	1.00000	0.37246				
sk34	SK34	Equipment maintenance	0.72537	-0.09202	0.51641	-	
0.72793	0.66699	0.37246	1.00000				
sk35	SK35	Troubleshooting	0.75125	0.19768	0.74626	-	
0.71921	0.60926	0.52486	0.79273				
sk36	SK36	Repairing	0.77425	-0.09356	0.49015	-	
0.59960	0.55659	0.35486	0.88797				
sk44	SK44	Management of financial resources	-0.18460	0.30393	-0.03544	-	
0.27772	-0.27572	0.12578	-0.31859				
sk45	SK45	Management of material resources	0.06637	0.34191	0.23125	-	
0.02341	-0.03233	0.34880	-0.06555				

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure

Correlations

sk44	sk45	sk35	sk36	
	GWA4	GWA4 Inspecting equipment, structures or materials	0.70430	0.53128
-0.01986	0.24986			
	GWA5	GWA5 Estimating the characteristics of materials, products, events or information	0.11292	-0.14039
0.55757	0.59076			
	GWA14	GWA14 Scheduling work and activities	-0.08266	-0.30203
0.70865	0.69285			
	GWA16	GWA16 Performing general physical activities	0.28226	0.44875
-0.34369	-0.16362			
	GWA17	GWA17 Handling and moving objects	0.32093	0.49820
-0.48968	-0.30096			
	GWA18	GWA18 Controlling machines and processes	0.48158	0.53619
-0.42225	-0.19891			
	GWA19	GWA19 Interacting with computers	0.02886	-0.28267
0.42580	0.39851			
	GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.23394	0.25470

-0.10280	-0.02295			
0.17273	GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.39958	0.15026
0.48138	0.39113			
-0.32157	GWA22	GWA22 Implementing ideas, programs, systems or products	0.14727	-0.07123
-0.09521	0.55039			
0.50970	GWA23	GWA23 Repairing and maintaining mechanical equipment	0.68816	0.81880
0.62138	-0.12267			
0.62591	GWA24	GWA24 Repairing and maintaining electronic equipment	0.63639	0.55772
0.72077	0.04630			
0.66450	GWA25	GWA25 Documenting/recording information	-0.02788	-0.30204
0.39408	0.45352			
0.78015	GWA27	GWA27 Communicating with supervisors, peers or subordinates	-0.06581	-0.35376
0.54736	0.57989			
0.38785	GWA28	GWA28 Communicating with persons outside the organizations	-0.25185	-0.45167
0.68788	0.48853			
-0.05770	GWA40	GWA40 Performing administrative activities	-0.10865	-0.31787
0.16248	0.59579			
0.29986	GWA41	GWA41 Staffing organizational units	-0.09099	-0.20427
-0.08842	0.60775			
0.04355	KN2	KN2 Clerical	-0.20058	-0.34463
-0.06856	0.27687			
-0.31633	KN3	KN3 Economics and Accounting	-0.18585	-0.33620
0.49507	0.51938			
-0.02624	KN4	KN4 Sales and Marketing	-0.18689	-0.25278
0.15790	0.41990			
0.19751	KN5	KN5 Customer and Personal Service	-0.22770	-0.28179
0.11995	0.30505			
0.51686	KN6	KN6 Personnel and Human Resources	-0.11623	-0.25253
0.09885	0.59546			
0.22522	KN7	KN7 Production and Processing	0.30497	0.25586
0.45368	0.11369			
0.06598	KN8	KN8 Food Production	-0.04999	-0.07322
0.61365	0.16045			
0.63679	KN9	KN9 Computers and Electronics	0.27606	-0.01027
0.10844	0.29305			
-0.18460	KN10	KN10 Engineering and Technology	0.67122	0.49079
0.30393	0.18269			
-0.03544	KN11	KN11 Design	0.41107	0.25050
-0.27772	0.23850			
-0.27572	KN12	KN12 Building and Construction	0.32645	0.37154
0.12578	0.07921			
-0.31859	KN13	KN13 Mechanical	0.72784	0.78708
-0.13430	-0.05812			
-0.28957	KN14	KN14 Mathematics	0.11191	-0.17597
1.00000	0.47527			
0.76330	KN16	KN16 Chemistry	0.19888	0.10308
0.76330	0.14597			
	KN17	KN17 Biology	-0.08694	-0.18136
	0.23306			
	KN20	KN20 Geography	-0.04350	-0.15620
	0.20363			
	KN21	KN21 Medicine and Dentistry	-0.07357	-0.14368
	0.16252			
	KN23	KN23 Education and Training	-0.06100	-0.26133
	0.52878			
	KN29	KN29 Public Safety and Security	0.25630	0.07383
	0.21744			
	KN31	KN31 Telecommunications	0.20572	-0.00424
	0.23978			
	KN32	KN32 Communications and Media	-0.19440	-0.40369
	0.38789			
	KN33	KN33 Transportation	0.08689	0.01948
	0.11022			
	sk3	SK3 Writing	-0.10695	-0.38253
	0.54715			
	sk4	SK4 Speaking	-0.14902	-0.40991
	0.56792			
	sk27	SK27 Equipment selection	0.53360	0.35997
	0.42277			
	sk28	SK28 Installation	0.75125	0.77425
	0.06637			
	sk29	SK29 Programming	0.19768	-0.09356
	0.34191			
	sk30	SK30 Testing	0.74626	0.49015
	0.23125			
	sk31	SK31 Operation monitoring	0.71921	0.59960
	-0.02341			
	sk32	SK32 Operation and control	0.60926	0.55659
	-0.03233			
	sk33	SK33 Product inspection	0.52486	0.35486
	0.34880			
	sk34	SK34 Equipment maintenance	0.79273	0.88797
	-0.06555			
	sk35	SK35 Troubleshooting	1.00000	0.77821
	0.14181			
	sk36	SK36 Repairing	0.77821	1.00000
	-0.07220			
	sk44	SK44 Management of financial resources	-0.13430	-0.28957
	0.76330			
	sk45	SK45 Management of material resources	0.14181	-0.07220
	1.00000			

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

The FACTOR Procedure
Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 53 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	15.2849491	4.7212549	0.2884	0.2884
2	10.5636942	7.3404491	0.1993	0.4877
3	3.2232451	0.4872472	0.0608	0.5485
4	2.7359979	0.1106049	0.0516	0.6001

5	2.6253930	0.5814421	0.0495	0.6497
6	2.0439508	0.4713491	0.0386	0.6882
7	1.5726017	0.4047125	0.0297	0.7179
8	1.1678892	0.1652871	0.0220	0.7400
9	1.0026021	0.0818375	0.0189	0.7589
10	0.9207646	0.0919270	0.0174	0.7762
11	0.8288376	0.0501612	0.0156	0.7919
12	0.7786764	0.0901089	0.0147	0.8066
13	0.6885676	0.0638961	0.0130	0.8196
14	0.6246715	0.0144265	0.0118	0.8314
15	0.6102450	0.0307796	0.0115	0.8429
16	0.5794654	0.0598687	0.0109	0.8538
17	0.5195967	0.0364478	0.0098	0.8636
18	0.4831489	0.0173731	0.0091	0.8727
19	0.4657757	0.0638829	0.0088	0.8815
20	0.4018929	0.0301677	0.0076	0.8891
21	0.3717251	0.0082820	0.0070	0.8961
22	0.3634432	0.0324580	0.0069	0.9030
23	0.3309852	0.0221747	0.0062	0.9092
24	0.3088105	0.0225587	0.0058	0.9150
25	0.2862518	0.0010052	0.0054	0.9204
26	0.2852466	0.0327696	0.0054	0.9258
27	0.2524770	0.0087194	0.0048	0.9306
28	0.2437576	0.0119293	0.0046	0.9352
29	0.2318283	0.0211041	0.0044	0.9396
30	0.2107242	0.0041559	0.0040	0.9435
31	0.2065683	0.0065570	0.0039	0.9474
32	0.2000113	0.0047639	0.0038	0.9512
33	0.1952474	0.0156224	0.0037	0.9549
34	0.1796250	0.0029147	0.0034	0.9583
35	0.1767103	0.0016088	0.0033	0.9616
36	0.1751015	0.0129265	0.0033	0.9649
37	0.1621750	0.0088142	0.0031	0.9680
38	0.1533607	0.0054479	0.0029	0.9709
39	0.1479128	0.0083086	0.0028	0.9737
40	0.1396042	0.0093634	0.0026	0.9763
41	0.1302408	0.0066467	0.0025	0.9788
42	0.1235941	0.0053235	0.0023	0.9811
43	0.1182706	0.0065270	0.0022	0.9833
44	0.1117437	0.0070801	0.0021	0.9854
45	0.1046636	0.0038996	0.0020	0.9874
46	0.1007640	0.0052536	0.0019	0.9893
47	0.0955104	0.0044327	0.0018	0.9911
48	0.0910776	0.0030928	0.0017	0.9928
49	0.0879848	0.0066465	0.0017	0.9945
50	0.0813383	0.0068146	0.0015	0.9960
51	0.0745237	0.0039737	0.0014	0.9974
52	0.0705500	0.0043429	0.0013	0.9988
53	0.0662071		0.0012	1.0000

9 factors will be retained by the MINEIGEN criterion.

sk27	SK27 Equipment selection								
0.18235	0.14563	0.18499							
sk28	SK28 Installation								
0.02608	-0.17194	0.01943							
sk29	SK29 Programming								
0.37072	-0.02731	-0.24311							
sk30	SK30 Testing								
0.18443	0.13374	-0.14469							

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

The FACTOR Procedure
Initial Factor Method: Principal Components

sk36	sk28	sk44	sk29	sk45	sk30	sk31	sk32	sk33	sk34	sk35
	0.81275734		0.62673214		0.80608624	0.86746696	0.77318757	0.66169842	0.88162703	0.85793881
	0.87210663	0.79131158		0.72756161						

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

		1	2	3	4	5	6	7	
8	9								
		1	0.43029	0.69823	0.53000	-0.02698	0.12380	0.05831	0.14599
-0.06673	0.03459	2	0.76224	0.25404	0.28498	0.47144	0.16459	0.10028	-0.05120
0.10479	0.01525	3	0.15277	0.21468	-0.34341	-0.26959	-0.00437	0.81367	0.24359
-0.13408	-0.02405	4	-0.00614	-0.09222	-0.06257	-0.25150	0.92820	-0.01213	-0.21028
0.00108	0.13554	5	-0.13312	0.48778	-0.68160	0.33594	0.02685	-0.20886	-0.10262
0.19617	0.27121	6	0.42845	0.33852	-0.07325	-0.67973	-0.13010	-0.45403	0.09311
0.01170	-0.05065	7	0.03728	-0.03337	-0.16414	0.25029	0.21465	-0.27135	0.59743
-0.62719	-0.19472	8	0.01289	-0.19652	0.09942	-0.03423	0.04755	-0.02591	0.66207
0.46054	0.54479	9	-0.08726	0.03308	-0.09621	0.04881	0.17328	-0.01670	0.24094
0.56789	-0.75418								

Rotated Factor Pattern

Factor3	Factor4	Factor5	Factor1	Factor2
GWA4	GWA4 Inspecting equipment, structures or materials		0.71647	0.12615
0.10340	0.33317	0.15753		
GWA5	GWA5 Estimating the characteristics of materials, products, events or information		0.05159	0.60823
0.39528	0.35985	0.18196		
GWA14	GWA14 Scheduling work and activities		-0.09874	0.86329
0.22899	0.01980	0.10963		
GWA16	GWA16 Performing general physical activities		0.32747	-0.18446
0.63114	0.13542	0.15683		
GWA17	GWA17 Handling and moving objects		0.40450	-0.41190
0.50386	0.16527	0.13061		
GWA18	GWA18 Controlling machines and processes		0.61817	-0.27019
0.23704	0.09630	0.16843		
GWA19	GWA19 Interacting with computers		-0.03030	0.35209
0.80788	0.11398	0.07906		
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment		0.24756	-0.02714
0.23925	-0.09411	-0.04799		
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment		0.25268	0.16607
0.29225	0.75497	0.06654		
GWA22	GWA22 Implementing ideas, programs, systems or products		0.11074	0.57248
0.39731	0.37806	0.26268		
GWA23	GWA23 Repairing and maintaining mechanical equipment		0.81014	-0.14591
0.26151	0.05559	-0.06501		
GWA24	GWA24 Repairing and maintaining electronic equipment		0.72076	-0.09179
0.30228	0.09922	-0.01930		
GWA25	GWA25 Documenting/recording information		-0.04760	0.51448
0.68942	-0.02963	0.24222		
GWA27	GWA27 Communicating with supervisors, peers or subordinates		-0.10993	0.70706
0.52962	0.07010	0.16968		
GWA28	GWA28 Communicating with persons outside the organizations		-0.31780	0.59738
0.44970	-0.00031	0.21858		
GWA40	GWA40 Performing administrative activities		-0.08959	0.78897
0.41354	-0.16994	0.03296		
GWA41	GWA41 Staffing organizational units		-0.03346	0.87133
0.02243	-0.08687	-0.07171		
KN2	KN2 Clerical		-0.17831	0.33821
0.51315	-0.28731	0.03298		
KN3	KN3 Economics and Accounting		-0.23608	0.66670
0.26047	0.03049	-0.19303		
KN4	KN4 Sales and Marketing		-0.22023	0.47174
0.08253	0.05586	-0.13915		
KN5	KN5 Customer and Personal Service		-0.21856	0.36522
0.03066	-0.15229	0.20365		
KN6	KN6 Personnel and Human Resources		-0.08423	0.84135
0.05119	-0.04790	-0.02989		
KN7	KN7 Production and Processing		0.30252	-0.02094
0.12120	0.37201	-0.07466		
KN8	KN8 Food Production		-0.02822	0.12500
0.03327	-0.05542	0.23924		
KN9	KN9 Computers and Electronics		0.23566	0.15427
0.80627	0.12134	-0.03567		
KN10	KN10 Engineering and Technology		0.58154	-0.05875
0.12521	0.61769	0.02607		
KN11	KN11 Design		0.24983	-0.02482
0.13475	0.85215	-0.08920		
KN12	KN12 Building and Construction		0.23743	-0.01684
0.33766	0.68848	-0.10552		
KN13	KN13 Mechanical		0.77689	-0.18285
0.28808	0.29862	-0.05845		
KN14	KN14 Mathematics		0.00263	0.41830
0.58396	0.35893	0.07923		
KN16	KN16 Chemistry		0.21399	0.00859
0.06734	0.12912	0.73940		
KN17	KN17 Biology		-0.07578	0.13678
0.12291	-0.00848	0.84605		
KN20	KN20 Geography		-0.15037	0.13983
0.24794	0.10733	-0.03994		
KN21	KN21 Medicine and Dentistry		-0.02943	0.12031
0.01711	-0.11467	0.83227		
KN23	KN23 Education and Training		-0.10163	0.60034
0.24962	0.08165	0.30853		
KN29	KN29 Public Safety and Security		0.20394	0.18449
0.02857	0.13092	0.27802		
KN31	KN31 Telecommunications		0.16605	0.12184
0.49676	0.00438	-0.03738		
KN32	KN32 Communications and Media		-0.25072	0.43663
0.49847	0.04171	0.04256		
KN33	KN33 Transportation		0.04852	0.07052
0.01627	-0.04280	-0.04485		
sk3	SK3 Writing		-0.17416	0.58735
0.64986	0.02433	0.22413		
sk4	SK4 Speaking		-0.21992	0.64631
0.49743	0.01501	0.24416		
sk27	SK27 Equipment selection		0.50840	0.19797
0.12695	0.52883	0.28607		
sk28	SK28 Installation		0.78243	-0.10298
0.09753	0.33635	-0.09235		
sk29	SK29 Programming		0.08387	0.17829
0.66938	0.26752	0.05660		
sk30	SK30 Testing		0.70665	0.02268
0.34368	0.33381	0.23867		
sk31	SK31 Operation monitoring		0.80224	-0.15569
0.09325	-0.03447	0.11988		
sk32	SK32 Operation and control		0.71643	-0.16476
0.03462	-0.07369	0.09453		
sk33	SK33 Product inspection		0.49489	0.19769
0.13825	0.43216	0.08391		

sk34	SK34 Equipment maintenance	0.89624	-0.15243	-
0.21735	0.00078 -0.05484			
sk35	SK35 Troubleshooting	0.89345	-0.03324	
0.08700	0.20632 -0.03738			
sk36	SK36 Repairing	0.86272	-0.16641	-
0.23150	0.07458 -0.12393			
sk44	SK44 Management of financial resources	-0.15912	0.81820	
0.18010	0.06955 -0.05607			
sk45	SK45 Management of material resources	0.09862	0.77570	
0.12363	0.25253 0.09813			

Rotated Factor Pattern

Factor8	Factor9	Factor6	Factor7
0.13008	GWA4 GWA4 Inspecting equipment, structures or materials -0.00410	0.08682	-0.09254
-0.00532	GWA5 GWA5 Estimating the characteristics of materials, products, events or information 0.07580	0.16656	-0.15197
-0.09836	GWA14 GWA14 Scheduling work and activities -0.03609	0.04079	0.00298
-0.25171	GWA16 GWA16 Performing general physical activities -0.01380	0.24815	-0.01913
0.11624	GWA17 GWA17 Handling and moving objects -0.06772	-0.04156	0.00183
0.32776	GWA18 GWA18 Controlling machines and processes -0.11089	0.01773	-0.27398
-0.02175	GWA19 GWA19 Interacting with computers -0.00200	-0.05806	-0.00560
-0.12510	GWA20 GWA20 Operating vehicles, mechanized devices, or equipment 0.06274	0.76237	-0.12565
0.05287	GWA21 GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment 0.00888	-0.03522	-0.07842
-0.10862	GWA22 GWA22 Implementing ideas, programs, systems or products -0.00161	-0.09793	-0.14123
0.01233	GWA23 GWA23 Repairing and maintaining mechanical equipment 0.00503	0.11164	-0.05523
-0.19612	GWA24 GWA24 Repairing and maintaining electronic equipment -0.07937	-0.02520	0.27422
0.03264	GWA25 GWA25 Documenting/recording information 0.01739	0.07019	-0.07542
-0.07986	GWA27 GWA27 Communicating with supervisors, peers or subordinates -0.06422	0.12107	-0.09873
-0.23486	GWA28 GWA28 Communicating with persons outside the organizations 0.04357	0.12082	0.19620
0.02498	GWA40 GWA40 Performing administrative activities 0.02023	0.00809	0.06006
0.01778	GWA41 GWA41 Staffing organizational units 0.00451	-0.04312	-0.03627
0.15407	KN2 KN2 Clerical -0.08400	0.07481	0.30475
0.12794	KN3 KN3 Economics and Accounting 0.17275	0.11533	0.27211
0.08055	KN4 KN4 Sales and Marketing 0.24238	0.10274	0.52903
-0.11842	KN5 KN5 Customer and Personal Service -0.08300	0.08551	0.67776
0.08746	KN6 KN6 Personnel and Human Resources -0.03102	0.05701	0.11425
0.69487	KN7 KN7 Production and Processing 0.18428	-0.13430	-0.04806
0.08933	KN8 KN8 Food Production 0.84272	0.08110	-0.00041
-0.07051	KN9 KN9 Computers and Electronics -0.10007	0.04658	0.26701
0.15104	KN10 KN10 Engineering and Technology -0.04849	0.18363	-0.07871
0.11854	KN11 KN11 Design -0.07586	-0.00278	0.11811
-0.06685	KN12 KN12 Building and Construction -0.03981	0.13490	-0.02767
0.12805	KN13 KN13 Mechanical -0.03685	0.17651	-0.02410
0.14528	KN14 KN14 Mathematics 0.09388	0.09404	-0.01337
0.20959	KN16 KN16 Chemistry 0.17759	0.01231	-0.12573
-0.10481	KN17 KN17 Biology 0.30383	0.00091	-0.05144
-0.08259	KN20 KN20 Geography 0.06821	0.73800	0.06849
-0.09288	KN21 KN21 Medicine and Dentistry -0.14186	0.00796	0.21051
-0.11724	KN23 KN23 Education and Training -0.07859	0.10333	0.18139
0.08299	KN29 KN29 Public Safety and Security -0.14336	0.63981	0.12913
-0.15695	KN31 KN31 Telecommunications -0.14192	0.37088	0.39899
0.01231	KN32 KN32 Communications and Media -0.12442	0.18367	0.16863

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-LEVEL SCALE

SAS OUTPUT

The FACTOR Procedure
Rotation Method: Varimax
Rotated Factor Pattern

Factor6 Factor7

Factor8	Factor9			
0.04870	KN33	KN33 Transportation	0.86193	0.06841
	0.06965			
-0.06193	sk3	SK3 Writing	0.04013	-0.03912
	0.02631			
-0.14202	sk4	SK4 Speaking	0.15017	0.13801
	-0.05404			
0.06691	sk27	SK27 Equipment selection	-0.07767	-0.17252
	0.03777			
-0.17171	sk28	SK28 Installation	-0.13701	0.09342
	0.04234			
-0.13062	sk29	SK29 Programming	-0.12353	-0.13863
	0.11633			
0.07460	sk30	SK30 Testing	-0.07334	-0.06982
	0.06232			
0.31797	sk31	SK31 Operation monitoring	0.12750	-0.22318
	-0.09065			
0.34011	sk32	SK32 Operation and control	0.16254	-0.22591
	-0.15516			
0.32581	sk33	SK33 Product inspection	-0.21012	-0.01944
	0.11875			
0.00401	sk34	SK34 Equipment maintenance	0.02000	-0.06122
	0.02720			
-0.04615	sk35	SK35 Troubleshooting	0.06405	0.00182
	0.02848			
-0.14245	sk36	SK36 Repairing	-0.01903	0.02024
	0.06747			
0.01608	sk44	SK44 Management of financial resources	-0.00881	0.17668
	0.15674			
0.04379	sk45	SK45 Management of material resources	0.02939	0.11311
	0.10893			

Variance Explained by Each Factor

Factor8	Factor9	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
1.5329815	1.2477523	9.4747173	9.2122035	6.8362679	4.1092315	3.0194136	2.9452652	1.8424903

Final Communality Estimates: Total = 40.220323

GWA23	GWA4	GWA5	GWA14	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22
0.70879003	0.74806405	0.83252185	0.70803138	0.65136299	0.74406529	0.80067343	0.74700808	0.76150340	0.75111949	
0.76901448	0.75010553	0.81378156	0.86113731							
KN9	GWA28	GWA40	GWA41	KN2	KN3	KN4	KN5	KN6	KN7	KN8
0.81801526	0.83618436	0.77704574	0.62240463	0.73981000	0.65600520	0.73434556	0.74568471	0.78775656	0.80257392	
0.83386302	0.80461795	0.84907027	0.68082054							
KN33	KN13	KN14	KN16	KN17	KN20	KN21	KN23	KN29	KN31	KN32
0.86206372	0.69003914	0.70521390	0.86137485	0.67756550	0.79459306	0.59840711	0.62435489	0.63212757	0.58333035	
0.76626713	0.85612537	0.83804079	0.71696879							
sk36	sk28	sk44	sk29	sk45	sk30	sk31	sk32	sk33	sk34	sk35
0.87210663	0.81275734	0.62673214	0.80608624	0.86746696	0.77318757	0.66169842	0.88162703	0.85793881		
	0.79131158	0.72756161								

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-IMPORTANCE

SAS OUTPUT
The FACTOR Procedure

Correlations

GWA11	GWA12	GWA13	GWA15	GWA1	GWA2	GWA3	GWA9	GWA10
GWA1	GWA1 Getting information needed to do job			1.00000	0.73559	0.23982	0.77649	0.68831
0.40051	0.66873	0.55343	0.56225					
GWA2	GWA2 Identifying objects, actions, and events			0.73559	1.00000	0.44288	0.76066	0.72550
0.35748	0.68708	0.53456	0.53762					
GWA3	GWA3 Monitoring processes, materials, or surroundings			0.23982	0.44288	1.00000	0.27587	0.34030
0.08443	0.29879	0.21220	0.21094					
GWA9	GWA9 Analyzing data or information			0.77649	0.76066	0.27587	1.00000	0.82102
0.49520	0.76295	0.70813	0.67026					
GWA10	GWA10 Making decisions and solving problems			0.68831	0.72550	0.34030	0.82102	1.00000
0.54574	0.72510	0.77023	0.75372					
GWA11	GWA11 Thinking creatively			0.40051	0.35748	0.08443	0.49520	0.54574
1.00000	0.51736	0.62032	0.64317					
GWA12	GWA12 Updating and using job-relevant knowledge			0.66873	0.68708	0.29879	0.76295	0.72510
0.51736	1.00000	0.65094	0.65917					
GWA13	GWA13 Developing objectives and strategies			0.55343	0.53456	0.21220	0.70813	0.77023
0.62032	0.65094	1.00000	0.83079					
GWA15	GWA15 Organizing, planning, and prioritizing work			0.56225	0.53762	0.21094	0.67026	0.75372
0.64317	0.65917	0.83079	1.00000					
GWA26	GWA26 Interpreting the meaning of information for others			0.61886	0.58841	0.15170	0.73665	0.68921
0.47205	0.73370	0.70436	0.66507					
GWA29	GWA29 Establishing and maintaining interpersonal relationships			0.39691	0.33779	0.05991	0.48486	0.56319
0.46105	0.54845	0.66073	0.67125					
GWA30	GWA30 Assisting and caring for others			0.13580	0.11538	0.06106	0.18623	0.26627
0.16066	0.29582	0.31182	0.30163					
GWA31	GWA31 Selling or influencing others			0.31513	0.29639	-0.02173	0.41962	0.48298
0.45503	0.46501	0.60656	0.58072					
GWA32	GWA32 Resolving conflicts and negotiating with others			0.37146	0.34193	0.08075	0.45746	0.54656
0.38428	0.45108	0.63039	0.63881					
GWA34	GWA34 Coordinating the work and activities of others			0.39640	0.41574	0.30778	0.47970	0.61990

0.43948	0.46630	0.70360	0.70457					
GWA35	GWA35	Developing and building teams		0.36212	0.37022	0.23695	0.48523	0.59674
0.48833	0.47131	0.75635	0.70515					
GWA36	GWA36	Teaching others		0.36325	0.34662	0.19195	0.46600	0.53447
0.43840	0.52460	0.68393	0.61828					
GWA37	GWA37	Guiding, directing and motivating subordinates		0.34682	0.36206	0.25448	0.44190	0.57514
0.44089	0.41683	0.69733	0.66932					
GWA38	GWA38	Coaching and developing others		0.34832	0.32754	0.21427	0.43173	0.54473
0.44720	0.47299	0.70876	0.63465					
GWA39	GWA39	Providing consultation and advice to others		0.61094	0.59377	0.17091	0.75814	0.77416
0.57583	0.73967	0.81534	0.74576					
GWA42	GWA42	Monitoring and controlling resources		0.32476	0.37505	0.15682	0.44931	0.51863
0.39401	0.41452	0.61792	0.63887					
KN1	KN1	Administration and Management		0.46884	0.42891	0.13812	0.59413	0.68110
0.44396	0.53448	0.79704	0.74430					
KN22	KN22	Therapy and Counseling		0.18886	0.16470	0.10342	0.22857	0.29346
0.16002	0.30700	0.36423	0.28562					
SK2	SK2	Active listening		0.50787	0.39668	0.00197	0.51108	0.53324
0.35180	0.55009	0.54172	0.55957					
SK5	SK5	Mathematics		0.44816	0.38837	0.09752	0.49939	0.40398
0.14783	0.43875	0.34579	0.31369					
SK6	SK6	Science		0.39243	0.52182	0.40951	0.49050	0.42033
0.18039	0.49931	0.28599	0.26235					
SK7	SK7	Critical thinking		0.65542	0.62556	0.22216	0.74160	0.76079
0.43641	0.70534	0.68147	0.66530					
SK8	SK8	Active learning		0.63258	0.58876	0.14883	0.71131	0.70484
0.52615	0.69271	0.67336	0.65110					
SK9	SK9	Learning strategies		0.47344	0.41201	0.13950	0.52896	0.57619
0.47916	0.57052	0.64286	0.60116					
SK10	SK10	Monitoring		0.51017	0.42866	0.18946	0.48639	0.52574
0.41952	0.45509	0.50249	0.52275					
SK11	SK11	Social Perceptiveness		0.35309	0.28352	0.00261	0.39896	0.49551
0.38773	0.44953	0.56422	0.58533					
SK12	SK12	Coordination		0.39516	0.35096	0.17199	0.41507	0.57392
0.36710	0.43571	0.60392	0.63581					
SK13	SK13	Persuasion		0.42287	0.35973	0.01360	0.47495	0.55267
0.38626	0.49679	0.63108	0.61194					
SK14	SK14	Negotiation		0.42069	0.36854	0.02291	0.46118	0.57593
0.36611	0.43443	0.63705	0.63861					
SK15	SK15	Instructing		0.36845	0.32998	0.16593	0.41652	0.50719
0.38150	0.48152	0.61121	0.55757					
SK17	SK17	Problem identification		0.53833	0.54372	0.27189	0.56561	0.59294
0.14549	0.55926	0.45966	0.45702					
SK18	SK18	Information gathering		0.69483	0.60039	0.08097	0.71929	0.63767
0.32269	0.64668	0.57044	0.54612					
SK19	SK19	Information organization		0.56750	0.48541	0.02431	0.57904	0.47901
0.34011	0.53221	0.44681	0.46628					
SK20	SK20	Synthesis/Reorganization		0.59105	0.52743	0.02989	0.67879	0.62485
0.53896	0.62324	0.62546	0.62232					
SK22	SK22	Idea evaluation		0.58192	0.52623	0.14071	0.65520	0.70595
0.53955	0.60945	0.70351	0.66608					
SK24	SK24	Solution appraisal		0.59342	0.53009	0.14518	0.63127	0.63540
0.41241	0.59171	0.59302	0.57055					
SK37	SK37	Visioning		0.54461	0.47216	0.16578	0.57707	0.64108
0.46148	0.56767	0.65584	0.61431					
SK38	SK38	Systems perceptions		0.54554	0.52664	0.32417	0.59757	0.65094
0.30703	0.58229	0.60488	0.56870					
SK39	SK39	Identification of downstream consequences		0.55561	0.53307	0.25576	0.64080	0.68921
0.38443	0.61379	0.69230	0.63699					
SK40	SK40	Identification of key causes		0.56732	0.52195	0.21806	0.60477	0.68427
0.37718	0.57932	0.62713	0.60686					
SK41	SK41	Judgment and decision making		0.57850	0.55019	0.19156	0.64172	0.70887
0.35350	0.60382	0.64272	0.61173					
SK42	SK42	Systems evaluation		0.56661	0.54244	0.27934	0.64762	0.68477
0.36272	0.61980	0.66068	0.61209					
SK43	SK43	Time management		0.43517	0.35011	0.07785	0.46413	0.57605
0.41810	0.43520	0.63955	0.66714					
SK46	SK46	Management of personnel resources		0.39567	0.37939	0.23058	0.45836	0.60594
0.42586	0.42693	0.68607	0.68004					

Correlations

GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
GWA1	GWA1	Getting information needed to do job		0.61886	0.39691	0.13580	0.31513	0.37146
0.39640	0.36212	0.36325	0.34682					
GWA2	GWA2	Identifying objects, actions, and events		0.58841	0.33779	0.11538	0.29639	0.34193
0.41574	0.37022	0.34662	0.36206					
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.15170	0.05991	0.06106	-0.02173	0.08075
0.30778	0.23695	0.19195	0.25448					

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-IMPORTANCE

The FACTOR Procedure

Correlations

GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
GWA9	GWA9	Analyzing data or information		0.73665	0.48486	0.18623	0.41962	0.45746
0.47970	0.48523	0.46600	0.44190					
GWA10	GWA10	Making decisions and solving problems		0.68921	0.56319	0.26627	0.48298	0.54656
0.61990	0.59674	0.53447	0.57514					
GWA11	GWA11	Thinking creatively		0.47205	0.46105	0.16066	0.45503	0.38428
0.43948	0.48833	0.43840	0.44089					
GWA12	GWA12	Updating and using job-relevant knowledge		0.73370	0.54845	0.29582	0.46501	0.45108
0.46630	0.47131	0.52460	0.41683					
GWA13	GWA13	Developing objectives and strategies		0.70436	0.66073	0.31182	0.60656	0.63039
0.70360	0.75635	0.68393	0.69733					
GWA15	GWA15	Organizing, planning, and prioritizing work		0.66507	0.67125	0.30163	0.58072	0.63881
0.70457	0.70515	0.61828	0.66932					
GWA26	GWA26	Interpreting the meaning of information for others		1.00000	0.71616	0.46070	0.56086	0.57922
0.51139	0.52434	0.64340	0.44401					
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.71616	1.00000	0.67215	0.73798	0.76162
0.63381	0.63933	0.65558	0.54273					
GWA30	GWA30	Assisting and caring for others		0.46070	0.67215	1.00000	0.37907	0.42706

0.32743	0.31133	0.47975	0.22450						
GWA31	GWA31	Selling or influencing others	0.56086	0.73798	0.37907	1.00000	0.73182		
0.47929	0.52625	0.46004	0.41733						
GWA32	GWA32	Resolving conflicts and negotiating with others	0.57922	0.76162	0.42706	0.73182	1.00000		
0.63136	0.66827	0.49680	0.58707						
GWA34	GWA34	Coordinating the work and activities of others	0.51139	0.63381	0.32743	0.47929	0.63136		
1.00000	0.84533	0.63954	0.87654						
GWA35	GWA35	Developing and building teams	0.52434	0.63933	0.31133	0.52625	0.66827		
0.84533	1.00000	0.68837	0.87448						
GWA36	GWA36	Teaching others	0.64340	0.65558	0.47975	0.46004	0.49680		
0.63954	0.68837	1.00000	0.65912						
GWA37	GWA37	Guiding, directing and motivating subordinates	0.44401	0.54273	0.22450	0.41733	0.58707		
0.87654	0.87448	0.65912	1.00000						
GWA38	GWA38	Coaching and developing others	0.55493	0.67809	0.46419	0.48840	0.57166		
0.73388	0.81333	0.88333	0.77736						
GWA39	GWA39	Providing consultation and advice to others	0.80818	0.71345	0.37579	0.65843	0.63002		
0.60223	0.63079	0.64486	0.55970						
GWA42	GWA42	Monitoring and controlling resources	0.44944	0.62454	0.27699	0.55564	0.64940		
0.64065	0.62935	0.45327	0.62614						
KN1	KN1	Administration and Management	0.59735	0.66036	0.29770	0.56064	0.66919		
0.79996	0.79046	0.63425	0.81551						
KN22	KN22	Therapy and Counseling	0.39973	0.51983	0.70087	0.27212	0.29661		
0.22959	0.29599	0.50425	0.19655						
SK2	SK2	Active listening	0.69417	0.72979	0.53213	0.52798	0.58291		
0.47340	0.41321	0.51721	0.37363						
SK5	SK5	Mathematics	0.35359	0.17399	-0.07444	0.17589	0.16724		
0.23626	0.18512	0.18678	0.24255						
SK6	SK6	Science	0.31807	0.01985	0.01373	-0.02045	-0.09092		
0.13547	0.10383	0.20802	0.12819						
SK7	SK7	Critical thinking	0.67522	0.48704	0.22761	0.40853	0.43450		
0.50018	0.48544	0.51833	0.48447						
SK8	SK8	Active learning	0.66257	0.47152	0.20164	0.37963	0.37334		
0.46057	0.46990	0.51919	0.46411						
SK9	SK9	Learning strategies	0.59345	0.52263	0.34594	0.35059	0.36190		
0.47416	0.50194	0.70927	0.50746						
SK10	SK10	Monitoring	0.45097	0.39035	0.16257	0.24716	0.29542		
0.38739	0.40011	0.43870	0.41323						
SK11	SK11	Social Perceptiveness	0.64524	0.82297	0.64559	0.64473	0.68427		
0.50231	0.49695	0.59064	0.43154						
SK12	SK12	Coordination	0.51158	0.63157	0.39079	0.44639	0.54952		
0.72495	0.63103	0.54195	0.63190						
SK13	SK13	Persuasion	0.58818	0.66341	0.37372	0.71630	0.61249		
0.47891	0.47371	0.52773	0.43387						
SK14	SK14	Negotiation	0.49243	0.59508	0.23133	0.66426	0.70426		
0.54725	0.53293	0.44131	0.52385						
SK15	SK15	Instructing	0.58591	0.59220	0.45966	0.41495	0.43658		
0.57941	0.57287	0.85997	0.59626						
SK17	SK17	Problem identification	0.45044	0.31193	0.13177	0.23936	0.33083		
0.34269	0.33505	0.35000	0.32949						
SK18	SK18	Information gathering	0.66573	0.41382	0.18293	0.34580	0.36591		
0.35701	0.32670	0.39435	0.32715						
SK19	SK19	Information organization	0.51619	0.28281	0.07965	0.19445	0.21875		
0.24398	0.23716	0.31781	0.25518						
SK20	SK20	Synthesis/Reorganization	0.63650	0.43393	0.16040	0.33390	0.33326		
0.39805	0.39383	0.44820	0.40078						
SK22	SK22	Idea evaluation	0.58028	0.44812	0.17029	0.40425	0.38582		
0.49257	0.49384	0.51319	0.50147						
SK24	SK24	Solution appraisal	0.51966	0.38136	0.12217	0.31274	0.30799		
0.39199	0.40247	0.44737	0.41218						
SK37	SK37	Visioning	0.51844	0.42444	0.13344	0.36473	0.36616		
0.51222	0.51571	0.49252	0.52675						
SK38	SK38	Systems perceptions	0.52511	0.40086	0.12274	0.31213	0.37776		
0.51575	0.49015	0.46626	0.50434						
SK39	SK39	Identification of downstream consequences	0.55146	0.44168	0.13142	0.39919	0.42301		
0.53656	0.52291	0.48922	0.54162						
SK40	SK40	Identification of key causes	0.52206	0.43958	0.19667	0.39089	0.39954		
0.46104	0.44825	0.46259	0.44981						
SK41	SK41	Judgment and decision making	0.58163	0.47857	0.25139	0.39301	0.43696		
0.50130	0.48945	0.47486	0.47083						
SK42	SK42	Systems evaluation	0.54256	0.39879	0.08061	0.34662	0.40455		
0.53589	0.52586	0.46737	0.55252						
SK43	SK43	Time management	0.51258	0.57548	0.31075	0.44237	0.52807		
0.64441	0.59886	0.55476	0.64551						
SK46	SK46	Management of personnel resources	0.45775	0.54480	0.23422	0.40784	0.55811		
0.83847	0.79243	0.62823	0.87225						

Correlations

				GWA38	GWA39	GWA42	KN1	KN22
SK2	SK5	SK6	SK7					
GWA1	GWA1	Getting information needed to do job		0.34832	0.61094	0.32476	0.46884	0.18886
0.50787	0.44816	0.39243	0.65542					
GWA2	GWA2	Identifying objects, actions, and events		0.32754	0.59377	0.37505	0.42891	0.16470
0.39668	0.38837	0.52182	0.62556					
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.21427	0.17091	0.15682	0.13812	0.10342
0.00197	0.09752	0.40951	0.22216					
GWA9	GWA9	Analyzing data or information		0.43173	0.75814	0.44931	0.59413	0.22857
0.51108	0.49939	0.49050	0.74160					
GWA10	GWA10	Making decisions and solving problems		0.54473	0.77416	0.51863	0.68110	0.29346
0.53324	0.40398	0.42033	0.76079					
GWA11	GWA11	Thinking creatively		0.44720	0.57583	0.39401	0.44396	0.16002
0.35180	0.14783	0.18039	0.43641					
GWA12	GWA12	Updating and using job-relevant knowledge		0.47299	0.73967	0.41452	0.53448	0.30700
0.55009	0.43875	0.49931	0.70534					
GWA13	GWA13	Developing objectives and strategies		0.70876	0.81534	0.61792	0.79704	0.36423
0.54172	0.34579	0.28599	0.68147					
GWA15	GWA15	Organizing, planning, and prioritizing work		0.63465	0.74576	0.63887	0.74430	0.28562
0.55957	0.31369	0.26235	0.66530					
GWA26	GWA26	Interpreting the meaning of information for others		0.55493	0.80818	0.44944	0.59735	0.39973
0.69417	0.35359	0.31807	0.67522					
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.67809	0.71345	0.62454	0.66036	0.51983
0.72979	0.17399	0.01985	0.48704					
GWA30	GWA30	Assisting and caring for others		0.46419	0.37579	0.27699	0.29770	0.70087
0.53213	-0.07444	0.01373	0.22761					
GWA31	GWA31	Selling or influencing others		0.48840	0.65843	0.55564	0.56064	0.27212
0.52798	0.17589	-0.02045	0.40853					

GWA32	GWA32	Resolving conflicts and negotiating with others	0.57166	0.63002	0.64940	0.66919	0.29661
0.58291		0.16724 -0.09092 0.43450					
GWA34	GWA34	Coordinating the work and activities of others	0.73388	0.60223	0.64065	0.79996	0.22959
0.47340		0.23626 0.13547 0.50018					
GWA35	GWA35	Developing and building teams	0.81333	0.63079	0.62935	0.79046	0.29599
0.41321		0.18512 0.10383 0.48544					
GWA36	GWA36	Teaching others	0.88333	0.64486	0.45327	0.63425	0.50425
0.51721		0.18678 0.20802 0.51833					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.77736	0.55970	0.62614	0.81551	0.19655
0.37363		0.24255 0.12819 0.48447					
GWA38	GWA38	Coaching and developing others	1.00000	0.63230	0.52409	0.69591	0.51697
0.45567		0.14803 0.13708 0.48617					
GWA39	GWA39	Providing consultation and advice to others	0.63230	1.00000	0.54591	0.72023	0.37147
0.64065		0.38149 0.32806 0.73124					
GWA42	GWA42	Monitoring and controlling resources	0.52409	0.54591	1.00000	0.67118	0.11116
0.37693		0.24599 0.01964 0.31066					
KN1	KN1	Administration and Management	0.69591	0.72023	0.67118	1.00000	0.26558
0.57493		0.36091 0.15565 0.63989					
KN22	KN22	Therapy and Counseling	0.51697	0.37147	0.11116	0.26558	1.00000
0.44260		0.00328 0.14690 0.34021					
SK2	SK2	Active listening	0.45567	0.64065	0.37693	0.57493	0.44260
1.00000		0.31826 0.16030 0.66081					
SK5	SK5	Mathematics	0.14803	0.38149	0.24599	0.36091	0.00328
0.31826		1.00000 0.50007 0.52806					
SK6	SK6	Science	0.13708	0.32806	0.01964	0.15565	0.14690
0.16030		0.50007 1.00000 0.55119					
SK7	SK7	Critical thinking	0.48617	0.73124	0.31066	0.63989	0.34021
0.66081		0.52806 0.55119 1.00000					
SK8	SK8	Active learning	0.47321	0.71233	0.30107	0.59644	0.32951
0.64449		0.51325 0.54439 0.90948					
SK9	SK9	Learning strategies	0.64448	0.62331	0.27763	0.56535	0.48842
0.62294		0.36341 0.42229 0.76021					
SK10	SK10	Monitoring	0.42744	0.49048	0.24714	0.46609	0.31411
0.50812		0.36720 0.34206 0.68780					
SK11	SK11	Social Perceptiveness	0.56416	0.60347	0.45484	0.57624	0.56850
0.81201		0.15854 0.02685 0.54018					
SK12	SK12	Coordination	0.58149	0.56547	0.45048	0.69880	0.33186
0.69130		0.25820 0.15810 0.63783					
SK13	SK13	Persuasion	0.50812	0.67265	0.38353	0.62440	0.40801
0.70290		0.28792 0.14603 0.67408					
SK14	SK14	Negotiation	0.48841	0.62920	0.47660	0.69193	0.27055
0.60105		0.31373 0.08467 0.63558					
SK15	SK15	Instructing	0.78466	0.58531	0.33229	0.59439	0.51346
0.58337		0.23424 0.25819 0.57925					
SK17	SK17	Problem identification	0.33547	0.52628	0.22242	0.46381	0.27085
0.49160		0.49681 0.47184 0.75042					
SK18	SK18	Information gathering	0.34164	0.66322	0.23781	0.53261	0.26611
0.64262		0.56033 0.47374 0.83180					
SK19	SK19	Information organization	0.25667	0.50624	0.17606	0.39639	0.16705
0.49030		0.52371 0.44724 0.70577					
SK20	SK20	Synthesis/Reorganization	0.40160	0.66982	0.29160	0.56539	0.24073
0.60422		0.48256 0.43893 0.80708					
SK22	SK22	Idea evaluation	0.48405	0.69426	0.32066	0.63058	0.29265
0.60403		0.46378 0.46643 0.86778					
SK24	SK24	Solution appraisal	0.41516	0.61715	0.26723	0.54180	0.28999
0.55340		0.49863 0.48645 0.83347					
SK37	SK37	Visioning	0.48886	0.63812	0.29867	0.65830	0.27689
0.57055		0.44865 0.39074 0.82760					
SK38	SK38	Systems perceptions	0.45919	0.60482	0.30932	0.62827	0.24498
0.56743		0.45030 0.44021 0.82086					
SK39	SK39	Identification of downstream consequences	0.48249	0.67522	0.36470	0.68664	0.25214
0.57760		0.51113 0.45532 0.84082					
SK40	SK40	Identification of key causes	0.44532	0.63059	0.31314	0.59634	0.30806
0.60035		0.44309 0.42779 0.83144					
SK41	SK41	Judgment and decision making	0.46353	0.65911	0.32174	0.65318	0.33526
0.64414		0.44437 0.40455 0.86832					
SK42	SK42	Systems evaluation	0.46708	0.65617	0.35492	0.67684	0.21495
0.55608		0.51875 0.43741 0.81424					
SK43	SK43	Time management	0.57061	0.57142	0.46123	0.73584	0.30249
0.62554		0.28265 0.17467 0.65944					
SK46	SK46	Management of personnel resources	0.71130	0.56641	0.56907	0.80702	0.24018
0.48033		0.27520 0.18152 0.57921					

Correlations

SK13	SK14	SK15	SK17	SK8	SK9	SK10	SK11	SK12
GWA1	GWA1	Getting information needed to do job		0.63258	0.47344	0.51017	0.35309	0.39516
0.42287		0.42069 0.36845 0.53833						
GWA2	GWA2	Identifying objects, actions, and events		0.58876	0.41201	0.42866	0.28352	0.35096
0.35973		0.36854 0.32998 0.54372						
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.14883	0.13950	0.18946	0.00261	0.17199
0.01360		0.02291 0.16593 0.27189						
GWA9	GWA9	Analyzing data or information		0.71131	0.52896	0.48639	0.39896	0.41507
0.47495		0.46118 0.41652 0.56561						
GWA10	GWA10	Making decisions and solving problems		0.70484	0.57619	0.52574	0.49551	0.57392
0.55267		0.57593 0.50719 0.59294						
GWA11	GWA11	Thinking creatively		0.52615	0.47916	0.41952	0.38773	0.36710
0.38626		0.36611 0.38150 0.14549						
GWA12	GWA12	Updating and using job-relevant knowledge		0.69271	0.57052	0.45509	0.44953	0.43571
0.49679		0.43443 0.48152 0.55926						

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-IMPORTANCE

SAS OUTPUT

The FACTOR Procedure

Correlations

SK13	SK14	SK15	SK17	SK8	SK9	SK10	SK11	SK12
GWA13	GWA13	Developing objectives and strategies		0.67336	0.64286	0.50249	0.56422	0.60392
0.63108		0.63705 0.61121 0.45966						
GWA15	GWA15	Organizing, planning, and prioritizing work		0.65110	0.60116	0.52275	0.58533	0.63581
0.61194		0.63861 0.55757 0.45702						
GWA26	GWA26	Interpreting the meaning of information for others		0.66257	0.59345	0.45097	0.64524	0.51158

0.58818	0.49243	0.58591	0.45044					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.47152	0.52263	0.39035	0.82297	0.63157	
0.66341	0.59508	0.59220	0.31193					
GWA30	GWA30	Assisting and caring for others	0.20164	0.34594	0.16257	0.64559	0.39079	
0.37372	0.23133	0.45966	0.13177					
GWA31	GWA31	Selling or influencing others	0.37963	0.35059	0.24716	0.64473	0.44639	
0.71630	0.66426	0.41495	0.23936					
GWA32	GWA32	Resolving conflicts and negotiating with others	0.37334	0.36190	0.29542	0.68427	0.54952	
0.61249	0.70426	0.43658	0.33083					
GWA34	GWA34	Coordinating the work and activities of others	0.46057	0.47416	0.38739	0.50231	0.72495	
0.47891	0.54725	0.57941	0.34269					
GWA35	GWA35	Developing and building teams	0.46990	0.50194	0.40011	0.49695	0.63103	
0.47371	0.53293	0.57287	0.33505					
GWA36	GWA36	Teaching others	0.51919	0.70927	0.43870	0.59064	0.54195	
0.52773	0.44131	0.85997	0.35000					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.46411	0.50746	0.41323	0.43154	0.63190	
0.43387	0.52385	0.59626	0.32949					
GWA38	GWA38	Coaching and developing others	0.47321	0.64448	0.42744	0.56416	0.58149	
0.50812	0.48841	0.78466	0.33547					
GWA39	GWA39	Providing consultation and advice to others	0.71233	0.62331	0.49048	0.60347	0.56547	
0.67265	0.62920	0.58531	0.52628					
GWA42	GWA42	Monitoring and controlling resources	0.30107	0.27763	0.24714	0.45484	0.45048	
0.38353	0.47660	0.33229	0.22242					
KN1	KN1	Administration and Management	0.59644	0.56535	0.46609	0.57624	0.69880	
0.62440	0.69193	0.59439	0.46381					
KN22	KN22	Therapy and Counseling	0.32951	0.48842	0.31411	0.56850	0.33186	
0.40801	0.27055	0.51346	0.27085					
SK2	SK2	Active listening	0.64449	0.62294	0.50812	0.81201	0.69130	
0.70290	0.60105	0.58337	0.49160					
SK5	SK5	Mathematics	0.51325	0.36341	0.36720	0.15854	0.25820	
0.28792	0.31373	0.23424	0.49681					
SK6	SK6	Science	0.54439	0.42229	0.34206	0.02685	0.15810	
0.14603	0.08467	0.25819	0.47184					
SK7	SK7	Critical thinking	0.90948	0.76021	0.68780	0.54018	0.63783	
0.67408	0.63558	0.57925	0.75042					
SK8	SK8	Active learning	1.00000	0.80413	0.70971	0.52952	0.60542	
0.64737	0.59588	0.58778	0.65568					
SK9	SK9	Learning strategies	0.80413	1.00000	0.71430	0.61218	0.62495	
0.65600	0.55423	0.80326	0.55904					
SK10	SK10	Monitoring	0.70971	0.71430	1.00000	0.47913	0.56605	
0.52602	0.48761	0.51875	0.57461					
SK11	SK11	Social Perceptiveness	0.52952	0.61218	0.47913	1.00000	0.67633	
0.75749	0.64237	0.64831	0.37318					
SK12	SK12	Coordination	0.60542	0.62495	0.56605	0.67633	1.00000	
0.65158	0.65738	0.61614	0.44785					
SK13	SK13	Persuasion	0.64737	0.65600	0.52602	0.75749	0.65158	
1.00000	0.85484	0.63814	0.48413					
SK14	SK14	Negotiation	0.59588	0.55423	0.48761	0.64237	0.65738	
0.85484	1.00000	0.52514	0.46248					
SK15	SK15	Instructing	0.58778	0.80326	0.51875	0.64831	0.61614	
0.63814	0.52514	1.00000	0.41673					
SK17	SK17	Problem identification	0.65568	0.55904	0.57461	0.37318	0.44785	
0.48413	0.46248	0.41673	1.00000					
SK18	SK18	Information gathering	0.81153	0.63647	0.57435	0.47120	0.49223	
0.57462	0.53069	0.45773	0.70585					
SK19	SK19	Information organization	0.73048	0.61278	0.60333	0.33398	0.39461	
0.43392	0.38839	0.37168	0.58389					
SK20	SK20	Synthesis/Reorganization	0.84556	0.71670	0.65176	0.46838	0.54010	
0.58232	0.54213	0.49058	0.56174					
SK22	SK22	Idea evaluation	0.87291	0.78111	0.71975	0.52576	0.64370	
0.66581	0.62807	0.57497	0.67911					
SK24	SK24	Solution appraisal	0.81525	0.74897	0.76647	0.45124	0.55327	
0.58218	0.53218	0.52855	0.75737					
SK37	SK37	Visioning	0.81502	0.74433	0.68758	0.49251	0.67624	
0.65031	0.63713	0.58515	0.65611					
SK38	SK38	Systems perceptions	0.76769	0.67839	0.65486	0.46066	0.66197	
0.59482	0.58517	0.53406	0.72235					
SK39	SK39	Identification of downstream consequences	0.80151	0.71039	0.67301	0.48074	0.65506	
0.66543	0.66529	0.55360	0.69719					
SK40	SK40	Identification of key causes	0.77597	0.70735	0.70385	0.53447	0.63803	
0.66376	0.63042	0.54241	0.75914					
SK41	SK41	Judgment and decision making	0.78890	0.67361	0.63840	0.54692	0.65975	
0.65616	0.63508	0.53357	0.72420					
SK42	SK42	Systems evaluation	0.77392	0.68103	0.64880	0.45010	0.62971	
0.61676	0.61996	0.54165	0.71053					
SK43	SK43	Time management	0.65361	0.69356	0.62493	0.65132	0.74917	
0.67199	0.64945	0.64367	0.49857					
SK46	SK46	Management of personnel resources	0.55734	0.62514	0.52641	0.53108	0.74716	
0.54596	0.60924	0.66405	0.43249					

Correlations

SK37	SK38	SK39	SK40	SK18	SK19	SK20	SK22	SK24
GWA1	GWA1	Getting information needed to do job	0.69483	0.56750	0.59105	0.58192	0.59342	
0.54461	0.54554	0.55561	0.56732					
GWA2	GWA2	Identifying objects, actions, and events	0.60039	0.48541	0.52743	0.52623	0.53009	
0.47216	0.52664	0.53307	0.52195					
GWA3	GWA3	Monitoring processes, materials, or surroundings	0.08097	0.02431	0.02989	0.14071	0.14518	
0.16578	0.32417	0.25576	0.21806					
GWA9	GWA9	Analyzing data or information	0.71929	0.57904	0.67879	0.65520	0.63127	
0.57707	0.59757	0.64080	0.60477					
GWA10	GWA10	Making decisions and solving problems	0.63767	0.47901	0.62485	0.70595	0.63540	
0.64108	0.65094	0.68921	0.68427					
GWA11	GWA11	Thinking creatively	0.32269	0.34011	0.53896	0.53955	0.41241	
0.46148	0.30703	0.38443	0.37718					
GWA12	GWA12	Updating and using job-relevant knowledge	0.64668	0.53221	0.62324	0.60945	0.59171	
0.56767	0.58229	0.61379	0.57932					
GWA13	GWA13	Developing objectives and strategies	0.57044	0.44681	0.62546	0.70351	0.59302	
0.65584	0.60488	0.69230	0.62713					
GWA15	GWA15	Organizing, planning, and prioritizing work	0.54612	0.46628	0.62232	0.66608	0.57055	
0.61431	0.56870	0.63699	0.60686					
GWA26	GWA26	Interpreting the meaning of information for others	0.66573	0.51619	0.63650	0.58028	0.51966	
0.51844	0.52511	0.55146	0.52206					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.41382	0.28281	0.43393	0.44812	0.38136	
0.42444	0.40086	0.44168	0.43958					
GWA30	GWA30	Assisting and caring for others	0.18293	0.07965	0.16040	0.17029	0.12217	

0.13344	0.12274	0.13142	0.19667					
GWA31	GWA31	Selling or influencing others	0.34580	0.19445	0.33390	0.40425	0.31274	
0.36473	0.31213	0.39919	0.39089					
GWA32	GWA32	Resolving conflicts and negotiating with others	0.36591	0.21875	0.33326	0.38582	0.30799	
0.36616	0.37776	0.42301	0.39954					
GWA34	GWA34	Coordinating the work and activities of others	0.35701	0.24398	0.39805	0.49257	0.39199	
0.51222	0.51575	0.53656	0.46104					
GWA35	GWA35	Developing and building teams	0.32670	0.23716	0.39383	0.49384	0.40247	
0.51571	0.49015	0.52291	0.44825					
GWA36	GWA36	Teaching others	0.39435	0.31781	0.44820	0.51319	0.44737	
0.49252	0.46626	0.48922	0.46259					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.32715	0.25518	0.40078	0.50147	0.41218	
0.52675	0.50434	0.54162	0.44981					
GWA38	GWA38	Coaching and developing others	0.34164	0.25667	0.40160	0.48405	0.41516	
0.48886	0.45919	0.48249	0.44532					
GWA39	GWA39	Providing consultation and advice to others	0.66322	0.50624	0.66982	0.69426	0.61715	
0.63812	0.60482	0.67522	0.63059					
GWA42	GWA42	Monitoring and controlling resources	0.23781	0.17606	0.29160	0.32066	0.26723	
0.29867	0.30932	0.36470	0.31314					
KN1	KN1	Administration and Management	0.53261	0.39639	0.56539	0.63058	0.54180	
0.65830	0.62827	0.68664	0.59634					
KN22	KN22	Therapy and Counseling	0.26611	0.16705	0.24073	0.29265	0.28999	
0.27689	0.24498	0.25214	0.30806					
SK2	SK2	Active listening	0.64262	0.49030	0.60422	0.60403	0.55340	
0.57055	0.56743	0.57760	0.60035					
SK5	SK5	Mathematics	0.56033	0.52371	0.48256	0.46378	0.49863	
0.44865	0.45030	0.51113	0.44309					
SK6	SK6	Science	0.47374	0.44724	0.43893	0.46643	0.48645	
0.39074	0.44021	0.45532	0.42779					
SK7	SK7	Critical thinking	0.83180	0.70577	0.80708	0.86778	0.83347	
0.82760	0.82086	0.84082	0.83144					
SK8	SK8	Active learning	0.81153	0.73048	0.84556	0.87291	0.81525	
0.81502	0.76769	0.80151	0.77597					
SK9	SK9	Learning strategies	0.63647	0.61278	0.71670	0.78111	0.74897	
0.74433	0.67839	0.71039	0.70735					
SK10	SK10	Monitoring	0.57435	0.60333	0.65176	0.71975	0.76647	
0.68758	0.65486	0.67301	0.70385					
SK11	SK11	Social Perceptiveness	0.47120	0.33398	0.46838	0.52576	0.45124	
0.49251	0.46066	0.48074	0.53447					
SK12	SK12	Coordination	0.49223	0.39461	0.54010	0.64370	0.55327	
0.67624	0.66197	0.65506	0.63803					
SK13	SK13	Persuasion	0.57462	0.43392	0.58232	0.66581	0.58218	
0.65031	0.59482	0.66543	0.66376					
SK14	SK14	Negotiation	0.53069	0.38839	0.54213	0.62807	0.53218	
0.63713	0.58517	0.66529	0.63042					
SK15	SK15	Instructing	0.45773	0.37168	0.49058	0.57497	0.52855	
0.58515	0.53406	0.55360	0.54241					
SK17	SK17	Problem identification	0.70585	0.58389	0.56174	0.67911	0.75737	
0.65611	0.72235	0.69719	0.75914					
SK18	SK18	Information gathering	1.00000	0.81818	0.79209	0.75907	0.74298	
0.69031	0.71147	0.72972	0.70804					
SK19	SK19	Information organization	0.81818	1.00000	0.81686	0.69962	0.70555	
0.61182	0.59627	0.62618	0.60034					
SK20	SK20	Synthesis/Reorganization	0.79209	0.81686	1.00000	0.82028	0.76366	
0.74436	0.67121	0.72441	0.68625					
SK22	SK22	Idea evaluation	0.75907	0.69962	0.82028	1.00000	0.85941	
0.85200	0.78566	0.84051	0.84739					
SK24	SK24	Solution appraisal	0.74298	0.70555	0.76366	0.85941	1.00000	
0.81661	0.76485	0.79544	0.84130					
SK37	SK37	Visioning	0.69031	0.61182	0.74436	0.85200	0.81661	
1.00000	0.86248	0.87294	0.83144					
SK38	SK38	Systems perceptions	0.71147	0.59627	0.67121	0.78566	0.76485	
0.86248	1.00000	0.89810	0.83498					
SK39	SK39	Identification of downstream consequences	0.72972	0.62618	0.72441	0.84051	0.79544	
0.87294	0.89810	1.00000	0.86497					
SK40	SK40	Identification of key causes	0.70804	0.60034	0.68625	0.84739	0.84130	
0.83144	0.83498	0.86497	1.00000					
SK41	SK41	Judgment and decision making	0.75425	0.60813	0.69621	0.82256	0.77980	
0.81684	0.82735	0.84676	0.85241					
SK42	SK42	Systems evaluation	0.72132	0.59823	0.68080	0.80104	0.77737	
0.85015	0.88643	0.89904	0.83124					
SK43	SK43	Time management	0.54350	0.45855	0.60036	0.70736	0.66016	
0.71413	0.66388	0.69112	0.70345					
SK46	SK46	Management of personnel resources	0.43498	0.34855	0.48183	0.61418	0.53539	
0.64662	0.62484	0.65603	0.58965					

Correlations

			SK41	SK42	SK43
SK46					
	GWA1	GWA1 Getting information needed to do job	0.57850	0.56661	0.43517
0.39567	GWA2	GWA2 Identifying objects, actions, and events	0.55019	0.54244	0.35011
0.37939	GWA3	GWA3 Monitoring processes, materials, or surroundings	0.19156	0.27934	0.07785
0.23058	GWA9	GWA9 Analyzing data or information	0.64172	0.64762	0.46413
0.45836	GWA10	GWA10 Making decisions and solving problems	0.70887	0.68477	0.57605
0.60594	GWA11	GWA11 Thinking creatively	0.35350	0.36272	0.41810
0.42586	GWA12	GWA12 Updating and using job-relevant knowledge	0.60382	0.61980	0.43520
0.42693	GWA13	GWA13 Developing objectives and strategies	0.64272	0.66068	0.63955
0.68607	GWA15	GWA15 Organizing, planning, and prioritizing work	0.61173	0.61209	0.66714
0.68004	GWA26	GWA26 Interpreting the meaning of information for others	0.58163	0.54256	0.51258
0.45775	GWA29	GWA29 Establishing and maintaining interpersonal relationships	0.47857	0.39879	0.57548
0.54480					

The FACTOR Procedure

Correlations

			SK41	SK42	SK43
SK46					
0.23422	GWA30	GWA30 Assisting and caring for others	0.25139	0.08061	0.31075
0.40784	GWA31	GWA31 Selling or influencing others	0.39301	0.34662	0.44237
0.55811	GWA32	GWA32 Resolving conflicts and negotiating with others	0.43696	0.40455	0.52807
0.83847	GWA34	GWA34 Coordinating the work and activities of others	0.50130	0.53589	0.64441
0.79243	GWA35	GWA35 Developing and building teams	0.48945	0.52586	0.59886
0.62823	GWA36	GWA36 Teaching others	0.47486	0.46737	0.55476
0.87225	GWA37	GWA37 Guiding, directing and motivating subordinates	0.47083	0.55252	0.64551
0.71130	GWA38	GWA38 Coaching and developing others	0.46353	0.46708	0.57061
0.56641	GWA39	GWA39 Providing consultation and advice to others	0.65911	0.65617	0.57142
0.56907	GWA42	GWA42 Monitoring and controlling resources	0.32174	0.35492	0.46123
0.80702	KN1	KN1 Administration and Management	0.65318	0.67684	0.73584
0.24018	KN22	KN22 Therapy and Counseling	0.33526	0.21495	0.30249
0.48033	SK2	SK2 Active listening	0.64414	0.55608	0.62554
0.27520	SK5	SK5 Mathematics	0.44437	0.51875	0.28265
0.18152	SK6	SK6 Science	0.40455	0.43741	0.17467
0.57921	SK7	SK7 Critical thinking	0.86832	0.81424	0.65944
0.55734	SK8	SK8 Active learning	0.78890	0.77392	0.65361
0.62514	SK9	SK9 Learning strategies	0.67361	0.68103	0.69356
0.52641	SK10	SK10 Monitoring	0.63840	0.64880	0.62493
0.53108	SK11	SK11 Social Perceptiveness	0.54692	0.45010	0.65132
0.74716	SK12	SK12 Coordination	0.65975	0.62971	0.74917
0.54596	SK13	SK13 Persuasion	0.65616	0.61676	0.67199
0.60924	SK14	SK14 Negotiation	0.63508	0.61996	0.64945
0.66405	SK15	SK15 Instructing	0.53357	0.54165	0.64367
0.43249	SK17	SK17 Problem identification	0.72420	0.71053	0.49857
0.43498	SK18	SK18 Information gathering	0.75425	0.72132	0.54350
0.34855	SK19	SK19 Information organization	0.60813	0.59823	0.45855
0.48183	SK20	SK20 Synthesis/Reorganization	0.69621	0.68080	0.60036
0.61418	SK22	SK22 Idea evaluation	0.82256	0.80104	0.70736
0.53539	SK24	SK24 Solution appraisal	0.77980	0.77737	0.66016
0.64662	SK37	SK37 Visioning	0.81684	0.85015	0.71413
0.62484	SK38	SK38 Systems perceptions	0.82735	0.88643	0.66388
0.65603	SK39	SK39 Identification of downstream consequences	0.84676	0.89904	0.69112
0.58965	SK40	SK40 Identification of key causes	0.85241	0.83124	0.70345
0.59546	SK41	SK41 Judgment and decision making	1.00000	0.81770	0.68364
0.66492	SK42	SK42 Systems evaluation	0.81770	1.00000	0.67994
0.77217	SK43	SK43 Time management	0.68364	0.67994	1.00000
1.00000	SK46	SK46 Management of personnel resources	0.59546	0.66492	0.77217

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-IMPORTANCE

SAS OUTPUT

The FACTOR Procedure
Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 49 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	26.5304440	21.6776793	0.5414	0.5414
2	4.8527647	2.3943016	0.0990	0.6405
3	2.4584631	0.2327459	0.0502	0.6906
4	2.2257172	0.3959394	0.0454	0.7361
5	1.8297778	0.5426420	0.0373	0.7734
6	1.2871358	0.3795432	0.0263	0.7997
7	0.9075926	0.1307983	0.0185	0.8182
8	0.7767943	0.1431454	0.0159	0.8341
9	0.6336489	0.0539980	0.0129	0.8470
10	0.5796509	0.0273137	0.0118	0.8588
11	0.5523371	0.1067997	0.0113	0.8701
12	0.4455374	0.0208411	0.0091	0.8792

13	0.4246963	0.0435723	0.0087	0.8878
14	0.3811240	0.0294943	0.0078	0.8956
15	0.3516297	0.0678996	0.0072	0.9028
16	0.2837301	0.0042232	0.0058	0.9086
17	0.2795068	0.0209780	0.0057	0.9143
18	0.2585288	0.0010262	0.0053	0.9196
19	0.2575026	0.0188330	0.0053	0.9248
20	0.2386696	0.0231577	0.0049	0.9297
21	0.2155119	0.0065236	0.0044	0.9341
22	0.2089883	0.0111206	0.0043	0.9384
23	0.1978677	0.0207021	0.0040	0.9424
24	0.1771656	0.0043024	0.0036	0.9460
25	0.1728631	0.0059344	0.0035	0.9495
26	0.1669288	0.0147846	0.0034	0.9530
27	0.1521441	0.0035505	0.0031	0.9561
28	0.1485937	0.0046963	0.0030	0.9591
29	0.1438974	0.0095616	0.0029	0.9620
30	0.1343358	0.0053859	0.0027	0.9648
31	0.1289500	0.0035818	0.0026	0.9674
32	0.1253681	0.0045006	0.0026	0.9700
33	0.1208676	0.0024184	0.0025	0.9724
34	0.1184492	0.0103786	0.0024	0.9748
35	0.1080705	0.0059815	0.0022	0.9770
36	0.1020890	0.0011377	0.0021	0.9791
37	0.1009514	0.0037022	0.0021	0.9812
38	0.0972492	0.0033989	0.0020	0.9832
39	0.0938503	0.0036705	0.0019	0.9851
40	0.0901798	0.0050958	0.0018	0.9869
41	0.0850840	0.0034396	0.0017	0.9887
42	0.0816444	0.0010786	0.0017	0.9903
43	0.0805658	0.0055907	0.0016	0.9920
44	0.0749751	0.0042227	0.0015	0.9935
45	0.0707524	0.0026112	0.0014	0.9950
46	0.0681412	0.0027546	0.0014	0.9963
47	0.0653866	0.0050278	0.0013	0.9977
48	0.0603587	0.0068398	0.0012	0.9989
49	0.0535189		0.0011	1.0000

6 factors will be retained by the MINEIGEN criterion.

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-IMPORTANCE

The FACTOR Procedure
Initial Factor Method: Principal Components

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
26.530444	4.852765	2.458463	2.225717	1.829778	1.287136

Final Community Estimates: Total = 39.184302

	GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29	0.68139527 0.88043589	0.77010209 0.79426805	0.72030769 0.74435243	0.85518532	0.80832425	0.68528181	0.77737011	0.82762685	0.79343717	0.80359468
SK2	GWA32	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA42	KN1	KN22
	0.81852931 0.77931110	0.85409781 0.44475440	0.85577988 0.68070252	0.83170593	0.89256103	0.86646974	0.82786654	0.68851554	0.83953621	0.74576462
SK18	SK7	SK8	SK9	SK10	SK11	SK12	SK13	SK14	SK15	SK17
	0.90122853 0.81999842	0.88517317 0.72683774	0.87530584 0.84895895	0.64639173	0.86298194	0.74361078	0.80008437	0.78451340	0.80269227	0.73766631
SK43	SK22	SK24	SK37	SK38	SK39	SK40	SK41	SK42		
	0.76958172	0.87885226 0.87033538	0.83485161	0.85401638	0.86044629	0.87792656	0.84574820	0.83058979	0.85923462	

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF ABSTRACT-IMPORTANCE

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5
6					
0.03676	1	0.67209	0.48977	0.38088	0.29609
0.05923	2	-0.59270	0.54689	-0.23310	0.41598
0.26895	3	-0.22652	0.53884	0.38160	-0.28106
0.08129	4	-0.37610	-0.34808	0.80613	0.17820
0.30776	5	-0.05164	0.13096	0.04471	-0.69816
0.90636	6	0.03955	-0.17998	-0.05590	0.37564

Rotated Factor Pattern

Factor4	Factor5	Factor6	Factor1	Factor2	Factor3
GWA1	GWA1 Getting information needed to do job		0.45339	0.13741	0.65457
0.16075	0.05005	0.01240			
GWA2	GWA2 Identifying objects, actions, and events		0.36761	0.18015	0.74016
0.07906	0.03158	0.21777			
GWA3	GWA3 Monitoring processes, materials, or surroundings		0.07347	0.27005	0.35857
0.25854	0.07957	0.66350			
GWA9	GWA9 Analyzing data or information		0.43931	0.24957	0.75157
0.17507	0.06388	-0.01809			
GWA10	GWA10 Making decisions and solving problems		0.45389	0.42066	0.59386
0.23013	0.11320	0.08308			
GWA11	GWA11 Thinking creatively		0.18879	0.45801	0.41105
0.07070	0.08382	-0.50880			
GWA12	GWA12 Updating and using job-relevant knowledge		0.39654	0.23381	0.69945
0.15754	0.22667	-0.00607			
GWA13	GWA13 Developing objectives and strategies		0.38058	0.61567	0.42980
0.26446	0.18023	-0.12877			
GWA15	GWA15 Organizing, planning, and prioritizing work		0.36484	0.58957	0.42380
0.30976	0.13302	-0.13961			
GWA26	GWA26 Interpreting the meaning of information for others		0.32096	0.25713	0.58981
0.33076	0.39983	-0.13158			
GWA29	GWA29 Establishing and maintaining interpersonal relationships		0.13969	0.42857	0.25844
0.58403	0.51168	-0.08687			
GWA30	GWA30 Assisting and caring for others		-0.04791	0.12203	0.09157
0.31871	0.81334	0.07476			
GWA31	GWA31 Selling or influencing others		0.10383	0.33117	0.24992
0.70710	0.19584	-0.15196			
GWA32	GWA32 Resolving conflicts and negotiating with others		0.10824	0.47918	0.21569
0.70451	0.18312	0.02836			
GWA34	GWA34 Coordinating the work and activities of others		0.22262	0.82846	0.17728
0.23687	0.12002	0.12750			
GWA35	GWA35 Developing and building teams		0.18860	0.84705	0.18651
0.20689	0.15745	0.01833			
GWA36	GWA36 Teaching others		0.24036	0.62542	0.20926
0.02143	0.57057	-0.11392			
GWA37	GWA37 Guiding, directing and motivating subordinates		0.24946	0.89336	0.11137
0.11838	0.06219	0.04417			
GWA38	GWA38 Coaching and developing others		0.19337	0.75093	0.15206
0.06973	0.48492	-0.04531			
GWA39	GWA39 Providing consultation and advice to others		0.40142	0.40125	0.54226
0.36179	0.25450	-0.12657			
GWA42	GWA42 Monitoring and controlling resources		0.01023	0.62041	0.31143
0.45328	-0.02427	0.02152			
KN1	KN1 Administration and Management		0.41084	0.69707	0.19634
0.37455	0.07738	-0.00350			
KN22	KN22 Therapy and Counseling		0.16118	0.08081	0.06679
0.08915	0.83423	0.06999			
SK2	SK2 Active listening		0.49403	0.13347	0.19227
0.51985	0.45265	-0.07295			
SK5	SK5 Mathematics		0.51725	0.03227	0.38268
0.05939	-0.16027	0.02238			
SK6	SK6 Science		0.47128	-0.02385	0.52274
0.37590	0.09860	0.18372			
SK7	SK7 Critical thinking		0.79882	0.22153	0.39200
0.16109	0.18551	-0.00095			
SK8	SK8 Active learning		0.77955	0.22630	0.38613
0.08760	0.19667	-0.17553			
SK9	SK9 Learning strategies		0.68495	0.35449	0.15003
0.02513	0.46585	-0.20080			
SK10	SK10 Monitoring		0.71828	0.24844	0.12688
0.00407	0.20596	-0.10103			
SK11	SK11 Social Perceptiveness		0.33591	0.26662	0.06168
0.57811	0.57783	-0.08463			
SK12	SK12 Coordination		0.53585	0.51382	-0.02493
0.34488	0.25833	0.07847			
SK13	SK13 Persuasion		0.54952	0.24892	0.07291
0.56905	0.31138	-0.10036			
SK14	SK14 Negotiation		0.51575	0.36353	0.05165
0.61340	0.07727	-0.03822			
SK15	SK15 Instructing		0.42211	0.51327	0.06814
0.03003	0.58995	-0.08647			
SK17	SK17 Problem identification		0.73523	0.07078	0.28628
0.12148	0.10954	0.28875			
SK18	SK18 Information gathering		0.74011	0.02377	0.45217
0.20571	0.12851	-0.09151			
SK19	SK19 Information organization		0.71304	-0.00065	0.37091
0.01951	0.06280	-0.27662			
SK20	SK20 Synthesis/Reorganization		0.72260	0.17681	0.38491
0.10162	0.11596	-0.35159			
SK22	SK22 Idea evaluation		0.81644	0.29673	0.26389
0.11533	0.12777	-0.15799			
SK24	SK24 Solution appraisal		0.84239	0.18688	0.25767
0.04982	0.12486	-0.07643			
SK37	SK37 Visioning		0.83168	0.34567	0.13797
0.11759	0.09000	-0.04329			
SK38	SK38 Systems perceptions		0.81963	0.30471	0.18335
0.12356	0.07480	0.20331			
SK39	SK39 Identification of downstream consequences		0.82077	0.33884	0.21868
0.17521	0.04825	0.09279			
SK40	SK40 Identification of key causes		0.82993	0.23486	0.18723
0.19564	0.13611	0.09976			
SK41	SK41 Judgment and decision making		0.78910	0.23758	0.23321
0.24529	0.15701	0.11072			
SK42	SK42 Systems evaluation		0.80175	0.35157	0.23149
0.14436	0.00882	0.13538			
SK43	SK43 Time management		0.61415	0.51533	-0.02560
0.28901	0.19537	-0.06699			
SK46	SK46 Management of personnel resources		0.44767	0.79399	0.02340
0.15804	0.10012	0.06298			

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
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14.136630 8.871795 5.924508 4.504101 4.271187 1.476082

Final Communality Estimates: Total = 39.184302

	GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29	GWA30	GWA31								
0.68139527	0.77010209	0.72030769	0.85518532	0.80832425	0.68528181	0.77737011	0.82762685	0.79343717	0.80359468	
0.88043589	0.79426805	0.74435243								
	GWA32	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA42	KN1	KN22
SK2	SK5	SK6								
0.81852931	0.85409781	0.85577988	0.83170593	0.89256103	0.86646974	0.82786654	0.68851554	0.83953621	0.74576462	
0.77931110	0.44475440	0.68070252								
	SK7	SK8	SK9	SK10	SK11	SK12	SK13	SK14	SK15	SK17
SK18	SK19	SK20								
0.90122853	0.88517317	0.87530584	0.64639173	0.86298194	0.74361078	0.80008437	0.78451340	0.80269227	0.73766631	
0.81999842	0.72683774	0.84895895								
	SK22	SK24	SK37	SK38	SK39	SK40	SK41	SK42		
SK43	SK46									
0.76958172	0.87885226	0.83485161	0.85401638	0.86044629	0.87792656	0.84574820	0.83058979	0.85923462		
	0.87033538									

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GWA16	GWA17	GWA18	GWA19	GWA4	GWA5	GWA14
GWA4	GWA4	Inspecting equipment, structures or materials		1.00000	0.21424	-0.12566
0.31608	0.37698	0.45656	-0.19377			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.21424	1.00000	0.45231
0.12851	-0.22864	-0.14142	0.22413			
GWA14	GWA14	Scheduling work and activities		-0.12566	0.45231	1.00000
0.31790	-0.57415	-0.44439	0.37385			
GWA16	GWA16	Performing general physical activities		0.31608	-0.12851	-0.31790
1.00000	0.60731	0.43672	-0.55394			
GWA17	GWA17	Handling and moving objects		0.37698	-0.22864	-0.57415
0.60731	1.00000	0.70393	-0.43569			
GWA18	GWA18	Controlling machines and processes		0.45656	-0.14142	-0.44439
0.43672	0.70393	1.00000	-0.35525			
GWA19	GWA19	Interacting with computers		-0.19377	0.22413	0.37385
0.55394	-0.43569	-0.35525	1.00000			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		0.16938	0.02480	-0.10972
0.37589	0.12199	0.14111	-0.24302			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.33847	0.38534	0.09743
0.05281	0.06928	0.09258	0.18807			
GWA22	GWA22	Implementing ideas, programs, systems or products		0.14552	0.44885	0.36145
0.18876	-0.11771	-0.09986	0.23368			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.58812	-0.08494	-0.32936
0.46118	0.48697	0.57403	-0.34321			
GWA24	GWA24	Repairing and maintaining electronic equipment		0.47363	0.03018	-0.13321
0.09147	0.23942	0.25892	0.07124			
GWA25	GWA25	Documenting/recording information		-0.07197	0.25161	0.42773
0.43654	-0.50170	-0.33451	0.56735			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.11051	0.42650	0.68315
0.33893	-0.60517	-0.43244	0.50699			
GWA28	GWA28	Communicating with persons outside the organizations		-0.34125	0.26336	0.62635
0.41590	-0.64919	-0.62226	0.44881			
GWA40	GWA40	Performing administrative activities		-0.10092	0.34434	0.64939
0.42787	-0.53832	-0.40050	0.55483			
GWA41	GWA41	Staffing organizational units		-0.05531	0.36207	0.67942
0.22906	-0.38754	-0.29216	0.23214			
KN2	KN2	Clerical		-0.27975	0.00245	0.30418
0.40161	-0.38091	-0.34420	0.55450			
KN3	KN3	Economics and Accounting		-0.26172	0.32850	0.51826
0.42530	-0.56227	-0.47676	0.41446			
KN4	KN4	Sales and Marketing		-0.20696	0.23241	0.37485
0.23082	-0.35040	-0.33256	0.20830			
KN5	KN5	Customer and Personal Service		-0.27615	0.02650	0.33711
0.07228	-0.19546	-0.33108	0.16905			
KN6	KN6	Personnel and Human Resources		-0.08390	0.32076	0.67152
0.29477	-0.48201	-0.38259	0.25489			
KN7	KN7	Production and Processing		0.34962	0.03416	-0.24999
0.12694	0.38239	0.45758	-0.18347			
KN8	KN8	Food Production		0.02435	0.10335	0.11036
0.06093	-0.05847	-0.03638	-0.06377			
KN9	KN9	Computers and Electronics		0.01862	0.13694	0.18141
0.43850	-0.25283	-0.19155	0.71691			
KN10	KN10	Engineering and Technology		0.56550	0.13336	-0.19200
0.25316	0.29875	0.44939	-0.06824			
KN11	KN11	Design		0.29840	0.22278	-0.11216
0.04322	0.18265	0.13423	0.02771			
KN12	KN12	Building and Construction		0.26674	0.03898	-0.21430
0.42714	0.33558	0.24475	-0.28630			
KN13	KN13	Mechanical		0.60217	-0.07774	-0.40146
0.52959	0.58906	0.64519	-0.41324			
KN14	KN14	Mathematics		-0.04969	0.38220	0.31830
0.42108	-0.43587	-0.24981	0.54935			
KN16	KN16	Chemistry		0.19894	0.11484	-0.02075
0.09591	0.12616	0.26490	-0.04150			
KN17	KN17	Biology		-0.06598	0.10776	0.18398
0.02688	-0.09548	-0.08132	0.04008			
KN20	KN20	Geography		-0.10571	0.22433	0.16945
0.06580	-0.27470	-0.30115	0.14145			
KN21	KN21	Medicine and Dentistry		-0.07623	0.01168	0.18080
0.06121	-0.04609	-0.08998	0.06008			
KN23	KN23	Education and Training		-0.17182	0.24892	0.59603
0.25503	-0.46776	-0.42148	0.31813			

KN29	KN29	Public Safety and Security		0.26287	0.16838	0.11018
0.17751		-0.07029	-0.02598	0.02472		
KN31	KN31	Telecommunications		-0.07795	0.16233	0.29528
0.26724		-0.32484	-0.28616	0.36188		
KN32	KN32	Communications and Media		-0.23733	0.20649	0.47279
0.47471		-0.52354	-0.41455	0.50936		
KN33	KN33	Transportation		0.08614	0.13529	0.06610
0.12610		-0.04494	-0.07997	-0.08739		
SK3	SK3	Writing		-0.17203	0.29711	0.53296
0.59014		-0.67660	-0.53625	0.57556		
SK4	SK4	Speaking		-0.27011	0.29007	0.66739
0.43600		-0.69485	-0.61001	0.45867		
SK27	SK27	Equipment selection		0.51513	0.15666	-0.22704
0.36663		0.52942	0.48412	-0.25665		
SK28	SK28	Installation		0.51764	-0.03135	-0.30888
0.41314		0.49193	0.42634	-0.24415		
SK29	SK29	Programming		0.02040	0.21912	0.16731
0.33427		-0.22160	-0.19106	0.57967		
SK30	SK30	Testing		0.61629	0.13557	-0.14106
0.05815		0.19156	0.31278	0.03119		
SK31	SK31	Operation monitoring		0.56236	-0.05011	-0.31965
0.23988		0.41484	0.64068	-0.17435		
SK32	SK32	Operation and control		0.41891	-0.12294	-0.38497
0.32913		0.56669	0.73987	-0.27145		
SK33	SK33	Product inspection		0.48685	0.15258	-0.11391
0.01063		0.23806	0.25868	-0.03035		
SK34	SK34	Equipment maintenance		0.60564	-0.09600	-0.35102
0.44617		0.51475	0.55994	-0.36017		
SK35	SK35	Troubleshooting		0.68934	0.07151	-0.18751
0.27811		0.31935	0.37035	-0.13778		
SK36	SK36	Repairing		0.57610	-0.07915	-0.32705
0.42368		0.48252	0.45400	-0.34598		
SK44	SK44	Management of financial resources		-0.16880	0.42631	0.62922
0.41045		-0.54012	-0.48656	0.31561		
SK45	SK45	Management of material resources		0.14133	0.47428	0.56900
0.14953		-0.27058	-0.26265	0.17411		

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GWA23	GWA24	GWA25	GWA27	GWA20	GWA21	GWA22
GWA4	GWA4	Inspecting equipment, structures or materials		0.16938	0.33847	0.14552
0.58812		0.47363	-0.07197	-0.11051		
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.02480	0.38534	0.44885
0.08494		0.03018	0.25161	0.42650		
GWA14	GWA14	Scheduling work and activities		-0.10972	0.09743	0.36145
0.32936		-0.13321	0.42773	0.68315		
GWA16	GWA16	Performing general physical activities		0.37589	-0.05281	-0.18876
0.46118		0.09147	-0.43654	-0.33893		
GWA17	GWA17	Handling and moving objects		0.12199	0.06928	-0.11771
0.48697		0.23942	-0.50170	-0.60517		
GWA18	GWA18	Controlling machines and processes		0.14111	0.09258	-0.09986
0.57403		0.25892	-0.33451	-0.43244		
GWA19	GWA19	Interacting with computers		-0.24302	0.18807	0.23368
0.34321		0.07124	0.56735	0.50699		
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		1.00000	-0.09112	-0.20158
0.33317		0.08379	-0.10058	-0.02466		
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		-0.09112	1.00000	0.45163
0.06431		0.19099	0.02352	0.10901		
GWA22	GWA22	Implementing ideas, programs, systems or products		-0.20158	0.45163	1.00000
0.09140		0.12799	0.12548	0.28764		
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.33317	0.06431	-0.09140
1.00000		0.44674	-0.24859	-0.31147		
GWA24	GWA24	Repairing and maintaining electronic equipment		0.08379	0.19099	0.12799
0.44674		1.00000	0.01939	-0.04019		
GWA25	GWA25	Documenting/recording information		-0.10058	0.02352	0.12548
0.24859		0.01939	1.00000	0.57692		
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.02466	0.10901	0.28764
0.31147		-0.04019	0.57692	1.00000		
GWA28	GWA28	Communicating with persons outside the organizations		-0.06719	-0.03257	0.18967
0.45284		-0.15263	0.54943	0.59225		
GWA40	GWA40	Performing administrative activities		-0.11633	-0.01093	0.20697
0.28026		-0.04641	0.78136	0.66035		
GWA41	GWA41	Staffing organizational units		-0.07696	0.01904	0.27767
0.20018		-0.12287	0.23836	0.49432		
KN2	KN2	Clerical		-0.13534	-0.18217	-0.08173
0.27643		-0.07002	0.68340	0.39203		
KN3	KN3	Economics and Accounting		-0.10751	-0.03279	0.11950
0.33474		-0.18048	0.41849	0.44920		
KN4	KN4	Sales and Marketing		-0.01001	0.02647	0.10478
0.21986		-0.12123	0.17962	0.25314		
KN5	KN5	Customer and Personal Service		-0.01756	-0.16617	-0.02702
0.26014		-0.07729	0.20747	0.21343		
KN6	KN6	Personnel and Human Resources		-0.06358	-0.02398	0.23912
0.26101		-0.13419	0.30317	0.54447		
KN7	KN7	Production and Processing		-0.07848	0.24192	0.04196
0.24398		0.03173	-0.19310	-0.27091		
KN8	KN8	Food Production		0.06740	-0.03677	0.03598
0.03739		-0.10126	0.07592	0.05120		
KN9	KN9	Computers and Electronics		-0.14610	0.20965	0.18910
0.13885		0.48513	0.42269	0.34136		
KN10	KN10	Engineering and Technology		0.14786	0.50372	0.12898
0.52163		0.46278	-0.14568	-0.10664		
KN11	KN11	Design		-0.07683	0.73657	0.26124
0.13653		0.23762	-0.18388	-0.12363		
KN12	KN12	Building and Construction		0.12360	0.29882	0.09553
0.27832		0.09305	-0.39979	-0.25703		
KN13	KN13	Mechanical		0.30898	0.15321	-0.05313
0.80643		0.43243	-0.38991	-0.39267		

KN14	KN14	Mathematics			-0.16058	0.27048	0.20657	-
0.21559		0.01092	0.52324	0.42338				
KN16	KN16	Chemistry			-0.02207	0.08746	0.09344	
0.09491		0.04586	0.07547	0.00347				
KN17	KN17	Biology			-0.06338	-0.02042	0.14024	-
0.17844		-0.09924	0.21921	0.16543				
KN20	KN20	Geography			0.38828	-0.00265	-0.05986	-
0.13528		-0.08322	0.21898	0.23388				
KN21	KN21	Medicine and Dentistry			-0.04279	-0.10060	0.07475	-
0.14804		-0.02539	0.21967	0.20700				
KN23	KN23	Education and Training			-0.07842	0.05943	0.28657	-
0.28227		-0.06546	0.32217	0.53175				
KN29	KN29	Public Safety and Security			0.36355	0.03834	-0.00185	-
0.08796		0.12436	0.18661	0.26019				
KN31	KN31	Telecommunications			0.11372	0.00363	0.02560	-
0.16913		0.26821	0.32447	0.39090				
KN32	KN32	Communications and Media			-0.08755	0.08397	0.20076	-
0.34413		-0.06523	0.40552	0.54231				
KN33	KN33	Transportation			0.63836	-0.10549	-0.16164	-
0.09319		0.00958	0.08922	0.14592				
SK3	SK3	Writing			-0.17250	0.08878	0.25352	-
0.38809		-0.09248	0.75619	0.65865				
SK4	SK4	Speaking			-0.06424	0.01064	0.20380	-
0.43664		-0.14124	0.56067	0.72960				
SK27	SK27	Equipment selection			0.07890	0.40663	0.21826	-
0.47101		0.33560	-0.34324	-0.27612				
SK28	SK28	Installation			0.09261	0.23098	0.12431	-
0.61986		0.54121	-0.33860	-0.32480				
SK29	SK29	Programming			-0.16230	0.33403	0.30733	-
0.18006		0.10747	0.26921	0.28860				
SK30	SK30	Testing			0.01986	0.33217	0.23174	-
0.45678		0.57992	0.05051	-0.05382				
SK31	SK31	Operation monitoring			0.25346	0.08976	-0.05545	-
0.58781		0.42569	-0.08873	-0.17939				
SK32	SK32	Operation and control			0.28474	0.03133	-0.14177	-
0.53775		0.27243	-0.25982	-0.31975				
SK33	SK33	Product inspection			-0.16316	0.33761	0.20359	-
0.21983		0.16596	-0.05440	-0.15599				
SK34	SK34	Equipment maintenance			0.33683	0.02925	-0.05665	-
0.82569		0.51525	-0.25422	-0.30771				
SK35	SK35	Troubleshooting			0.24712	0.23518	0.07270	-
0.69728		0.63891	-0.10854	-0.12957				
SK36	SK36	Repairing			0.24738	0.08194	-0.01246	-
0.80090		0.56513	-0.29409	-0.33281				
SK44	SK44	Management of financial resources			-0.12548	0.09151	0.29706	-
0.33674		-0.15406	0.35765	0.51454				
SK45	SK45	Management of material resources			-0.02231	0.28979	0.37926	-
0.13780		-0.01546	0.21720	0.43855				

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					GWA28	GWA40	GWA41	
KN2	KN3	KN4	KN5					
GWA4	GWA4	Inspecting equipment, structures or materials			-0.34125	-0.10092	-0.05531	-
0.27975		-0.26172	-0.20696	-0.27615				
GWA5	GWA5	Estimating the characteristics of materials, products, events or information			0.26336	0.34434	0.36207	
0.00245		0.32850	0.23241	0.02650				
GWA14	GWA14	Scheduling work and activities			0.62635	0.64939	0.67942	
0.30418		0.51826	0.37485	0.33711				
GWA16	GWA16	Performing general physical activities			-0.41590	-0.42787	-0.22906	-
0.40161		-0.42530	-0.23082	-0.07228				
GWA17	GWA17	Handling and moving objects			-0.64919	-0.53832	-0.38754	-
0.38091		-0.56227	-0.35040	-0.19546				
GWA18	GWA18	Controlling machines and processes			-0.62226	-0.40050	-0.29216	-
0.34420		-0.47676	-0.33256	-0.33108				
GWA19	GWA19	Interacting with computers			0.44881	0.55483	0.23214	
0.55450		0.41446	0.20830	0.16905				
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment			-0.06719	-0.11633	-0.07696	-
0.13534		-0.10751	-0.01001	-0.01756				
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment			-0.03257	-0.01093	0.01904	-
0.18217		-0.03279	0.02647	-0.16617				
GWA22	GWA22	Implementing ideas, programs, systems or products			0.18967	0.20697	0.27767	-
0.08173		0.11950	0.10478	-0.02702				
GWA23	GWA23	Repairing and maintaining mechanical equipment			-0.45284	-0.28026	-0.20018	-
0.27643		-0.33474	-0.21986	-0.26014				
GWA24	GWA24	Repairing and maintaining electronic equipment			-0.15263	-0.04641	-0.12287	-
0.07002		-0.18048	-0.12123	-0.07729				
GWA25	GWA25	Documenting/recording information			0.54943	0.78136	0.23836	
0.68340		0.41849	0.17962	0.20747				
GWA27	GWA27	Communicating with supervisors, peers or subordinates			0.59225	0.66035	0.49432	
0.39203		0.44920	0.25314	0.21343				
GWA28	GWA28	Communicating with persons outside the organizations			1.00000	0.63192	0.34727	
0.45069		0.54572	0.53852	0.57298				
GWA40	GWA40	Performing administrative activities			0.63192	1.00000	0.51584	
0.66916		0.62242	0.35378	0.33726				
GWA41	GWA41	Staffing organizational units			0.34727	0.51584	1.00000	
0.15097		0.45019	0.33466	0.19198				
KN2	KN2	Clerical			0.45069	0.66916	0.15097	
1.00000		0.44471	0.18645	0.32343				
KN3	KN3	Economics and Accounting			0.54572	0.62242	0.45019	
0.44471		1.00000	0.52220	0.29342				
KN4	KN4	Sales and Marketing			0.53852	0.35378	0.33466	
0.18645		0.52220	1.00000	0.45189				
KN5	KN5	Customer and Personal Service			0.57298	0.33726	0.19198	
0.32343		0.29342	0.45189	1.00000				
KN6	KN6	Personnel and Human Resources			0.39942	0.51505	0.80526	
0.23720		0.49276	0.29551	0.21542				
KN7	KN7	Production and Processing			-0.47142	-0.21958	-0.07884	-
0.25401		-0.15245	-0.10754	-0.32613				
KN8	KN8	Food Production			0.05994	0.06371	0.12851	-
0.02801		0.05012	0.07337	0.01607				
KN9	KN9	Computers and Electronics			0.26497	0.32562	0.04736	
0.43259		0.22605	0.05390	0.03434				
KN10	KN10	Engineering and Technology			-0.38204	-0.24753	-0.16886	-
0.31249		-0.24596	-0.22281	-0.37396				

KN11	KN11	Design			-0.19206	-0.21940	-0.10480	-
0.27472		-0.09889	-0.04449	-0.20497				
KN12	KN12	Building and Construction			-0.32249	-0.35595	-0.11612	-
0.38282		-0.15777	-0.13701	-0.27165				
KN13	KN13	Mechanical			-0.58301	-0.41388	-0.24379	-
0.39615		-0.38650	-0.27204	-0.33576				
KN14	KN14	Mathematics			0.33591	0.48284	0.21734	-
0.35288		0.57101	0.24478	0.05635				
KN16	KN16	Chemistry			-0.06932	-0.04389	-0.07115	-
0.10609		-0.19555	-0.13491	-0.08831				
KN17	KN17	Biology			0.22188	0.11120	0.03606	-
0.02141		-0.05835	-0.03286	0.09242				
KN20	KN20	Geography			0.31313	0.18447	0.05982	-
0.16948		0.20112	0.19133	0.17157				
KN21	KN21	Medicine and Dentistry			0.27600	0.15493	0.01276	-
0.12390		-0.05201	-0.03345	0.28278				
KN23	KN23	Education and Training			0.52771	0.39493	0.39736	-
0.21304		0.29511	0.26831	0.33217				
KN29	KN29	Public Safety and Security			0.15538	0.13294	0.05774	-
0.03346		0.03644	-0.01101	0.11584				
KN31	KN31	Telecommunications			0.42628	0.34735	0.12516	-
0.37111		0.28505	0.22205	0.22871				
KN32	KN32	Communications and Media			0.55496	0.43880	0.32254	-
0.38641		0.36223	0.36557	0.20291				
KN33	KN33	Transportation			0.10195	0.09112	0.00429	-
0.07342		0.05927	0.07313	0.13351				
SK3	SK3	Writing			0.63445	0.65583	0.32107	-
0.53897		0.46418	0.23218	0.14584				
SK4	SK4	Speaking			0.81255	0.59674	0.38158	-
0.42861		0.49438	0.41044	0.42711				
SK27	SK27	Equipment selection			-0.46640	-0.39796	-0.15279	-
0.43149		-0.36634	-0.25381	-0.36746				
SK28	SK28	Installation			-0.44074	-0.34345	-0.18333	-
0.34713		-0.31740	-0.20829	-0.27807				
SK29	SK29	Programming			0.16358	0.16684	0.05428	-
0.13590		0.10934	0.00823	-0.06697				
SK30	SK30	Testing			-0.22006	-0.10874	-0.13186	-
0.18665		-0.21931	-0.20707	-0.29682				
SK31	SK31	Operation monitoring			-0.47961	-0.23175	-0.21682	-
0.19755		-0.38531	-0.33465	-0.33909				
SK32	SK32	Operation and control			-0.57220	-0.33855	-0.25535	-
0.23072		-0.43885	-0.35387	-0.33787				
SK33	SK33	Product inspection			-0.29187	-0.09458	-0.02446	-
0.11552		-0.09593	-0.13941	-0.32797				
SK34	SK34	Equipment maintenance			-0.50137	-0.30548	-0.20239	-
0.28491		-0.37748	-0.26948	-0.26525				
SK35	SK35	Troubleshooting			-0.33068	-0.17080	-0.12910	-
0.23544		-0.24265	-0.20383	-0.26711				
SK36	SK36	Repairing			-0.44711	-0.31576	-0.20164	-
0.31373		-0.32520	-0.21940	-0.28003				
SK44	SK44	Management of financial resources			0.54298	0.57163	0.59457	-
0.27262		0.75534	0.46252	0.24168				
SK45	SK45	Management of material resources			0.32791	0.37666	0.47592	-
0.08726		0.34691	0.28716	0.14266				

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KN9	KN10	KN11	KN12	KN6	KN7	KN8
GWA4	GWA4	Inspecting equipment, structures or materials		-0.08390	0.34962	0.02435
0.01862		0.56550	0.29840	0.26674		
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.32076	0.03416	0.10335
0.13694		0.13336	0.22278	0.03898		
GWA14	GWA14	Scheduling work and activities		0.67152	-0.24999	0.11036
0.18141		-0.19200	-0.11216	-0.21430		
GWA16	GWA16	Performing general physical activities		-0.29477	0.12694	0.06093
0.43850		0.25316	0.04322	0.42714		
GWA17	GWA17	Handling and moving objects		-0.48201	0.38239	-0.05847
0.25283		0.29875	0.18265	0.33558		
GWA18	GWA18	Controlling machines and processes		-0.38259	0.45758	-0.03638
0.19155		0.44939	0.13423	0.24475		
GWA19	GWA19	Interacting with computers		0.25489	-0.18347	-0.06377
0.71691		-0.06824	0.02771	-0.28630		
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		-0.06358	-0.07848	0.06740
0.14610		0.14786	-0.07683	0.12360		
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		-0.02398	0.24192	-0.03677
0.20965		0.50372	0.73657	0.29882		
GWA22	GWA22	Implementing ideas, programs, systems or products		0.23912	0.04196	0.03598
0.18910		0.12898	0.26124	0.09553		
GWA23	GWA23	Repairing and maintaining mechanical equipment		-0.26101	0.24398	-0.03739
0.13885		0.52163	0.13653	0.27832		
GWA24	GWA24	Repairing and maintaining electronic equipment		-0.13419	0.03173	-0.10126
0.48513		0.46278	0.23762	0.09305		
GWA25	GWA25	Documenting/recording information		0.30317	-0.19310	0.07592
0.42269		-0.14568	-0.18388	-0.39979		
GWA27	GWA27	Communicating with supervisors, peers or subordinates		0.54447	-0.27091	0.05120
0.34136		-0.10664	-0.12363	-0.25703		
GWA28	GWA28	Communicating with persons outside the organizations		0.39942	-0.47142	0.05994
0.26497		-0.38204	-0.19206	-0.32249		
GWA40	GWA40	Performing administrative activities		0.51505	-0.21958	0.06371
0.32562		-0.24753	-0.21940	-0.35595		
GWA41	GWA41	Staffing organizational units		0.80526	-0.07884	0.12851
0.04736		-0.16886	-0.10480	-0.11612		
KN2	KN2	Clerical		0.23720	-0.25401	-0.02801
0.43259		-0.31249	-0.27472	-0.38282		
KN3	KN3	Economics and Accounting		0.49276	-0.15245	0.05012
0.22605		-0.24596	-0.09889	-0.15777		
KN4	KN4	Sales and Marketing		0.29551	-0.10754	0.07337
0.05390		-0.22281	-0.04449	-0.13701		
KN5	KN5	Customer and Personal Service		0.21542	-0.32613	0.01607
0.03434		-0.37396	-0.20497	-0.27165		

KN6	KN6 Personnel and Human Resources			1.00000	-0.09119	0.09943	
0.10367	-0.17229	-0.10986	-0.13419				
KN7	KN7 Production and Processing			-0.09119	1.00000	0.11329	-
0.16184	0.37055	0.32012	0.16303				
KN8	KN8 Food Production			0.09943	0.11329	1.00000	-
0.14629	-0.09748	-0.13321	-0.08368				
KN9	KN9 Computers and Electronics			0.10367	-0.16184	-0.14629	-
1.00000	0.16282	0.15676	-0.20490				
KN10	KN10 Engineering and Technology			-0.17229	0.37055	-0.09748	-
0.16282	1.00000	0.60403	0.45520				
KN11	KN11 Design			-0.10986	0.32012	-0.13321	-
0.15676	0.60403	1.00000	0.49125				
KN12	KN12 Building and Construction			-0.13419	0.16303	-0.08368	-
0.20490	0.45520	0.49125	1.00000				
KN13	KN13 Mechanical			-0.27651	0.39457	-0.08476	-
0.15843	0.67969	0.30370	0.47007				
KN14	KN14 Mathematics			0.28427	0.01678	0.03112	-
0.40223	0.13270	0.19710	-0.07162				
KN16	KN16 Chemistry			-0.07872	0.13413	0.21044	-
0.07289	0.18954	-0.01193	-0.03418				
KN17	KN17 Biology			0.04060	-0.17926	0.41123	-
0.06594	-0.13219	-0.17292	-0.16745				
KN20	KN20 Geography			0.09844	-0.23885	-0.00754	-
0.11352	-0.06185	-0.03056	-0.06640				
KN21	KN21 Medicine and Dentistry			0.06496	-0.24204	0.06562	-
0.02794	-0.14999	-0.17951	-0.17363				
KN23	KN23 Education and Training			0.50385	-0.23099	0.06789	-
0.21492	-0.14040	-0.07167	-0.18663				
KN29	KN29 Public Safety and Security			0.14073	-0.05948	0.03286	-
0.08369	0.20546	0.02325	0.08380				
KN31	KN31 Telecommunications			0.17454	-0.28665	-0.08175	-
0.50926	-0.03192	-0.02746	-0.19090				
KN32	KN32 Communications and Media			0.32841	-0.22653	-0.03986	-
0.40229	-0.18724	-0.05827	-0.27257				
KN33	KN33 Transportation			0.07189	-0.07388	0.03801	-
0.02291	0.02413	-0.11180	-0.01250				
SK3	SK3 Writing			0.41762	-0.28187	0.05204	-
0.43303	-0.18674	-0.11932	-0.35166				
SK4	SK4 Speaking			0.50041	-0.41021	0.05123	-
0.31151	-0.25882	-0.15917	-0.30321				
SK27	SK27 Equipment selection			-0.19307	0.33451	-0.00613	-
0.04601	0.56855	0.45385	0.43235				
SK28	SK28 Installation			-0.23243	0.22595	-0.08488	-
0.03227	0.54756	0.36161	0.47305				
SK29	SK29 Programming			0.09657	-0.06020	-0.00716	-
0.50248	0.11255	0.16538	-0.09920				
SK30	SK30 Testing			-0.11323	0.23218	0.02194	-
0.29824	0.59211	0.32616	0.14056				
SK31	SK31 Operation monitoring			-0.22165	0.35498	-0.04222	-
0.08879	0.51254	0.11864	0.08248				
SK32	SK32 Operation and control			-0.28545	0.37447	-0.07850	-
0.05027	0.40029	0.08702	0.15076				
SK33	SK33 Product inspection			-0.03278	0.42556	0.07480	-
0.07457	0.31112	0.38836	0.22830				
SK34	SK34 Equipment maintenance			-0.22683	0.27214	-0.03184	-
0.07208	0.47849	0.12655	0.23807				
SK35	SK35 Troubleshooting			-0.13074	0.19224	-0.03719	-
0.18138	0.60072	0.27803	0.26088				
SK36	SK36 Repairing			-0.24343	0.16930	-0.06408	-
0.03138	0.49268	0.19905	0.34801				
SK44	SK44 Management of financial resources			0.61043	-0.14989	0.10654	-
0.17226	-0.20329	-0.01111	-0.10702				
SK45	SK45 Management of material resources			0.49597	0.02269	0.11640	-
0.09393	0.06101	0.15219	0.04058				

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				KN13	KN14	KN16	
KN17	KN20	KN21	KN23				
GWA4	GWA4 Inspecting equipment, structures or materials			0.60217	-0.04969	0.19894	-
0.06598	-0.10571	-0.07623	-0.17182				
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			-0.07774	0.38220	0.11484	-
0.10776	0.22433	0.01168	0.24892				
GWA14	GWA14 Scheduling work and activities			-0.40146	0.31830	-0.02075	-
0.18398	0.16945	0.18080	0.59603				
GWA16	GWA16 Performing general physical activities			0.52959	-0.42108	0.09591	-
0.02688	-0.06580	0.06121	-0.25503				
GWA17	GWA17 Handling and moving objects			0.58906	-0.43587	0.12616	-
0.09548	-0.27470	-0.04609	-0.46776				
GWA18	GWA18 Controlling machines and processes			0.64519	-0.24981	0.26490	-
0.08132	-0.30115	-0.08998	-0.42148				
GWA19	GWA19 Interacting with computers			-0.41324	0.54935	-0.04150	-
0.04008	0.14145	0.06008	0.31813				
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			0.30898	-0.16058	-0.02207	-
0.06338	0.38828	-0.04279	-0.07842				
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.15321	0.27048	0.08746	-
0.02042	-0.00265	-0.10060	0.05943				
GWA22	GWA22 Implementing ideas, programs, systems or products			-0.05313	0.20657	0.09344	-
0.14024	-0.05986	0.07475	0.28657				
GWA23	GWA23 Repairing and maintaining mechanical equipment			0.80643	-0.21559	0.09491	-
0.17844	-0.13528	-0.14804	-0.28227				
GWA24	GWA24 Repairing and maintaining electronic equipment			0.43243	0.01092	0.04586	-
0.09924	-0.08322	-0.02539	-0.06546				
GWA25	GWA25 Documenting/recording information			-0.38991	0.52324	0.07547	-
0.21921	0.21898	0.21967	0.32217				
GWA27	GWA27 Communicating with supervisors, peers or subordinates			-0.39267	0.42338	0.00347	-
0.16543	0.23388	0.20700	0.53175				
GWA28	GWA28 Communicating with persons outside the organizations			-0.58301	0.33591	-0.06932	-
0.22188	0.31313	0.27600	0.52771				
GWA40	GWA40 Performing administrative activities			-0.41388	0.48284	-0.04389	-
0.11120	0.18447	0.15493	0.39493				
GWA41	GWA41 Staffing organizational units			-0.24379	0.21734	-0.07115	-
0.03606	0.05982	0.01276	0.39736				
KN2	KN2 Clerical			-0.39615	0.35288	-0.10609	-
0.02141	0.16948	0.12390	0.21304				
KN3	KN3 Economics and Accounting			-0.38650	0.57101	-0.19555	-

0.05835	0.20112	-0.05201	0.29511				
KN4	KN4 Sales and Marketing			-0.27204	0.24478	-0.13491	-
0.03286	0.19133	-0.03345	0.26831				
KN5	KN5 Customer and Personal Service			-0.33576	0.05635	-0.08831	-
0.09242	0.17157	0.28278	0.33217				
KN6	KN6 Personnel and Human Resources			-0.27651	0.28427	-0.07872	-
0.04060	0.09844	0.06496	0.50385				
KN7	KN7 Production and Processing			0.39457	0.01678	0.13413	-
0.17926	-0.23885	-0.24204	-0.23099				
KN8	KN8 Food Production			-0.08476	0.03112	0.21044	-
0.41123	-0.00754	0.06562	0.06789				
KN9	KN9 Computers and Electronics			-0.15843	0.40223	-0.07289	-
0.06594	0.11352	0.02794	0.21492				
KN10	KN10 Engineering and Technology			0.67969	0.13270	0.18954	-
0.13219	-0.06185	-0.14999	-0.14040				
KN11	KN11 Design			0.30370	0.19710	-0.01193	-
0.17292	-0.03056	-0.17951	-0.07167				
KN12	KN12 Building and Construction			0.47007	-0.07162	-0.03418	-
0.16745	-0.06640	-0.17363	-0.18663				
KN13	KN13 Mechanical			1.00000	-0.22493	0.08689	-
0.22564	-0.16293	-0.18215	-0.31655				
KN14	KN14 Mathematics			-0.22493	1.00000	0.10489	-
0.08374	0.17687	0.00781	0.29376				
KN16	KN16 Chemistry			0.08689	0.10489	1.00000	-
0.56146	-0.07995	0.37295	0.04285				
KN17	KN17 Biology			-0.22564	0.08374	0.56146	-
1.00000	-0.00784	0.63775	0.23399				
KN20	KN20 Geography			-0.16293	0.17687	-0.07995	-
0.00784	1.00000	-0.02665	0.14506				
KN21	KN21 Medicine and Dentistry			-0.18215	0.00781	0.37295	-
0.63775	-0.02665	1.00000	0.29313				
KN23	KN23 Education and Training			-0.31655	0.29376	0.04285	-
0.23399	0.14506	0.29313	1.00000				
KN29	KN29 Public Safety and Security			0.13974	0.09517	0.16916	-
0.07313	0.34318	0.19482	0.19643				
KN31	KN31 Telecommunications			-0.20270	0.17702	-0.16421	-
0.10322	0.38101	0.02092	0.20908				
KN32	KN32 Communications and Media			-0.43109	0.29266	-0.07493	-
0.01882	0.30435	0.05312	0.43362				
KN33	KN33 Transportation			0.08158	0.02211	-0.10224	-
0.09007	0.58488	-0.01169	0.02108				
SK3	SK3 Writing			-0.49933	0.49631	0.03735	-
0.21634	0.22900	0.19722	0.48214				
SK4	SK4 Speaking			-0.52522	0.37068	-0.06253	-
0.20262	0.32973	0.28387	0.64397				
SK27	SK27 Equipment selection			0.59560	-0.12047	0.27733	-
0.06813	-0.19683	0.01862	-0.14155				
SK28	SK28 Installation			0.66733	-0.18479	0.01065	-
0.19654	-0.21842	-0.15999	-0.23875				
SK29	SK29 Programming			-0.18127	0.40490	0.03618	-
0.07234	0.02410	-0.01534	0.20316				
SK30	SK30 Testing			0.48562	0.12810	0.28657	-
0.03712	-0.13590	0.00779	-0.02366				
SK31	SK31 Operation monitoring			0.63269	-0.10217	0.21411	-
0.08912	-0.10916	-0.02029	-0.24007				
SK32	SK32 Operation and control			0.61406	-0.25532	0.15818	-
0.13203	-0.13414	-0.03864	-0.34356				
SK33	SK33 Product inspection			0.30228	0.03849	0.10903	-
0.10084	-0.24042	-0.16926	-0.12754				
SK34	SK34 Equipment maintenance			0.77303	-0.26243	0.09195	-
0.16806	-0.13733	-0.12669	-0.29182				
SK35	SK35 Troubleshooting			0.67873	-0.07136	0.07331	-
0.17171	-0.09678	-0.14070	-0.15622				
SK36	SK36 Repairing			0.73766	-0.25764	0.01917	-
0.20599	-0.16344	-0.17474	-0.29530				
SK44	SK44 Management of financial resources			-0.36517	0.42224	-0.10469	-
0.06850	0.13109	0.03688	0.40210				
SK45	SK45 Management of material resources			-0.11806	0.22840	0.03743	-
0.13689	0.11659	0.08144	0.38800				

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KN33	SK3	SK4	SK27	KN29	KN31	KN32
GWA4	GWA4 Inspecting equipment, structures or materials			0.26287	-0.07795	-0.23733
0.08614	-0.17203	-0.27011	0.51513			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.16838	0.16233	0.20649
0.13529	0.29711	0.29007	0.15666			
GWA14	GWA14 Scheduling work and activities			0.11018	0.29528	0.47279
0.06610	0.53296	0.66739	-0.22704			
GWA16	GWA16 Performing general physical activities			0.17751	-0.26724	-0.47471
0.12610	-0.59014	-0.43600	0.36663			
GWA17	GWA17 Handling and moving objects			-0.07029	-0.32484	-0.52354
0.04494	-0.67660	-0.69485	0.52942			
GWA18	GWA18 Controlling machines and processes			-0.02598	-0.28616	-0.41455
0.07997	-0.53625	-0.61001	0.48412			
GWA19	GWA19 Interacting with computers			0.02472	0.36188	0.50936
0.08739	0.57556	0.45867	-0.25665			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			0.36355	0.11372	-0.08755
0.63836	-0.17250	-0.06424	0.07890			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.03834	0.00363	0.08397
0.10549	0.08878	0.01064	0.40663			
GWA22	GWA22 Implementing ideas, programs, systems or products			-0.00185	0.02560	0.20076
0.16164	0.25352	0.20380	0.21826			
GWA23	GWA23 Repairing and maintaining mechanical equipment			0.08796	-0.16913	-0.34413
0.09319	-0.38809	-0.43664	0.47101			
GWA24	GWA24 Repairing and maintaining electronic equipment			0.12436	0.26821	-0.06523
0.00958	-0.09248	-0.14124	0.33560			
GWA25	GWA25 Documenting/recording information			0.18661	0.32447	0.40552
0.08922	0.75619	0.56067	-0.34324			

GWA27	GWA27	Communicating with supervisors, peers or subordinates	0.26019	0.39090	0.54231
0.14592	0.65865	0.72960	-0.27612		
GWA28	GWA28	Communicating with persons outside the organizations	0.15538	0.42628	0.55496
0.10195	0.63445	0.81255	-0.46640		
GWA40	GWA40	Performing administrative activities	0.13294	0.34735	0.43880
0.09112	0.65583	0.59674	-0.39796		
GWA41	GWA41	Staffing organizational units	0.05774	0.12516	0.32254
0.00429	0.32107	0.38158	-0.15279		
KN2	KN2	Clerical	0.03346	0.37111	0.38641
0.07342	0.53897	0.42861	-0.43149		
KN3	KN3	Economics and Accounting	0.03644	0.28505	0.36223
0.05927	0.46418	0.49438	-0.36634		
KN4	KN4	Sales and Marketing	-0.01101	0.22205	0.36557
0.07313	0.23218	0.41044	-0.25381		
KN5	KN5	Customer and Personal Service	0.11584	0.22871	0.20291
0.13351	0.14584	0.42711	-0.36746		
KN6	KN6	Personnel and Human Resources	0.14073	0.17454	0.32841
0.07189	0.41762	0.50041	-0.19307		
KN7	KN7	Production and Processing	-0.05948	-0.28665	-0.22653
0.07388	-0.28187	-0.41021	0.33451		
KN8	KN8	Food Production	0.03286	-0.08175	-0.03986
0.03801	0.05204	0.05123	-0.00613		
KN9	KN9	Computers and Electronics	0.08369	0.50926	0.40229
0.02291	0.43303	0.31151	-0.04601		
KN10	KN10	Engineering and Technology	0.20546	-0.03192	-0.18724
0.02413	-0.18674	-0.25882	0.56855		
KN11	KN11	Design	0.02325	-0.02746	-0.05827
0.11180	-0.11932	-0.15917	0.45385		
KN12	KN12	Building and Construction	0.08380	-0.19090	-0.27257
0.01250	-0.35166	-0.30321	0.43235		
KN13	KN13	Mechanical	0.13974	-0.20270	-0.43109
0.08158	-0.49933	-0.52522	0.59560		
KN14	KN14	Mathematics	0.09517	0.17702	0.29266
0.02211	0.49631	0.37068	-0.12047		
KN16	KN16	Chemistry	0.16916	-0.16421	-0.07493
0.10224	0.03735	-0.06253	0.27733		
KN17	KN17	Biology	0.07313	-0.10322	0.01882
0.09007	0.21634	0.20262	0.06813		
KN20	KN20	Geography	0.34318	0.38101	0.30435
0.58488	0.22900	0.32973	-0.19683		
KN21	KN21	Medicine and Dentistry	0.19482	0.02092	0.05312
0.01169	0.19722	0.28387	0.01862		
KN23	KN23	Education and Training	0.19643	0.20908	0.43362
0.02108	0.48214	0.64397	-0.14155		
KN29	KN29	Public Safety and Security	1.00000	0.26192	0.13225
0.44232	0.12268	0.24291	0.01542		
KN31	KN31	Telecommunications	0.26192	1.00000	0.49866
0.28982	0.36125	0.45823	-0.19293		
KN32	KN32	Communications and Media	0.13225	0.49866	1.00000
0.10972	0.57949	0.58047	-0.33855		
KN33	KN33	Transportation	0.44232	0.28982	0.10972
1.00000	0.02568	0.15350	-0.08300		
SK3	SK3	Writing	0.12268	0.36125	0.57949
0.02568	1.00000	0.74289	-0.29850		
SK4	SK4	Speaking	0.24291	0.45823	0.58047
0.15350	0.74289	1.00000	-0.37975		
SK27	SK27	Equipment selection	0.01542	-0.19293	-0.33855
0.08300	-0.29850	-0.37975	1.00000		
SK28	SK28	Installation	-0.01946	-0.10335	-0.33889
0.08083	-0.38243	-0.41983	0.60387		
SK29	SK29	Programming	-0.02358	0.16299	0.17290
0.12222	0.37926	0.22963	0.10238		
SK30	SK30	Testing	0.19740	0.06177	-0.12446
0.05160	0.06090	-0.09016	0.53816		
SK31	SK31	Operation monitoring	0.18548	-0.01577	-0.23283
0.12535	-0.20506	-0.32122	0.47164		
SK32	SK32	Operation and control	0.05760	-0.08761	-0.31506
0.10102	-0.37737	-0.46558	0.49439		
SK33	SK33	Product inspection	-0.04818	-0.12311	-0.12262
0.19966	0.01819	-0.19274	0.47580		
SK34	SK34	Equipment maintenance	0.10932	-0.11192	-0.36949
0.12014	-0.37478	-0.44809	0.51703		
SK35	SK35	Troubleshooting	0.20566	0.07293	-0.24209
0.10173	-0.15437	-0.22423	0.53114		
SK36	SK36	Repairing	0.00998	-0.09231	-0.38199
0.03859	-0.36403	-0.41956	0.53371		
SK44	SK44	Management of financial resources	0.03312	0.22349	0.35063
0.01756	0.53057	0.54602	-0.19830		
SK45	SK45	Management of material resources	0.12173	0.14963	0.23392
0.09118	0.39078	0.42701	0.18967		

Correlations

				SK28	SK29	SK30
SK31	SK32	SK33	SK34			
GWA4	GWA4	Inspecting equipment, structures or materials		0.51764	0.02040	0.61629
0.56236	0.41891	0.48685	0.60564			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		-0.03135	0.21912	0.13557
0.05011	-0.12294	0.15258	-0.09600			
GWA14	GWA14	Scheduling work and activities		-0.30888	0.16731	-0.14106
0.31965	-0.38497	-0.11391	-0.35102			
GWA16	GWA16	Performing general physical activities		0.41314	-0.33427	0.05815
0.23988	0.32913	-0.01063	0.44617			
GWA17	GWA17	Handling and moving objects		0.49193	-0.22160	0.19156
0.41484	0.56669	0.23806	0.51475			
GWA18	GWA18	Controlling machines and processes		0.42634	-0.19106	0.31278
0.64068	0.73987	0.25868	0.55994			
GWA19	GWA19	Interacting with computers		-0.24415	0.57967	0.03119
0.17435	-0.27145	-0.03035	-0.36017			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		0.09261	-0.16230	0.01986
0.25346	0.28474	-0.16316	0.33683			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.23098	0.33403	0.33217
0.08976	0.03133	0.33761	0.02925			
GWA22	GWA22	Implementing ideas, programs, systems or products		0.12431	0.30733	0.23174
0.05545	-0.14177	0.20359	-0.05665			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.61986	-0.18006	0.45678
0.58781	0.53775	0.21983	0.82569			

GWA24	GWA24	Repairing and maintaining electronic equipment	0.54121	0.10747	0.57992	
0.42569	0.27243	0.16596	0.51525			
GWA25	GWA25	Documenting/recording information	-0.33860	0.26921	0.05051	-
0.08873	-0.25982	-0.05440	-0.25422			
GWA27	GWA27	Communicating with supervisors, peers or subordinates	-0.32480	0.28860	-0.05382	-
0.17939	-0.31975	-0.15599	-0.30771			
GWA28	GWA28	Communicating with persons outside the organizations	-0.44074	0.16358	-0.22006	-
0.47961	-0.57220	-0.29187	-0.50137			
GWA40	GWA40	Performing administrative activities	-0.34345	0.16684	-0.10874	-
0.23175	-0.33855	-0.09458	-0.30548			
GWA41	GWA41	Staffing organizational units	-0.18333	0.05428	-0.13186	-
0.21682	-0.25535	-0.02446	-0.20239			
KN2	KN2	Clerical	-0.34713	0.13590	-0.18665	-
0.19755	-0.23072	-0.11552	-0.28491			
KN3	KN3	Economics and Accounting	-0.31740	0.10934	-0.21931	-
0.38531	-0.43885	-0.09593	-0.37748			
KN4	KN4	Sales and Marketing	-0.20829	0.00823	-0.20707	-
0.33465	-0.35387	-0.13941	-0.26948			
KN5	KN5	Customer and Personal Service	-0.27807	-0.06697	-0.29682	-
0.33909	-0.33787	-0.32797	-0.26525			
KN6	KN6	Personnel and Human Resources	-0.23243	0.09657	-0.11323	-
0.22165	-0.28545	-0.03278	-0.22683			
KN7	KN7	Production and Processing	0.22595	-0.06020	0.23218	
0.35498	0.37447	0.42556	0.27214			
KN8	KN8	Food Production	-0.08488	-0.00716	0.02194	-
0.04222	-0.07850	0.07480	-0.03184			
KN9	KN9	Computers and Electronics	0.03227	0.50248	0.29824	
0.08879	-0.05027	0.07457	-0.07208			
KN10	KN10	Engineering and Technology	0.54756	0.11255	0.59211	
0.51254	0.40029	0.31112	0.47849			
KN11	KN11	Design	0.36161	0.16538	0.32616	
0.11864	0.08702	0.38836	0.12655			
KN12	KN12	Building and Construction	0.47305	-0.09920	0.14056	
0.08248	0.15076	0.22830	0.23807			
KN13	KN13	Mechanical	0.66733	-0.18127	0.48562	
0.63269	0.61406	0.30228	0.77303			
KN14	KN14	Mathematics	-0.18479	0.40490	0.12810	-
0.10217	-0.25532	0.03849	-0.26243			
KN16	KN16	Chemistry	0.01065	0.03618	0.28657	
0.21411	0.15818	0.10903	0.09195			
KN17	KN17	Biology	-0.19654	0.07234	0.03712	-
0.08912	-0.13203	-0.10084	-0.16806			
KN20	KN20	Geography	-0.21842	0.02410	-0.13590	-
0.10916	-0.13414	-0.24042	-0.13733			
KN21	KN21	Medicine and Dentistry	-0.15999	-0.01534	0.00779	-
0.02029	-0.03864	-0.16926	-0.12669			
KN23	KN23	Education and Training	-0.23875	0.20316	-0.02366	-
0.24007	-0.34356	-0.12754	-0.29182			
KN29	KN29	Public Safety and Security	-0.01946	-0.02358	0.19740	
0.18548	0.05760	-0.04818	0.10932			
KN31	KN31	Telecommunications	-0.10335	0.16299	0.06177	-
0.01577	-0.08761	-0.12311	-0.11192			
KN32	KN32	Communications and Media	-0.33889	0.17290	-0.12446	-
0.23283	-0.31506	-0.12262	-0.36949			
KN33	KN33	Transportation	-0.08083	-0.12222	-0.05160	-
0.12535	0.10102	-0.19966	0.12014			
SK3	SK3	Writing	-0.38243	0.37926	0.06090	-
0.20506	-0.37737	0.01819	-0.37478			
SK4	SK4	Speaking	-0.41983	0.22963	-0.09016	-
0.32122	-0.46558	-0.19274	-0.44809			
SK27	SK27	Equipment selection	0.60387	0.10238	0.53816	
0.47164	0.49439	0.47580	0.51703			
SK28	SK28	Installation	1.00000	0.00317	0.54282	
0.45241	0.41271	0.34884	0.65168			
SK29	SK29	Programming	0.00317	1.00000	0.27154	
0.05667	-0.06944	0.10494	-0.12921			
SK30	SK30	Testing	0.54282	0.27154	1.00000	
0.61594	0.37713	0.49699	0.50638			
SK31	SK31	Operation monitoring	0.45241	0.05667	0.61594	
1.00000	0.83350	0.33069	0.68439			
SK32	SK32	Operation and control	0.41271	-0.06944	0.37713	
0.83350	1.00000	0.29191	0.61238			
SK33	SK33	Product inspection	0.34884	0.10494	0.49699	
0.33069	0.29191	1.00000	0.27629			
SK34	SK34	Equipment maintenance	0.65168	-0.12921	0.50638	
0.68439	0.61238	0.27629	1.00000			
SK35	SK35	Troubleshooting	0.68454	0.10893	0.73486	
0.65900	0.48702	0.37320	0.78562			
SK36	SK36	Repairing	0.74148	-0.11773	0.51765	
0.52674	0.46783	0.28261	0.84069			
SK44	SK44	Management of financial resources	-0.26400	0.18524	-0.12040	-
0.33352	-0.38908	0.00700	-0.33501			
SK45	SK45	Management of material resources	0.00364	0.21207	0.13596	-
0.06195	-0.12553	0.23375	-0.06987			

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-IMPORTANCE

The FACTOR Procedure

Correlations

SK44	SK45	SK35	SK36
	GWA4	GWA4	Inspecting equipment, structures or materials
-0.16880	0.14133	0.68934	0.57610
	GWA5	GWA5	Estimating the characteristics of materials, products, events or information
0.42631	0.47428	0.07151	-0.07915
	GWA14	GWA14	Scheduling work and activities
0.62922	0.56900	-0.18751	-0.32705
	GWA16	GWA16	Performing general physical activities
-0.41045	-0.14953	0.27811	0.42368
	GWA17	GWA17	Handling and moving objects
-0.54012	-0.27058	0.31935	0.48252
	GWA18	GWA18	Controlling machines and processes
		0.37035	0.45400

-0.48656	-0.26265		
0.31561	GWA19	GWA19 Interacting with computers	-0.13778 -0.34598
	0.17411		
-0.12548	GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.24712 0.24738
	-0.02231		
0.09151	GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.23518 0.08194
	0.28979		
0.29706	GWA22	GWA22 Implementing ideas, programs, systems or products	0.07270 -0.01246
	0.37926		
-0.33674	GWA23	GWA23 Repairing and maintaining mechanical equipment	0.69728 0.80090
	-0.13780		
-0.15406	GWA24	GWA24 Repairing and maintaining electronic equipment	0.63891 0.56513
	-0.01546		
0.35765	GWA25	GWA25 Documenting/recording information	-0.10854 -0.29409
	0.21720		
0.51454	GWA27	GWA27 Communicating with supervisors, peers or subordinates	-0.12957 -0.33281
	0.43855		
0.54298	GWA28	GWA28 Communicating with persons outside the organizations	-0.33068 -0.44711
	0.32791		
0.57163	GWA40	GWA40 Performing administrative activities	-0.17080 -0.31576
	0.37666		
0.59457	GWA41	GWA41 Staffing organizational units	-0.12910 -0.20164
	0.47592		
0.27262	KN2	KN2 Clerical	-0.23544 -0.31373
	0.08726		
0.75534	KN3	KN3 Economics and Accounting	-0.24265 -0.32520
	0.34691		
0.46252	KN4	KN4 Sales and Marketing	-0.20383 -0.21940
	0.28716		
0.24168	KN5	KN5 Customer and Personal Service	-0.26711 -0.28003
	0.14266		
0.61043	KN6	KN6 Personnel and Human Resources	-0.13074 -0.24343
	0.49597		
-0.14989	KN7	KN7 Production and Processing	0.19224 0.16930
	0.02269		
0.10654	KN8	KN8 Food Production	-0.03719 -0.06408
	0.11640		
0.17226	KN9	KN9 Computers and Electronics	0.18138 -0.03138
	0.09393		
-0.20329	KN10	KN10 Engineering and Technology	0.60072 0.49268
	0.06101		
-0.01111	KN11	KN11 Design	0.27803 0.19905
	0.15219		
-0.10702	KN12	KN12 Building and Construction	0.26088 0.34801
	0.04058		
-0.36517	KN13	KN13 Mechanical	0.67873 0.73766
	-0.11806		
0.42224	KN14	KN14 Mathematics	-0.07136 -0.25764
	0.22840		
-0.10469	KN16	KN16 Chemistry	0.07331 0.01917
	0.03743		
0.06850	KN17	KN17 Biology	-0.17171 -0.20599
	0.13689		
0.13109	KN20	KN20 Geography	-0.09678 -0.16344
	0.11659		
0.03688	KN21	KN21 Medicine and Dentistry	-0.14070 -0.17474
	0.08144		
0.40210	KN23	KN23 Education and Training	-0.15622 -0.29530
	0.38800		
0.03312	KN29	KN29 Public Safety and Security	0.20566 0.00998
	0.12173		
0.22349	KN31	KN31 Telecommunications	0.07293 -0.09231
	0.14963		
0.35063	KN32	KN32 Communications and Media	-0.24209 -0.38199
	0.23392		
0.01756	KN33	KN33 Transportation	0.10173 0.03859
	0.09118		
0.53057	SK3	SK3 Writing	-0.15437 -0.36403
	0.39078		
0.54602	SK4	SK4 Speaking	-0.22423 -0.41956
	0.42701		
-0.19830	SK27	SK27 Equipment selection	0.53114 0.53371
	0.18967		
-0.26400	SK28	SK28 Installation	0.68454 0.74148
	0.00364		
0.18524	SK29	SK29 Programming	0.10893 -0.11773
	0.21207		
-0.12040	SK30	SK30 Testing	0.73486 0.51765
	0.13596		
-0.33352	SK31	SK31 Operation monitoring	0.65900 0.52674
	-0.06195		
-0.38908	SK32	SK32 Operation and control	0.48702 0.46783
	-0.12553		
0.00700	SK33	SK33 Product inspection	0.37320 0.28261
	0.23375		
-0.33501	SK34	SK34 Equipment maintenance	0.78562 0.84069
	-0.06987		
-0.17372	SK35	SK35 Troubleshooting	1.00000 0.79428
	0.08940		
-0.27955	SK36	SK36 Repairing	0.79428 1.00000
	-0.05361		
1.00000	SK44	SK44 Management of financial resources	-0.17372 -0.27955
	0.64074		
0.64074	SK45	SK45 Management of material resources	0.08940 -0.05361
	1.00000		

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-IMPORTANCE

The FACTOR Procedure
Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 53 Average = 1

Eigenvalue Difference Proportion Cumulative

1	15.1568326	8.4729589	0.2860	0.2860
2	6.6838738	3.1758130	0.1261	0.4121
3	3.5080608	0.4213057	0.0662	0.4783
4	3.0867551	0.3460518	0.0582	0.5365
5	2.7407033	0.6274724	0.0517	0.5882
6	2.1132309	0.3149125	0.0399	0.6281
7	1.7983183	0.5045888	0.0339	0.6620
8	1.2937295	0.1156984	0.0244	0.6864
9	1.1780311	0.1024827	0.0222	0.7087
10	1.0755484	0.1186885	0.0203	0.7290
11	0.9568599	0.0577065	0.0181	0.7470
12	0.8991533	0.0568213	0.0170	0.7640
13	0.8423321	0.0242384	0.0159	0.7799
14	0.8180936	0.0676946	0.0154	0.7953
15	0.7503990	0.0396519	0.0142	0.8095
16	0.7107471	0.1237582	0.0134	0.8229
17	0.5869889	0.0189315	0.0111	0.8340
18	0.5680573	0.0336667	0.0107	0.8447
19	0.5343906	0.0471530	0.0101	0.8548
20	0.4872377	0.0418244	0.0092	0.8639
21	0.4454133	0.0163016	0.0084	0.8724
22	0.4291116	0.0259960	0.0081	0.8805
23	0.4031157	0.0309555	0.0076	0.8881
24	0.3721601	0.0259056	0.0070	0.8951
25	0.3462545	0.0110224	0.0065	0.9016
26	0.3352321	0.0156183	0.0063	0.9079
27	0.3196138	0.0186050	0.0060	0.9140
28	0.3010088	0.0070063	0.0057	0.9196
29	0.2940024	0.0084663	0.0055	0.9252
30	0.2855361	0.0224992	0.0054	0.9306
31	0.2630369	0.0049304	0.0050	0.9355
32	0.2581066	0.0088412	0.0049	0.9404
33	0.2492654	0.0266478	0.0047	0.9451
34	0.2226176	0.0102779	0.0042	0.9493
35	0.2123396	0.0139933	0.0040	0.9533
36	0.1983464	0.0015658	0.0037	0.9571
37	0.1967805	0.0035760	0.0037	0.9608
38	0.1932045	0.0071600	0.0036	0.9644
39	0.1860445	0.0135834	0.0035	0.9679
40	0.1724611	0.0090456	0.0033	0.9712
41	0.1634155	0.0127607	0.0031	0.9743
42	0.1506548	0.0115701	0.0028	0.9771
43	0.1390847	0.0007244	0.0026	0.9797
44	0.1383604	0.0098236	0.0026	0.9823
45	0.1285368	0.0110208	0.0024	0.9848
46	0.1175160	0.0043003	0.0022	0.9870
47	0.1132157	0.0048859	0.0021	0.9891
48	0.1083298	0.0056262	0.0020	0.9912
49	0.1027036	0.0052996	0.0019	0.9931
50	0.0974040	0.0025380	0.0018	0.9949
51	0.0948660	0.0024366	0.0018	0.9967
52	0.0924293	0.0119408	0.0017	0.9985
53	0.0804885		0.0015	1.0000

10 factors will be retained by the MINEIGEN criterion.

Factor Pattern

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-IMPORTANCE

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

8	9	10	1	2	3	4	5	6	7
	1		-0.58792	0.51354	0.38701	-0.14118	0.05243	0.29953	-0.29552
0.05223		0.19342	0.03137						
	2		0.61086	0.45355	0.39693	0.43414	0.10361	0.20743	0.10898
0.07923		-0.03601	0.04361						
	3		0.29339	-0.02450	-0.01321	-0.53455	0.74629	0.04404	-0.09108
0.07083		0.18728	-0.14188						
	4		-0.05532	0.56093	-0.70214	0.18153	0.16799	-0.24174	-0.01650
0.11593		0.11908	0.20443						
	5		0.00480	-0.04213	0.05504	-0.20468	-0.14812	-0.01071	0.12924
0.92726		-0.15737	0.17301						
	6		-0.28339	-0.32494	0.12234	0.62167	0.50157	-0.19397	-0.24005
0.23734		-0.04184	-0.08810						
	7		-0.28698	-0.02544	-0.05566	0.02373	0.34445	0.37416	0.64763
0.13756		-0.36828	0.28411						
	8		0.07208	-0.29997	-0.25949	0.18983	-0.07689	0.62792	-0.04311
0.11339		0.59721	0.17284						
	9		-0.15233	0.10993	0.01550	0.08035	-0.04170	-0.10157	0.55867
0.12915		0.37225	-0.69180						
	10		-0.03127	-0.07248	0.33292	-0.03825	0.03922	-0.47386	0.29069
0.08903		0.50463	0.55526						

Rotated Factor Pattern

Factor3	Factor4	Factor5	Factor1	Factor2
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GWA4	GWA4 Inspecting equipment, structures or materials	0.69747	0.05583	-
0.08050	0.24213 0.08752			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information	0.01677	0.50425	
0.10064	0.42233 0.18358			
GWA14	GWA14 Scheduling work and activities	-0.17405	0.81371	
0.17157	-0.00968 0.03911			
GWA16	GWA16 Performing general physical activities	0.34315	-0.22393	-
0.62405	0.04980 0.20791			
GWA17	GWA17 Handling and moving objects	0.37145	-0.46152	-
0.36263	0.11339 -0.10355			
GWA18	GWA18 Controlling machines and processes	0.42490	-0.32836	-
0.26474	0.04877 -0.06917			
GWA19	GWA19 Interacting with computers	-0.16574	0.18366	
0.69274	0.10871 -0.08996			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.23575	-0.05205	-
0.19721	-0.10694 0.75673			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.12212	0.10140	
0.18462	0.81685 -0.04190			
GWA22	GWA22 Implementing ideas, programs, systems or products	0.07631	0.44248	
0.21825	0.43524 -0.21267			
GWA23	GWA23 Repairing and maintaining mechanical equipment	0.80023	-0.16559	-
0.27938	-0.03400 0.08628			
GWA24	GWA24 Repairing and maintaining electronic equipment	0.73946	-0.11632	-
0.31885	0.08977 -0.02770			
GWA25	GWA25 Documenting/recording information	-0.07801	0.27646	
0.45852	-0.16086 0.09494			
GWA27	GWA27 Communicating with supervisors, peers or subordinates	-0.13963	0.64796	
0.36906	-0.02226 0.20081			
GWA28	GWA28 Communicating with persons outside the organizations	-0.30824	0.43127	
0.33619	-0.07715 0.14482			
GWA40	GWA40 Performing administrative activities	-0.11260	0.54844	
0.29296	-0.18337 0.03496			
GWA41	GWA41 Staffing organizational units	-0.09342	0.84236	-
0.04346	-0.08333 -0.05856			
KN2	KN2 Clerical	-0.17200	0.11220	
0.40421	-0.32556 0.01112			
KN3	KN3 Economics and Accounting	-0.22693	0.47379	
0.09223	0.00804 0.01859			
KN4	KN4 Sales and Marketing	-0.18259	0.31921	
0.05057	0.06328 0.06033			
KN5	KN5 Customer and Personal Service	-0.20126	0.16997	
0.03006	-0.18083 0.08349			
KN6	KN6 Personnel and Human Resources	-0.11179	0.84654	
0.01683	-0.10271 0.00739			
KN7	KN7 Production and Processing	0.12440	-0.07093	-
0.19070	0.28386 -0.13524			
KN8	KN8 Food Production	-0.02074	0.09079	-
0.11198	-0.08839 0.04859			
KN9	KN9 Computers and Electronics	0.18080	0.02845	
0.80475	0.11511 -0.03380			
KN10	KN10 Engineering and Technology	0.57347	-0.09887	-
0.02442	0.55892 0.11393			
KN11	KN11 Design	0.18000	-0.06961	
0.03270	0.84702 -0.05047			
KN12	KN12 Building and Construction	0.25638	-0.07150	-
0.45477	0.56499 0.04615			
KN13	KN13 Mechanical	0.73861	-0.19390	-
0.34658	0.17706 0.09731			
KN14	KN14 Mathematics	-0.10694	0.21877	
0.29580	0.33611 0.03017			
KN16	KN16 Chemistry	0.08499	-0.05003	-
0.05062	0.10728 -0.01965			
KN17	KN17 Biology	-0.12285	0.07173	-
0.01061	-0.03463 -0.04345			
KN20	KN20 Geography	-0.17374	0.04974	
0.17659	0.06734 0.75358			
KN21	KN21 Medicine and Dentistry	-0.06467	0.09469	
0.02784	-0.12469 -0.00174			
KN23	KN23 Education and Training	-0.14141	0.58917	
0.23927	0.02491 0.05207			
KN29	KN29 Public Safety and Security	0.15717	0.15601	
0.00588	0.08397 0.63362			
KN31	KN31 Telecommunications	0.05757	0.15412	
0.59090	-0.06959 0.37961			
KN32	KN32 Communications and Media	-0.28133	0.36800	
0.55684	-0.00039 0.18543			
KN33	KN33 Transportation	0.04380	0.04854	-
0.01668	-0.09385 0.85096			
SK3	SK3 Writing	-0.17841	0.45666	
0.56775	-0.05108 0.05100			
SK4	SK4 Speaking	-0.24642	0.55759	
0.41923	-0.06360 0.21347			
SK27	SK27 Equipment selection	0.54425	-0.03591	-
0.13105	0.45949 -0.09297			
SK28	SK28 Installation	0.76787	-0.13647	-
0.14109	0.25786 -0.14194			
SK29	SK29 Programming	0.02226	0.09464	
0.59859	0.28745 -0.11529			
SK30	SK30 Testing	0.72075	-0.01319	
0.29333	0.25311 -0.04679			
SK31	SK31 Operation monitoring	0.64597	-0.14238	
0.11482	-0.05849 0.15250			
SK32	SK32 Operation and control	0.48677	-0.21926	-
0.03782	-0.07844 0.12248			
SK33	SK33 Product inspection	0.34474	0.07813	
0.08645	0.32179 -0.26382			
SK34	SK34 Equipment maintenance	0.84984	-0.14052	-
0.18405	-0.08620 0.08848			
SK35	SK35 Troubleshooting	0.90896	-0.01805	
0.07396	0.11118 0.09108			
SK36	SK36 Repairing	0.87928	-0.14624	-
0.19199	0.01153 -0.01838			
SK44	SK44 Management of financial resources	-0.16310	0.71172	
0.09267	0.08547 -0.03946			
SK45	SK45 Management of material resources	0.07617	0.71940	
0.08407	0.25252 0.04497			

Rotated Factor Pattern

Factor8	Factor9	Factor10	Factor6	Factor7
GWA4	GWA4 Inspecting equipment, structures or materials		0.00738	0.27160
0.07932	-0.11482	0.08626		
GWA5	GWA5 Estimating the characteristics of materials, products, events or information		0.12528	0.07428
0.07084	0.05698	0.21094		
GWA14	GWA14 Scheduling work and activities		0.11246	-0.12908
0.11190	0.15088	-0.03045		
GWA16	GWA16 Performing general physical activities		-0.21812	0.02589
0.18385	0.05117	-0.13542		
GWA17	GWA17 Handling and moving objects		-0.27207	0.40442
0.07930	0.10075	-0.11728		
GWA18	GWA18 Controlling machines and processes		-0.09621	0.62519
0.11340	-0.06546	-0.12959		
GWA19	GWA19 Interacting with computers		0.40233	-0.05573
0.01879	0.05983	-0.11310		
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment		-0.09338	0.00734
0.04306	-0.01070	0.05256		
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment		-0.00448	0.11212
0.03138	-0.00209	0.01149		
GWA22	GWA22 Implementing ideas, programs, systems or products		-0.14618	-0.03405
0.14693	0.01415	0.06689		
GWA23	GWA23 Repairing and maintaining mechanical equipment		0.00539	0.14515
0.05363	-0.04200	-0.03462		
GWA24	GWA24 Repairing and maintaining electronic equipment		-0.03123	-0.06575
0.01542	0.14683	-0.12093		
GWA25	GWA25 Documenting/recording information		0.64713	-0.04547
0.22834	0.01339	0.03243		
GWA27	GWA27 Communicating with supervisors, peers or subordinates		0.25016	-0.14019
0.16779	-0.04118	-0.11716		
GWA28	GWA28 Communicating with persons outside the organizations		0.22169	-0.39088
0.16258	0.41626	0.02707		
GWA40	GWA40 Performing administrative activities		0.59259	-0.03766
0.06963	0.19031	-0.02513		
GWA41	GWA41 Staffing organizational units		0.07164	0.03896
0.09247	0.04566	-0.01867		
KN2	KN2 Clerical		0.59525	-0.01888
0.01007	0.19677	-0.12958		
KN3	KN3 Economics and Accounting		0.55570	-0.16104
0.25217	0.26885	0.13248		
KN4	KN4 Sales and Marketing		0.14073	-0.08161
0.17134	0.67636	0.20333		
KN5	KN5 Customer and Personal Service		0.06694	-0.17488
0.17061	0.74479	-0.13537		
KN6	KN6 Personnel and Human Resources		0.12379	-0.02449
0.06517	-0.02691	-0.05256		
KN7	KN7 Production and Processing		0.05389	0.68621
0.13475	-0.09012	0.17386		
KN8	KN8 Food Production		0.02580	0.01449
0.24540	0.02529	0.72803		
KN9	KN9 Computers and Electronics		0.22093	-0.08027
0.03736	0.06756	-0.16697		
KN10	KN10 Engineering and Technology		0.08212	0.17021
0.02107	-0.20371	-0.14851		
KN11	KN11 Design		-0.01701	0.06304
0.12793	0.00431	-0.08532		
KN12	KN12 Building and Construction		-0.05407	-0.13647
0.13096	-0.12543	-0.16813		
KN13	KN13 Mechanical		-0.06726	0.25217
0.07484	-0.09532	-0.11989		
KN14	KN14 Mathematics		0.68351	-0.03589
0.03363	-0.03538	0.08237		
KN16	KN16 Chemistry		0.08401	0.21661
0.71531	-0.11088	0.19635		
KN17	KN17 Biology		0.00899	-0.13106
0.82604	-0.02040	0.30804		
KN20	KN20 Geography		0.06403	-0.14269
0.08000	0.09145	0.07857		
KN21	KN21 Medicine and Dentistry		-0.01242	-0.09856
0.80531	0.14054	-0.15788		
KN23	KN23 Education and Training		-0.02606	-0.22709
0.28274	0.09096	-0.12947		
KN29	KN29 Public Safety and Security		0.12109	-0.00338
0.27530	-0.04380	-0.17529		
KN31	KN31 Telecommunications		0.00805	-0.10937
0.11999	0.29007	-0.12126		

SAS OUTPUT

PRINCIPAL COMPONENT ANALYSIS OF CONCRETE-IMPORTANCE

The FACTOR Procedure
 Rotation Method: Varimax
 Rotated Factor Pattern

Factor8	Factor9	Factor10	Factor6	Factor7
KN32	KN32 Communications and Media		0.03676	-0.03834
0.04052	0.17049	-0.09419		
KN33	KN33 Transportation		0.01149	0.04332
0.08978	0.06362	0.05082		
SK3	SK3 Writing		0.37141	-0.19813
0.15226	-0.09921	0.11676		
SK4	SK4 Speaking		0.16287	-0.32471
0.17889	0.17190	-0.02190		
SK27	SK27 Equipment selection		-0.28357	0.23813
0.17805	-0.12200	0.07277		
SK28	SK28 Installation		-0.16866	-0.02832
0.10616	0.00050	-0.05059		
SK29	SK29 Programming		0.06847	-0.08770
0.05478	-0.20554	0.10701		
SK30	SK30 Testing		-0.00401	0.10613
0.17570	-0.18742	0.15619		
SK31	SK31 Operation monitoring		-0.08197	0.53472
0.10003	-0.22364	-0.04015		

Appendix E.

Principal Axes Analyses:
Correlations, Eigenvalues and Factor Loadings

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure

				Correlations						
KN8	KN9	KN10	KN11	KN1	KN2	KN3	KN4	KN5	KN6	KN7
	KN1	Administration and Management		1.00000	0.47769	0.70452	0.45591	0.38182	0.78433	-0.05681
0.16558	0.37841	0.01185	0.06949							
	KN2	Clerical		0.47769	1.00000	0.50974	0.27652	0.40661	0.37968	-0.20883
0.02094	0.45875	-0.21975	-0.15793							
	KN3	Economics and Accounting		0.70452	0.50974	1.00000	0.58714	0.39103	0.60282	-0.05361
0.12628	0.32770	-0.10223	0.00246							
	KN4	Sales and Marketing		0.45591	0.27652	0.58714	1.00000	0.51333	0.40711	-0.02929
0.14450	0.18478	-0.14560	0.02304							
	KN5	Customer and Personal Service		0.38182	0.40661	0.39103	0.51333	1.00000	0.38662	-0.29876
0.02976	0.15592	-0.28644	-0.12431							
	KN6	Personnel and Human Resources		0.78433	0.37968	0.60282	0.40711	0.38662	1.00000	-0.01114
0.14466	0.22747	-0.08364	-0.02121							
	KN7	Production and Processing		-0.05681	-0.20883	-0.05361	-0.02929	-0.29876	-0.01114	1.00000
0.16788	-0.05978	0.44057	0.42136							
	KN8	Food Production		0.16558	0.02094	0.12628	0.14450	0.02976	0.14466	0.16788
1.00000	-0.08180	-0.05862	-0.10300							
	KN9	Computers and Electronics		0.37841	0.45875	0.32770	0.18478	0.15592	0.22747	-0.05978
0.08180	1.00000	0.28349	0.29583							
	KN10	Engineering and Technology		0.01185	-0.21975	-0.10223	-0.14560	-0.28644	-0.08364	0.44057
0.05862	0.28349	1.00000	0.69630							
	KN11	Design		0.06949	-0.15793	0.00246	0.02304	-0.12431	-0.02121	0.42136
0.10300	0.29583	0.69630	1.00000							
	KN12	Building and Construction		-0.06710	-0.30134	-0.07246	-0.10250	-0.23578	-0.06693	0.27078
0.04959	-0.10775	0.53123	0.56115							
	KN13	Mechanical		-0.30537	-0.37165	-0.30470	-0.25568	-0.32994	-0.22455	0.43649
0.07393	-0.05194	0.70595	0.42223							
	KN14	Mathematics		0.61808	0.39728	0.58269	0.27030	0.11596	0.39721	0.10362
0.06694	0.55113	0.33379	0.35576							
	KN15	Physics		0.01707	-0.20496	-0.15477	-0.20975	-0.25218	-0.07818	0.33506
0.02295	0.17325	0.79796	0.53748							
	KN16	Chemistry		0.07363	-0.03348	-0.11278	-0.11660	-0.05498	-0.02866	0.18605
0.24525	0.02144	0.30176	0.09056							
	KN17	Biology		0.24428	0.10671	0.03044	0.01566	0.16237	0.10406	-0.13366
0.41390	0.04963	-0.02680	-0.10504							
	KN18	Psychology		0.60102	0.41732	0.38258	0.37704	0.58932	0.55310	-0.26370
0.04639	0.26523	-0.21534	-0.12563							
	KN19	Sociology and Anthropology		0.48501	0.35470	0.34928	0.28894	0.40144	0.36660	-0.25709
0.01654	0.25210	-0.19614	-0.06880							
	KN20	Geography		0.29863	0.22522	0.28527	0.26217	0.20225	0.17832	-0.18947
0.05271	0.23182	0.07082	0.08371							
	KN21	Medicine and Dentistry		0.16619	0.15370	-0.00871	0.00794	0.35429	0.10578	-0.20378
0.08721	0.08244	-0.09995	-0.13027							
	KN22	Therapy and Counseling		0.32755	0.24277	0.09619	0.09372	0.48343	0.28273	-0.29350
0.01217	0.13483	-0.20684	-0.16886							
	KN23	Education and Training		0.68299	0.35268	0.41488	0.34364	0.41192	0.57946	-0.13085
0.12879	0.35552	-0.00808	0.03477							
	KN24	English Language		0.68286	0.56256	0.46871	0.29321	0.28865	0.43916	-0.18475
0.05457	0.53582	-0.01660	0.06275							
	KN25	Foreign Language		0.20962	0.19047	0.14953	0.19095	0.23774	0.16067	-0.17987
0.02459	0.15951	-0.13467	-0.08080							
	KN26	Fine Arts		-0.04363	-0.15098	-0.07694	0.10641	0.01661	-0.03338	0.00301
0.06668	-0.08235	-0.10559	0.18514							
	KN27	History and Archeology		0.26795	0.18661	0.22317	0.15834	0.12868	0.15824	-0.08599
0.05399	0.19221	-0.02536	0.06818							
	KN28	Philosophy		0.32735	0.22199	0.26270	0.20062	0.23331	0.24538	-0.12914
0.05809	0.20394	-0.13291	-0.04269							
	KN29	Public Safety and Security		0.25235	0.11248	0.13782	0.05647	0.16442	0.21860	0.01749
0.07144	0.18096	0.31343	0.13749							
	KN30	Legal, Government and Jurisprudence		0.55852	0.44250	0.58603	0.31194	0.32412	0.48687	-0.19516
0.10083	0.31477	-0.07297	-0.02701							
	KN31	Telecommunications		0.32226	0.31902	0.25354	0.20407	0.24966	0.21287	-0.18611
0.04315	0.60041	0.17208	0.14272							
	KN32	Communications and Media		0.56920	0.45174	0.43726	0.43238	0.28563	0.42353	-0.14482
0.03331	0.47133	-0.08284	0.03661							
	KN33	Transportation		0.14658	0.10733	0.14333	0.14087	0.14757	0.11706	-0.04821
0.09878	0.05188	0.12141	-0.01981							

				Correlations						
KN19	KN20	KN21	KN22	KN12	KN13	KN14	KN15	KN16	KN17	KN18
	KN1	Administration and Management		-0.06710	-0.30537	0.61808	0.01707	0.07363	0.24428	0.60102
0.48501	0.29863	0.16619	0.32755							
	KN2	Clerical		-0.30134	-0.37165	0.39728	-0.20496	-0.03348	0.10671	0.41732
0.35470	0.22522	0.15370	0.24277							
	KN3	Economics and Accounting		-0.07246	-0.30470	0.58269	-0.15477	-0.11278	0.03044	0.38258
0.34928	0.28527	-0.00871	0.09619							
	KN4	Sales and Marketing		-0.10250	-0.25568	0.27030	-0.20975	-0.11660	0.01566	0.37704
0.28894	0.26217	0.00794	0.09372							
	KN5	Customer and Personal Service		-0.23578	-0.32994	0.11596	-0.25218	-0.05498	0.16237	0.58932
0.40144	0.20225	0.35429	0.48343							
	KN6	Personnel and Human Resources		-0.06693	-0.22455	0.39721	-0.07818	-0.02866	0.10406	0.55310
0.36660	0.17832	0.10578	0.28273							
	KN7	Production and Processing		0.27078	0.43649	0.10362	0.33506	0.18605	-0.13366	-0.26370
0.25709	-0.18947	-0.20378	-0.29350							
	KN8	Food Production		-0.04959	-0.07393	0.06694	-0.02295	0.24525	0.41390	0.04639
0.01654	0.05271	0.08721	0.01217							
	KN9	Computers and Electronics		-0.10775	-0.05194	0.55113	0.17325	0.02144	0.04963	0.26523
0.25210	0.23182	0.08244	0.13483							
	KN10	Engineering and Technology		0.53123	0.70595	0.33379	0.79796	0.30176	-0.02680	-0.21534
0.19614	0.07082	-0.09995	-0.20684							
	KN11	Design		0.56115	0.42223	0.35576	0.53748	0.09056	-0.10504	-0.12563
0.06880	0.08371	-0.13027	-0.16886							
	KN12	Building and Construction		1.00000	0.54305	0.06176	0.41945	0.03946	-0.13056	-0.22706
0.16445	0.00849	-0.16075	-0.20564							
	KN13	Mechanical		0.54305	1.00000	-0.07595	0.58261	0.16833	-0.18317	-0.36927

0.33501	-0.07994	-0.13633	-0.27841								
KN14	Mathematics			0.06176	-0.07595	1.00000	0.36972	0.21968	0.22536	0.31489	
0.28697	0.27135	0.07752	0.11919								
KN15	Physics			0.41945	0.58261	0.36972	1.00000	0.46725	0.15659	-0.14280	
0.11692	0.16945	0.03592	-0.10060								
KN16	Chemistry			0.03946	0.16833	0.21968	0.46725	1.00000	0.63416	0.04308	
0.01269	0.00301	0.42249	0.13786								
KN17	Biology			-0.13056	-0.18317	0.22536	0.15659	0.63416	1.00000	0.32218	
0.20705	0.06965	0.67855	0.40944								
KN18	Psychology			-0.22706	-0.36927	0.31489	-0.14280	0.04308	0.32218	1.00000	
0.71098	0.23828	0.46267	0.76364								
KN19	Sociology and Anthropology			-0.16445	-0.33501	0.28697	-0.11692	-0.01269	0.20705	0.71098	
1.00000	0.47561	0.23247	0.50567								
KN20	Geography			0.00849	-0.07994	0.27135	0.16945	0.00301	0.06965	0.23828	
0.47561	1.00000	-0.00313	0.04991								
KN21	Medicine and Dentistry			-0.16075	-0.13633	0.07752	0.03592	0.42249	0.67855	0.46267	
0.23247	-0.00313	1.00000	0.64950								
KN22	Therapy and Counseling			-0.20564	-0.27841	0.11919	-0.10060	0.13786	0.40944	0.76364	
0.50567	0.04991	0.64950	1.00000								
KN23	Education and Training			-0.11085	-0.23297	0.45544	0.05284	0.13822	0.31974	0.70501	
0.58433	0.24950	0.34440	0.58071								
KN24	English Language			-0.16187	-0.36891	0.59773	0.03727	0.15157	0.32307	0.58397	
0.59946	0.29969	0.27444	0.40230								
KN25	Foreign Language			-0.15595	-0.20017	0.08049	-0.08377	0.00404	0.10846	0.29511	
0.48249	0.39533	0.15969	0.25086								
KN26	Fine Arts			-0.00406	-0.17282	-0.15164	-0.12571	-0.07460	-0.10183	0.00433	
0.10574	-0.00895	-0.09374	-0.02448								
KN27	History and Archeology			-0.03476	-0.15172	0.23728	0.06015	0.06967	0.14316	0.27357	
0.66335	0.46706	0.05248	0.14037								
KN28	Philosophy			-0.11116	-0.20305	0.22598	-0.07557	0.02914	0.17854	0.50207	
0.72091	0.32427	0.20444	0.40806								
KN29	Public Safety and Security			0.21387	0.26546	0.19887	0.34546	0.24241	0.14628	0.22829	
0.22598	0.39417	0.23251	0.14056								
KN30	Legal, Government and Jurisprudence			-0.05988	-0.22537	0.42128	-0.02424	0.05506	0.16000	0.47119	
0.49128	0.45394	0.19477	0.25668								
KN31	Telecommunications			-0.06671	-0.02629	0.27312	0.11889	-0.03598	0.01270	0.26306	
0.24446	0.39087	0.08049	0.13748								
KN32	Communications and Media			-0.19159	-0.36906	0.38864	-0.06502	0.00350	0.13081	0.48205	
0.53189	0.37083	0.11947	0.24825								
KN33	Transportation			0.07191	0.14887	0.09442	0.17089	-0.03566	-0.01796	0.11971	
0.13709	0.57221	0.02245	0.00755								

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure

Correlations

KN30	KN31	KN32	KN33	KN23	KN24	KN25	KN26	KN27	KN28	KN29
KN1	Administration and Management			0.68299	0.68286	0.20962	-0.04363	0.26795	0.32735	0.25235
0.55852	0.32226	0.56920	0.14658							
KN2	Clerical			0.35268	0.56256	0.19047	-0.15098	0.18661	0.22199	0.11248
0.44250	0.31902	0.45174	0.10733							
KN3	Economics and Accounting			0.41488	0.46871	0.14953	-0.07694	0.22317	0.26270	0.13782
0.58603	0.25354	0.43726	0.14333							
KN4	Sales and Marketing			0.34364	0.29321	0.19095	0.10641	0.15834	0.20062	0.05647
0.31194	0.20407	0.43238	0.14087							
KN5	Customer and Personal Service			0.41192	0.28865	0.23774	0.01661	0.12868	0.23331	0.16442
0.32412	0.24966	0.28563	0.14757							
KN6	Personnel and Human Resources			0.57946	0.43916	0.16067	-0.03338	0.15824	0.24538	0.21860
0.48687	0.21287	0.42353	0.11706							
KN7	Production and Processing			-0.13085	-0.18475	-0.17987	0.00301	-0.08599	-0.12914	0.01749
0.19516	-0.18611	-0.14482	-0.04821							
KN8	Food Production			0.12879	0.05457	0.02459	-0.06668	0.05399	0.05809	0.07144
0.10083	-0.04315	0.03331	0.09878							
KN9	Computers and Electronics			0.35552	0.53582	0.15951	-0.08235	0.19221	0.20394	0.18096
0.31477	0.60041	0.47133	0.05188							
KN10	Engineering and Technology			-0.00808	-0.01660	-0.13467	-0.10559	-0.02536	-0.13291	0.31343
0.07297	0.17208	-0.08284	0.12141							
KN11	Design			0.03477	0.06275	-0.08080	0.18514	0.06818	-0.04269	0.13749
0.02701	0.14272	0.03661	-0.01981							
KN12	Building and Construction			-0.11085	-0.16187	-0.15595	-0.00406	-0.03476	-0.11116	0.21387
0.05988	-0.06671	-0.19159	0.07191							
KN13	Mechanical			-0.23297	-0.36891	-0.20017	-0.17282	-0.15172	-0.20305	0.26546
0.22537	-0.02629	-0.36906	0.14887							
KN14	Mathematics			0.45544	0.59773	0.08049	-0.15164	0.23728	0.22598	0.19887
0.42128	0.27312	0.38864	0.09442							
KN15	Physics			0.05284	0.03727	-0.08377	-0.12571	0.06015	-0.07557	0.34546
0.02424	0.11889	-0.06502	0.17089							
KN16	Chemistry			0.13822	0.15157	0.00404	-0.07460	0.06967	0.02914	0.24241
0.05506	-0.03598	0.00350	-0.03566							
KN17	Biology			0.31974	0.32307	0.10846	-0.10183	0.14316	0.17854	0.14628
0.16000	0.01270	0.13081	-0.01796							
KN18	Psychology			0.70501	0.58397	0.29511	0.00433	0.27357	0.50207	0.22829
0.47119	0.26306	0.48205	0.11971							
KN19	Sociology and Anthropology			0.58433	0.59946	0.48249	0.10574	0.66335	0.72091	0.22598
0.49128	0.24446	0.53189	0.13709							
KN20	Geography			0.24950	0.29969	0.39533	-0.00895	0.46706	0.32427	0.39417
0.45394	0.39087	0.37083	0.57221							
KN21	Medicine and Dentistry			0.34440	0.27444	0.15969	-0.09374	0.05248	0.20444	0.23251
0.19477	0.08049	0.11947	0.02245							
KN22	Therapy and Counseling			0.58071	0.40230	0.25086	-0.02448	0.14037	0.40806	0.14056
0.25668	0.13748	0.24825	0.00755							
KN23	Education and Training			1.00000	0.65708	0.33311	0.02560	0.35609	0.48979	0.26323
0.42816	0.29224	0.53181	0.09827							
KN24	English Language			0.65708	1.00000	0.36401	0.01187	0.42810	0.46813	0.18688
0.53315	0.35820	0.73480	0.04660							
KN25	Foreign Language			0.33311	0.36401	1.00000	0.11821	0.46697	0.42590	0.18528
0.24371	0.20784	0.34755	0.14283							
KN26	Fine Arts			0.02560	0.01187	0.11821	1.00000	0.20490	0.12837	-0.20092
0.14762	-0.03674	0.23770	-0.12233							
KN27	History and Archeology			0.35609	0.42810	0.46697	0.20490	1.00000	0.67473	0.11942
0.29759	0.13632	0.39792	0.04075							
KN28	Philosophy			0.48979	0.46813	0.42590	0.12837	0.67473	1.00000	0.20721

0.38690	0.16143	0.42412	0.08140								
KN29	Public Safety and Security			0.26323	0.18688	0.18528	-0.20092	0.11942	0.20721	1.00000	
0.57072	0.32990	0.15903	0.48684								
KN30	Legal, Government and Jurisprudence			0.42816	0.53315	0.24371	-0.14762	0.29759	0.38690	0.57072	
1.00000	0.36953	0.46170	0.32717								
KN31	Telecommunications			0.29224	0.35820	0.20784	-0.03674	0.13632	0.16143	0.32990	
0.36953	1.00000	0.48026	0.30001								
KN32	Communications and Media			0.53181	0.73480	0.34755	0.23770	0.39792	0.42412	0.15903	
0.46170	0.48026	1.00000	0.13257								
KN33	Transportation			0.09827	0.04660	0.14283	-0.12233	0.04075	0.08140	0.48684	
0.32717	0.30001	0.13257	1.00000								

PRINCIPAL AXES NALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Communality Estimates: SMC

KN9	KN1 KN10	KN2 KN11	KN3	KN4	KN5	KN6	KN7	KN8
	0.83230889	0.55852916	0.76378317	0.56965308	0.60063318	0.70646865	0.50184373	0.37987603
	0.66402036	0.84037059	0.72189960					
KN20	KN12 KN21	KN13 KN22	KN14	KN15	KN16	KN17	KN18	KN19
	0.54188718	0.73203538	0.74675142	0.76768824	0.62011262	0.75057710	0.83659586	0.80294923
	0.65753254	0.70547326	0.76729289					
KN31	KN23 KN32	KN24 KN33	KN25	KN26	KN27	KN28	KN29	KN30
	0.69707558	0.81160076	0.37941903	0.39685519	0.68113021	0.64596076	0.65130892	0.71319476
	0.55012019	0.71755254	0.53026493					

Eigenvalues of the Reduced Correlation Matrix: Total = 21.842765 Average = 0.66190197

	Eigenvalue	Difference	Proportion	Cumulative
1	8.76045018	4.71251849	0.4011	0.4011
2	4.04793169	1.61952900	0.1853	0.5864
3	2.42840269	0.64652183	0.1112	0.6976
4	1.78188086	0.24458620	0.0816	0.7791
5	1.53729466	0.35143898	0.0704	0.8495
6	1.18585569	0.08928232	0.0543	0.9038
7	1.09657337	0.40198630	0.0502	0.9540
8	0.69458706	0.24680750	0.0318	0.9858
9	0.44777957	0.05709623	0.0205	1.0063
10	0.39068333	0.03921345	0.0179	1.0242
11	0.35146988	0.13932590	0.0161	1.0403
12	0.21214398	0.02538012	0.0097	1.0500
13	0.18676386	0.05206755	0.0086	1.0586
14	0.13469631	0.02563383	0.0062	1.0647
15	0.10906248	0.02605822	0.0050	1.0697
16	0.08300426	0.02816117	0.0038	1.0735
17	0.05484309	0.04686489	0.0025	1.0760
18	0.00797820	0.03861605	0.0004	1.0764
19	-0.03063785	0.00751559	-0.0014	1.0750
20	-0.03815345	0.01676403	-0.0017	1.0732
21	-0.05491747	0.00654989	-0.0025	1.0707
22	-0.06146737	0.01240321	-0.0028	1.0679
23	-0.07387058	0.01140860	-0.0034	1.0645
24	-0.08527918	0.00905064	-0.0039	1.0606
25	-0.09432982	0.00547619	-0.0043	1.0563
26	-0.09980601	0.02015382	-0.0046	1.0517
27	-0.11995983	0.00781335	-0.0055	1.0462
28	-0.12777318	0.01224715	-0.0058	1.0404
29	-0.14002033	0.02323174	-0.0064	1.0340
30	-0.16325207	0.01657144	-0.0075	1.0265
31	-0.17982352	0.00526421	-0.0082	1.0183
32	-0.18508772	0.02917004	-0.0085	1.0098
33	-0.21425776		-0.0098	1.0000

8 factors will be retained by the NFACTOR criterion.

Final Communality Estimates: Total = 21.532976

KN9	KN1 KN10	KN2 KN11	KN3	KN4	KN5	KN6	KN7	KN8
	0.82347750	0.53723630	0.75054525	0.56387794	0.57854585	0.65742600	0.43157513	0.33703571
	0.68471218	0.87363566	0.72041035					
KN20	KN12 KN21	KN13 KN22	KN14	KN15	KN16	KN17	KN18	KN19
	0.48519374	0.71572522	0.72499584	0.75583256	0.63141114	0.79937158	0.84218047	0.82030759
	0.66495526	0.70173785	0.79323550					

PRINCIPAL AXES NALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

KN31	KN23 KN32	KN24 KN33	KN25	KN26	KN27	KN28	KN29	KN30
	0.68059074	0.79891403	0.36224181	0.38253800	0.70486201	0.64820357	0.63597274	0.66095165
	0.55624584	0.67938064	0.52965054					

PRINCIPAL AXES NALYSIS OF 33 KNOWLEDGE DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

7	8	1	2	3	4	5	6	
0.13611	0.02153	1	0.61661	-0.19351	0.48725	0.37711	0.36875	0.21852
0.14843	-0.12082	2	0.08250	0.90399	0.01939	-0.13053	0.25542	0.23817
0.68651	-0.19211	3	-0.35932	0.05039	0.02947	0.56522	-0.17324	-0.09894
0.22942	0.15116	4	-0.54424	0.02279	0.69017	-0.02292	-0.11126	0.37225
0.02308	0.30832	5	-0.01113	0.19833	0.39207	-0.07028	0.14094	-0.82851
0.16695	0.17371	6	0.42424	0.15191	0.17886	-0.14062	-0.82705	0.05584
0.58367	0.14084	7	0.04371	0.28252	-0.16887	0.70317	-0.17446	-0.06604
0.25774	0.88324	8	-0.07528	-0.00873	-0.26604	0.03987	0.14859	0.23079

Rotated Factor Pattern

Factor6	Factor7	Factor8	Factor1	Factor2	Factor3	Factor4	Factor5
KN1	Administration and Management		0.81478	0.01992	0.21850	0.18734	0.23621
0.06034	0.12406	-0.03930					
KN2	Clerical		0.43493	-0.31690	0.11201	0.10189	0.44292
0.08770	0.00388	-0.14436					
KN3	Economics and Accounting		0.81888	-0.11373	0.10978	-0.06747	0.17898
0.13260	-0.02784	-0.00716					
KN4	Sales and Marketing		0.58157	-0.12305	0.04943	0.05191	0.06333
0.18340	-0.01871	0.40913					
KN5	Customer and Personal Service		0.37478	-0.27626	0.02951	0.49219	0.08173
0.23407	-0.02162	0.23814					
KN6	Personnel and Human Resources		0.76870	-0.01723	0.10968	0.21820	0.02569
0.07005	-0.00516	-0.03160					
KN7	Production and Processing		0.09755	0.52456	-0.11994	-0.25545	-0.17390
0.15144	0.10587	0.05365					
KN8	Food Production		0.21797	-0.05809	-0.00027	-0.10734	-0.18310
0.08738	0.47973	0.05767					
KN9	Computers and Electronics		0.22914	0.13007	0.11095	0.07406	0.76887
0.04847	-0.04898	-0.03971					
KN10	Engineering and Technology		-0.06890	0.88561	-0.08451	-0.07457	0.22704
0.09357	0.07138	-0.08055					
KN11	Design		0.05967	0.77554	0.01916	-0.05865	0.21612
0.06023	-0.07615	0.23546					
KN12	Building and Construction		-0.01804	0.65366	-0.04013	-0.07018	-0.18038
0.08221	-0.10834	-0.00523					
KN13	Mechanical		-0.26113	0.72713	-0.18434	-0.06859	-0.14758
0.17523	-0.06583	-0.15270					
KN14	Mathematics		0.55867	0.29024	0.17207	-0.03459	0.47412
0.03454	0.19883	-0.17979					
KN15	Physics		-0.12743	0.76572	0.01976	-0.02746	0.18524
0.13897	0.26879	-0.16201					
KN16	Chemistry		-0.07783	0.26090	0.03191	0.12266	0.05753
0.01101	0.72532	-0.10817					
KN17	Biology		0.04017	-0.07669	0.10693	0.32185	0.06322
0.00924	0.81840	-0.05472					
KN18	Psychology		0.45621	-0.16812	0.33579	0.68652	0.12320
0.07233	0.03381	0.01268					
KN19	Sociology and Anthropology		0.28738	-0.14485	0.75807	0.33136	0.11180
0.13623	-0.02623	0.02295					
KN20	Geography		0.13847	0.01094	0.43170	-0.08398	0.20027
0.63636	0.02918	0.07960					
KN21	Medicine and Dentistry		-0.04349	-0.11028	0.04037	0.65962	0.08615
0.05336	0.48592	-0.06766					
KN22	Therapy and Counseling		0.12358	-0.16377	0.23419	0.81930	0.06297
0.03633	0.12698	-0.06024					
KN23	Education and Training		0.50290	0.03516	0.38332	0.46532	0.20677
0.02109	0.13958	0.01749					
KN24	English Language		0.45639	-0.07063	0.46178	0.20612	0.53994
0.05016	0.17946	-0.06041					
KN25	Foreign Language		0.05155	-0.14166	0.49849	0.12573	0.11539
0.20738	0.03131	0.13383					
KN26	Fine Arts		-0.07448	0.00163	0.22943	-0.02852	-0.03415
0.17211	-0.08479	0.53438					
KN27	History and Archeology		0.09867	0.01859	0.81586	-0.04997	0.08385
0.06583	0.07442	0.09880					
KN28	Philosophy		0.18046	-0.05996	0.74699	0.22110	0.03427
0.05899	0.02223	0.00405					
KN29	Public Safety and Security		0.13126	0.28854	0.12739	0.20184	0.05949
0.63455	0.11962	-0.24087					
KN30	Legal, Government and Jurisprudence		0.50821	-0.09333	0.29136	0.12343	0.20115
0.44166	0.05454	-0.23523					
KN31	Telecommunications		0.13616	0.03617	0.06788	0.12728	0.58833
0.39345	-0.08892	0.08211					
KN32	Communications and Media		0.40402	-0.12412	0.40550	0.09009	0.49471
0.10014	0.04419	0.26736					
KN33	Transportation		0.08781	0.06318	0.04091	-0.00554	0.01862
0.71746	-0.00307	-0.03379					

Variance Explained by Each Factor

Factor8	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
0.9390075	4.4192975	3.8184783	3.2869481	2.6659150	2.4406455	2.0193267	1.9433576

Final Commuality Estimates: Total = 21.532976

KN9	KN1 KN10	KN2 KN11	KN3	KN4	KN5	KN6	KN7	KN8
0.82347750 0.68471218	0.53723630 0.87363566	0.75054525 0.72041035		0.56387794	0.57854585	0.65742600	0.43157513	0.33703571
KN20	KN12 KN21	KN13 KN22	KN14	KN15	KN16	KN17	KN18	KN19
0.48519374 0.66495526	0.71572522 0.70173785	0.72499584 0.79323550		0.75583256	0.63141114	0.79937158	0.84218047	0.82030759
KN31	KN23 KN32	KN24 KN33	KN25	KN26	KN27	KN28	KN29	KN30
0.68059074 0.55624584	0.79891403 0.67938064	0.36224181 0.52965054		0.38253800	0.70486201	0.64820357	0.63597274	0.66095165

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS- IMPORTANCE SCALE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure

Correlations

KN8	KN9	KN10	KN11	KN1	KN2	KN3	KN4	KN5	KN6	KN7
KN1 Administration and Management	0.12043	0.23723	-0.13711	1.00000	0.31447	0.63208	0.38158	0.22471	0.76700	-0.15247
KN2 Clerical	0.02801	0.43259	-0.31249	0.31447	1.00000	0.44471	0.18645	0.32343	0.23720	-0.25401
KN3 Economics and Accounting	0.05012	0.22605	-0.24596	0.63208	0.44471	1.00000	0.52220	0.29342	0.49276	-0.15245
KN4 Sales and Marketing	0.07337	0.05390	-0.22281	0.38158	0.18645	0.52220	1.00000	0.45189	0.29551	-0.10754
KN5 Customer and Personal Service	0.01607	0.03434	-0.37396	0.22471	0.32343	0.29342	0.45189	1.00000	0.21542	-0.32613
KN6 Personnel and Human Resources	0.09943	0.10367	-0.17229	0.76700	0.23720	0.49276	0.29551	0.21542	1.00000	-0.09119
KN7 Production and Processing	0.11329	-0.16184	0.37055	-0.15247	-0.25401	-0.15245	-0.10754	-0.32613	-0.09119	1.00000
KN8 Food Production	1.00000	-0.14629	-0.09748	0.12043	-0.02801	0.05012	0.07337	0.01607	0.09943	0.11329
KN9 Computers and Electronics	0.14629	1.00000	0.16282	0.23723	0.43259	0.22605	0.05390	0.03434	0.10367	-0.16184
KN10 Engineering and Technology	0.09748	0.16282	1.00000	-0.13711	-0.31249	-0.24596	-0.22281	-0.37396	-0.17229	0.37055
KN11 Design	0.13321	0.15676	0.60403	-0.03954	-0.27472	-0.09889	-0.04449	-0.20497	-0.10986	0.32012
KN12 Building and Construction	0.08368	-0.20490	0.45520	-0.17819	-0.38282	-0.15777	-0.13701	-0.27165	-0.13419	0.16303
KN13 Mechanical	0.08476	-0.15843	0.67969	-0.40790	-0.39615	-0.38650	-0.27204	-0.33576	-0.27651	0.39457
KN14 Mathematics	0.03112	0.40223	0.13270	0.46877	0.35288	0.57101	0.24478	0.05635	0.28427	0.01678
KN15 Physics	0.06486	0.07608	0.73064	-0.11974	-0.28939	-0.26607	-0.24856	-0.32476	-0.13953	0.26696
KN16 Chemistry	0.21044	-0.07289	0.18954	-0.02707	-0.10609	-0.19555	-0.13491	-0.08831	-0.07872	0.13413
KN17 Biology	0.41123	-0.06594	-0.13219	0.15410	0.02141	-0.05835	-0.03286	0.09242	0.04060	-0.17926
KN18 Psychology	0.00569	0.13476	-0.30517	0.52664	0.26941	0.27697	0.30511	0.49681	0.45833	-0.32562
KN19 Sociology and Anthropology	0.02857	0.11876	-0.30674	0.42947	0.22637	0.25768	0.24516	0.31204	0.29756	-0.30251
KN20 Geography	0.00754	0.11352	-0.06185	0.20186	0.16948	0.20112	0.19133	0.17157	0.09844	-0.23885
KN21 Medicine and Dentistry	0.06562	0.02794	-0.14999	0.11357	0.12390	-0.05201	-0.03345	0.28278	0.06496	-0.24204
KN22 Therapy and Counseling	0.00016	0.04752	-0.24628	0.26558	0.17661	0.04858	0.03683	0.39665	0.24482	-0.29978
KN23 Education and Training	0.06789	0.21492	-0.14040	0.60195	0.21304	0.29511	0.26831	0.33217	0.50385	-0.23099
KN24 English Language	0.01707	0.47129	-0.21803	0.60789	0.53622	0.44409	0.30695	0.30789	0.40690	-0.32253
KN25 Foreign Language	0.02467	0.11577	-0.14010	0.15061	0.11873	0.08960	0.11167	0.13812	0.13776	-0.19019
KN26 Fine Arts	0.08501	-0.09677	-0.13671	-0.05395	-0.16166	-0.08876	0.06685	0.00133	-0.02848	0.00542
KN27 History and Archeology	0.00151	0.09031	-0.10910	0.17241	0.09026	0.12190	0.07033	0.03631	0.08965	-0.15368
KN28 Philosophy	0.01038	0.08685	-0.20393	0.27995	0.12637	0.16287	0.14796	0.17438	0.16558	-0.18874
KN29 Public Safety and Security	0.03286	0.08369	0.20546	0.16219	0.03346	0.03644	-0.01101	0.11584	0.14073	-0.05948
KN30 Legal, Government and Jurisprudence	0.05322	0.16734	-0.19355	0.45473	0.31408	0.48075	0.20739	0.18145	0.36410	-0.25759
KN31 Telecommunications	0.08175	0.50926	-0.03192	0.26366	0.37111	0.28505	0.22205	0.22871	0.17454	-0.28665
KN32 Communications and Media	0.03986	0.40229	-0.18724	0.46891	0.38641	0.36223	0.36557	0.20291	0.32841	-0.22653
KN33 Transportation	0.03801	-0.02291	0.02413	0.06337	0.07342	0.05927	0.07313	0.13351	0.07189	-0.07388

Correlations

KN19	KN20	KN21	KN22	KN12	KN13	KN14	KN15	KN16	KN17	KN18
KN1 Administration and Management	0.42947	0.20186	0.11357	-0.17819	-0.40790	0.46877	-0.11974	-0.02707	0.15410	0.52664
KN2 Clerical	0.22637	0.16948	0.12390	-0.38282	-0.39615	0.35288	-0.28939	-0.10609	0.02141	0.26941
KN3 Economics and Accounting	0.25768	0.20112	-0.05201	-0.15777	-0.38650	0.57101	-0.26607	-0.19555	-0.05835	0.27697

KN4	Sales and Marketing			-0.13701	-0.27204	0.24478	-0.24856	-0.13491	-0.03286	0.30511
0.24516	0.19133	-0.03345	0.03683							
KN5	Customer and Personal Service			-0.27165	-0.33576	0.05635	-0.32476	-0.08831	0.09242	0.49681
0.31204	0.17157	0.28278	0.39665							
KN6	Personnel and Human Resources			-0.13419	-0.27651	0.28427	-0.13953	-0.07872	0.04060	0.45833
0.29756	0.09844	0.06496	0.24482							
KN7	Production and Processing			0.16303	0.39457	0.01678	0.26696	0.13413	-0.17926	-0.32562
0.30251	-0.23885	-0.24204	-0.29978							
KN8	Food Production			-0.08368	-0.08476	0.03112	-0.06486	0.21044	0.41123	0.00569
0.02857	-0.00754	0.06562	0.00016							
KN9	Computers and Electronics			-0.20490	-0.15843	0.40223	0.07608	-0.07289	-0.06594	0.13476
0.11876	0.11352	0.02794	0.04752							
KN10	Engineering and Technology			0.45520	0.67969	0.13270	0.73064	0.18954	-0.13219	-0.30517
0.30674	-0.06185	-0.14999	-0.24628							
KN11	Design			0.49125	0.30370	0.19710	0.43639	-0.01193	-0.17292	-0.17895
0.15020	-0.03056	-0.17951	-0.20238							
KN12	Building and Construction			1.00000	0.47007	-0.07162	0.33836	-0.03418	-0.16745	-0.26119
0.22661	-0.06640	-0.17363	-0.20115							
KN13	Mechanical			0.47007	1.00000	-0.22493	0.49917	0.08689	-0.22564	-0.42786
0.42255	-0.16293	-0.18215	-0.28843							
KN14	Mathematics			-0.07162	-0.22493	1.00000	0.20568	0.10489	0.08374	0.20068
0.14362	0.17687	0.00781	0.02953							
KN15	Physics			0.33836	0.49917	0.20568	1.00000	0.33677	0.04296	-0.20292
0.21102	0.09650	-0.02011	-0.13145							
KN16	Chemistry			-0.03418	0.08689	0.10489	0.33677	1.00000	0.56146	-0.00089
0.07872	-0.07995	0.37295	0.09621							
KN17	Biology			-0.16745	-0.22564	0.08374	0.04296	0.56146	1.00000	0.25471
0.12809	-0.00784	0.63775	0.35309							
KN18	Psychology			-0.26119	-0.42786	0.20068	-0.20292	-0.00089	0.25471	1.00000
0.68178	0.16334	0.42486	0.75305							
KN19	Sociology and Anthropology			-0.22661	-0.42255	0.14362	-0.21102	-0.07872	0.12809	0.68178
1.00000	0.37344	0.18795	0.47330							
KN20	Geography			-0.06640	-0.16293	0.17687	0.09650	-0.07995	-0.00784	0.16334
0.37344	1.00000	-0.02665	0.01127							
KN21	Medicine and Dentistry			-0.17363	-0.18215	0.00781	-0.02011	0.37295	0.63775	0.42486
0.18795	-0.02665	1.00000	0.61728							
KN22	Therapy and Counseling			-0.20115	-0.28843	0.02953	-0.13145	0.09621	0.35309	0.75305
0.47330	0.01127	0.61728	1.00000							
KN23	Education and Training			-0.18663	-0.31655	0.29376	-0.03008	0.04285	0.23399	0.67844
0.52749	0.14506	0.29313	0.56322							
KN24	English Language			-0.32764	-0.52820	0.45970	-0.14403	-0.00513	0.17042	0.56951
0.52628	0.24572	0.22828	0.36435							
KN25	Foreign Language			-0.09521	-0.18371	-0.00230	-0.06333	-0.04594	0.00794	0.18800
0.35602	0.30019	0.10291	0.15516							
KN26	Fine Arts			0.00509	-0.18083	-0.17764	-0.11237	-0.04396	-0.10469	0.02404
0.09214	-0.05759	-0.09373	-0.03469							
KN27	History and Archeology			-0.06398	-0.19713	0.08801	0.00403	-0.01053	0.05296	0.20187
0.55564	0.32284	0.00261	0.08762							
KN28	Philosophy			-0.15567	-0.25393	0.09677	-0.12273	-0.02500	0.10205	0.44177
0.64730	0.23681	0.13206	0.35010							
KN29	Public Safety and Security			0.08380	0.13974	0.09517	0.29590	0.16916	0.07313	0.17263
0.14339	0.34318	0.19482	0.09968							
KN30	Legal, Government and Jurisprudence			-0.14636	-0.31915	0.32168	-0.11707	-0.03294	0.06576	0.34717
0.40026	0.39374	0.11509	0.17331							
KN31	Telecommunications			-0.19090	-0.20270	0.17702	-0.03086	-0.16421	-0.10322	0.21588
0.20194	0.38101	0.02092	0.09630							
KN32	Communications and Media			-0.27257	-0.43109	0.29266	-0.11009	-0.07493	0.01882	0.40190
0.43907	0.30435	0.05312	0.18474							
KN33	Transportation			-0.01250	0.08158	0.02211	0.12094	-0.10224	-0.09007	0.04169
0.04763	0.58488	-0.01169	-0.01325							

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure

Correlations

KN30	KN31	KN32	KN33	KN23	KN24	KN25	KN26	KN27	KN28	KN29
KN1	Administration and Management			0.60195	0.60789	0.15061	-0.05395	0.17241	0.27995	0.16219
0.45473	0.26366	0.46891	0.06337							
KN2	Clerical			0.21304	0.53622	0.11873	-0.16166	0.09026	0.12637	0.03346
0.31408	0.37111	0.38641	0.07342							
KN3	Economics and Accounting			0.29511	0.44409	0.08960	-0.08876	0.12190	0.16287	0.03644
0.48075	0.28505	0.36223	0.05927							
KN4	Sales and Marketing			0.26831	0.30695	0.11167	0.06685	0.07033	0.14796	-0.01101
0.20739	0.22205	0.36557	0.07313							
KN5	Customer and Personal Service			0.33217	0.30789	0.13812	0.00133	0.03631	0.17438	0.11584
0.18145	0.22871	0.20291	0.13351							
KN6	Personnel and Human Resources			0.50385	0.40690	0.13776	-0.02848	0.08965	0.16558	0.14073
0.36410	0.17454	0.32841	0.07189							
KN7	Production and Processing			-0.23099	-0.32253	-0.19019	0.00542	-0.15368	-0.18874	-0.05948
0.25759	-0.28665	-0.22653	-0.07388							
KN8	Food Production			0.06789	0.01707	-0.02467	-0.08501	-0.00151	0.01038	0.03286
0.05322	-0.08175	-0.03986	0.03801							
KN9	Computers and Electronics			0.21492	0.47129	0.11577	-0.09677	0.09031	0.08685	0.08369
0.16734	0.50926	0.40229	-0.02291							
KN10	Engineering and Technology			-0.14040	-0.21803	-0.14010	-0.13671	-0.10910	-0.20393	0.20546
0.19355	-0.03192	-0.18724	0.02413							
KN11	Design			-0.07167	-0.12646	-0.10031	0.22071	-0.02434	-0.12528	0.02325
0.12945	-0.02746	-0.05827	-0.11180							
KN12	Building and Construction			-0.18663	-0.32764	-0.09521	0.00509	-0.06398	-0.15567	0.08380
0.14636	-0.19090	-0.27257	-0.01250							
KN13	Mechanical			-0.31655	-0.52820	-0.18371	-0.18083	-0.19713	-0.25393	0.13974
0.31915	-0.20270	-0.43109	0.08158							
KN14	Mathematics			0.29376	0.45970	-0.00230	-0.17764	0.08801	0.09677	0.09517
0.32168	0.17702	0.29266	0.02211							
KN15	Physics			-0.03008	-0.14403	-0.06333	-0.11237	0.00403	-0.12273	0.29590
0.11707	-0.03086	-0.11009	0.12094							
KN16	Chemistry			0.04285	-0.00513	-0.04594	-0.04396	-0.01053	-0.02500	0.16916
0.03294	-0.16421	-0.07493	-0.10224							
KN17	Biology			0.23399	0.17042	0.00794	-0.10469	0.05296	0.10205	0.07313
0.06576	-0.10322	0.01882	-0.09007							
KN18	Psychology			0.67844	0.56951	0.18800	0.02404	0.20187	0.44177	0.17263
0.34717	0.21588	0.40190	0.04169							

KN19	Sociology and Anthropology			0.52749	0.52628	0.35602	0.09214	0.55564	0.64730	0.14339
0.40026	0.20194	0.43907	0.04763							
KN20	Geography			0.14506	0.24572	0.30019	-0.05759	0.32284	0.23681	0.34318
0.39374	0.38101	0.30435	0.58488							
KN21	Medicine and Dentistry			0.29313	0.22828	0.10291	-0.09373	0.00261	0.13206	0.19482
0.11509	0.02092	0.05312	-0.01169							
KN22	Therapy and Counseling			0.56322	0.36435	0.15516	-0.03469	0.08762	0.35010	0.09968
0.17331	0.09630	0.18474	-0.01325							
KN23	Education and Training			1.00000	0.58287	0.24563	0.00988	0.27264	0.42405	0.19643
0.30135	0.20908	0.43362	0.02108							
KN24	English Language			0.58287	1.00000	0.33438	-0.04724	0.31130	0.36398	0.16182
0.49148	0.40905	0.72152	0.04722							
KN25	Foreign Language			0.24563	0.33438	1.00000	0.04103	0.39500	0.33696	0.17984
0.19209	0.20015	0.29121	0.17419							
KN26	Fine Arts			0.00988	-0.04724	0.04103	1.00000	0.14985	0.08694	-0.19259
0.13215	-0.07290	0.18813	-0.13393							
KN27	History and Archeology			0.27264	0.31130	0.39500	0.14985	1.00000	0.60540	0.05189
0.19190	0.09155	0.27739	0.00385							
KN28	Philosophy			0.42405	0.36398	0.33696	0.08694	0.60540	1.00000	0.12706
0.25759	0.12092	0.33062	0.03019							
KN29	Public Safety and Security			0.19643	0.16182	0.17984	-0.19259	0.05189	0.12706	1.00000
0.51770	0.26192	0.13225	0.44232							
KN30	Legal, Government and Jurisprudence			0.30135	0.49148	0.19209	-0.13215	0.19190	0.25759	0.51770
1.00000	0.32165	0.36122	0.23920							
KN31	Telecommunications			0.20908	0.40905	0.20015	-0.07290	0.09155	0.12092	0.26192
0.32165	1.00000	0.49866	0.28982							
KN32	Communications and Media			0.43362	0.72152	0.29121	0.18813	0.27739	0.33062	0.13225
0.36122	0.49866	1.00000	0.10972							
KN33	Transportation			0.02108	0.04722	0.17419	-0.13393	0.00385	0.03019	0.44232
0.23920	0.28982	0.10972	1.00000							

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Community Estimates: SMC

	KN1	KN2	KN3	KN4	KN5	KN6	KN7	KN8
KN9	KN10	KN11						
	0.79109080	0.52724056	0.71783303	0.48820950	0.51559546	0.65194261	0.42407694	0.32468994
	0.56365654	0.79147079	0.62981014					
KN20	KN12	KN13	KN14	KN15	KN16	KN17	KN18	KN19
	KN21	KN22						
	0.46636784	0.70894061	0.64091764	0.67781691	0.50442015	0.68974741	0.80533543	0.73011886
	0.59646607	0.65587391	0.74232138					
KN31	KN23	KN24	KN25	KN26	KN27	KN28	KN29	KN30
	KN32	KN33						
	0.63755574	0.78931089	0.30639241	0.38373932	0.55241171	0.54796319	0.59187812	0.62091743
	0.51437898	0.66730087	0.52238928					

Eigenvalues of the Reduced Correlation Matrix: Total = 19.7781805 Average = 0.5993388

	Eigenvalue	Difference	Proportion	Cumulative
1	7.75943090	4.88397371	0.3923	0.3923
2	2.87545719	0.43228945	0.1454	0.5377
3	2.44316775	0.65183149	0.1235	0.6612
4	1.79133626	0.20369412	0.0906	0.7518
5	1.58764213	0.32500990	0.0803	0.8321
6	1.26263223	0.18841830	0.0638	0.8959
7	1.07421393	0.39801753	0.0543	0.9502
8	0.67619640	0.12840625	0.0342	0.9844
9	0.54779015	0.08838338	0.0277	1.0121
10	0.45940677	0.13814753	0.0232	1.0353
11	0.32125924	0.02657895	0.0162	1.0516
12	0.29468029	0.09291554	0.0149	1.0665
13	0.20176475	0.04860508	0.0102	1.0767
14	0.15315968	0.01234886	0.0077	1.0844
15	0.14081082	0.05304478	0.0071	1.0916
16	0.08776604	0.03066196	0.0044	1.0960
17	0.05710407	0.04495598	0.0029	1.0989
18	0.01214809	0.03895134	0.0006	1.0995
19	-0.02680325	0.02720883	-0.0014	1.0981
20	-0.05401207	0.00900700	-0.0027	1.0954
21	-0.06301908	0.01049258	-0.0032	1.0922
22	-0.07351165	0.00888963	-0.0037	1.0885
23	-0.08240129	0.02307396	-0.0042	1.0843
24	-0.10547524	0.00745747	-0.0053	1.0790
25	-0.11293271	0.02023951	-0.0057	1.0733
26	-0.13317222	0.01065407	-0.0067	1.0666
27	-0.14382629	0.02228415	-0.0073	1.0593
28	-0.16611044	0.00161121	-0.0084	1.0509
29	-0.16772165	0.01114898	-0.0085	1.0424
30	-0.17887062	0.01743234	-0.0090	1.0334
31	-0.19630296	0.01785818	-0.0099	1.0234
32	-0.21416114	0.03530447	-0.0108	1.0126
33	-0.24946561		-0.0126	1.0000

9 factors will be retained by the NFACTOR criterion.

Final Community Estimates: Total = 20.017867

	KN1	KN2	KN3	KN4	KN5	KN6	KN7	KN8
KN9	KN10	KN11						
	0.81909349	0.55014829	0.75535009	0.48585988	0.52903522	0.66255884	0.34630651	0.28010297
	0.61149735	0.82986384	0.64355274					
KN20	KN12	KN13	KN14	KN15	KN16	KN17	KN18	KN19

KN20	KN21	KN22						
0.42280710	0.68365350	0.66680939	0.68675361	0.52428755	0.74937847	0.82427808	0.75391920	
0.61366921	0.65915424	0.76844079						

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

KN31	KN23	KN24	KN25	KN26	KN27	KN28	KN29	KN30
0.64525825	0.78713367	0.27858745	0.38919468	0.60534963	0.57870590	0.57689185	0.52985114	
0.53668390	0.68708784	0.53660227						

PRINCIPAL AXES ANALYSIS OF 33 KNOWLEDGE DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

		1	2	3	4	5	6	7
8	9							
	1	-0.38830	0.46549	0.41560	0.40175	0.41975	0.20517	0.06459
0.27553	0.00677	0.72927	0.23057	0.37862	-0.27162	0.06813	0.38155	-0.14481
0.11211	-0.11881	0.39905	-0.02942	-0.15952	0.51893	0.13189	0.05626	0.65025
-0.29630	-0.11821	-0.05603	-0.41334	-0.21884	0.03951	0.55034	0.52046	-0.31341
-0.26522	0.18504	0.32466	0.18093	-0.10280	0.05180	0.47994	-0.64039	-0.21839
0.01845	0.40016	0.02773	0.51273	-0.76744	-0.06215	-0.02326	0.25314	-0.03109
0.27625	-0.04013	-0.16022	-0.02653	0.00465	-0.67654	0.41411	-0.03781	0.58251
0.05948	-0.01125	0.09984	-0.24274	0.03463	0.08514	-0.22259	0.20112	0.25066
0.48706	0.72980	0.11490	-0.45076	-0.09920	0.14991	0.21673	-0.14907	-0.05472
0.66027	-0.49311							

Rotated Factor Pattern

Factor7	Factor8	Factor9	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
KN1	Administration and Management		-0.05989	0.79632	0.24174	0.13584	0.17305	0.06564
0.08960	0.24836	-0.02309						
KN2	Clerical		-0.37058	0.12725	0.54015	0.09481	0.04375	0.05458
-0.04945	0.19016	-0.22886						
KN3	Economics and Accounting		-0.19040	0.47872	0.25769	-0.05754	0.08593	0.05253
-0.08953	0.60382	-0.19351						
KN4	Sales and Marketing		-0.14872	0.26472	0.07835	0.08948	0.03581	0.11618
-0.07054	0.56676	0.19634						
KN5	Customer and Personal Service		-0.31380	0.06002	0.06017	0.48781	0.00149	0.18337
-0.05671	0.37837	0.07336						
KN6	Personnel and Human Resources		-0.10307	0.77878	0.07060	0.13833	0.05351	0.07532
-0.01837	0.11109	-0.01039						
KN7	Production and Processing		0.36938	0.06497	-0.20588	-0.31720	-0.16805	-0.16797
0.04934	-0.06061	0.00904						
KN8	Food Production		-0.12661	0.16205	-0.15645	-0.11090	-0.03292	0.04347
0.43988	0.06734	-0.00567						
KN9	Computers and Electronics		0.09811	0.05241	0.76019	0.04130	0.04956	-0.00528
-0.10190	0.00980	-0.08101						
KN10	Engineering and Technology		0.86593	-0.06090	0.07917	-0.12235	-0.13958	0.04132
0.00232	-0.14908	-0.10802						
KN11	Design		0.72705	-0.03680	0.07248	-0.08361	-0.02846	-0.11459
-0.10497	0.15761	0.22704						
KN12	Building and Construction		0.54867	-0.06995	-0.29202	-0.08787	-0.05567	0.01403
-0.14178	0.02172	0.00205						
KN13	Mechanical		0.59994	-0.19290	-0.29491	-0.13243	-0.23621	0.08765
-0.13166	-0.25936	-0.18419						
KN14	Mathematics		0.21591	0.31046	0.45631	-0.06118	0.09508	-0.04519
0.16168	0.44553	-0.27591						
KN15	Physics		0.75001	-0.07851	0.07118	-0.07505	-0.01525	0.16188
0.21083	-0.16796	-0.09101						
KN16	Chemistry		0.18845	-0.05514	-0.00740	0.07460	-0.02050	-0.03020
0.68165	-0.11009	-0.04491						
KN17	Biology		-0.11341	0.00093	-0.00719	0.29202	0.05394	-0.04112
0.80298	-0.00038	-0.04259						
KN18	Psychology		-0.16258	0.39181	0.12384	0.71852	0.30079	0.04835
0.02785	0.13173	0.04217						
KN19	Sociology and Anthropology		-0.17446	0.23275	0.09625	0.35988	0.70908	0.09956
-0.04191	0.11598	0.05111						
KN20	Geography		-0.02249	-0.01403	0.14459	-0.03714	0.34219	0.65724
-0.01528	0.20287	0.01534						
KN21	Medicine and Dentistry		-0.10561	-0.05614	0.07144	0.62830	0.00478	0.03354
0.48166	-0.06409	-0.08795						
KN22	Therapy and Counseling		-0.14123	0.15855	0.04458	0.81390	0.18709	-0.03839
0.11991	-0.07191	-0.05395						
KN23	Education and Training		-0.00415	0.50326	0.20023	0.47912	0.32287	0.03277
0.09952	0.06208	0.05693						
KN24	English Language		-0.18204	0.39370	0.62594	0.23925	0.33982	0.08142
0.09902	0.13294	0.01929						
KN25	Foreign Language		-0.10021	0.04968	0.12629	0.07853	0.41699	0.24139

-0.02390	-0.04541	0.09579						
KN26	Fine Arts		-0.00876	-0.03573	-0.06134	-0.02884	0.14821	-0.15862
-0.07470	0.03458	0.57389						
KN27	History and Archeology		-0.01228	0.01961	0.06830	-0.03951	0.76904	0.04314
0.02341	0.02956	0.06227						
KN28	Philosophy		-0.09212	0.13316	0.03796	0.20933	0.71055	0.03924
0.00018	0.02543	0.01250						
KN29	Public Safety and Security		0.21865	0.15417	0.05509	0.14982	0.07204	0.64452
0.12547	-0.10053	-0.18275						
KN30	Legal, Government and Jurisprudence		-0.14910	0.36690	0.21051	0.06082	0.24760	0.42620
0.04886	0.17237	-0.22348						
KN31	Telecommunications		-0.07972	0.08223	0.55783	0.09631	0.03302	0.40550
-0.16800	0.07178	0.06493						
KN32	Communications and Media		-0.13973	0.31778	0.56987	0.07876	0.28902	0.18011
-0.00815	0.10572	0.32926						
KN33	Transportation		-0.00604	0.00904	-0.01256	-0.01443	-0.00512	0.72766
-0.05875	0.02929	-0.04792						

Variance Explained by Each Factor

Factor8	Factor9	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
1.4656421	0.8861570	3.3037253	2.6781659	2.6670124	2.6432727	2.5753768	2.0112882	1.7872265

Final Communality Estimates: Total = 20.017867

KN9	KN1	KN2	KN3	KN4	KN5	KN6	KN7	KN8
	KN10	KN11						
	0.81909349	0.55014829	0.75535009	0.48585988	0.52903522	0.66255884	0.34630651	0.28010297
	0.61149735	0.82986384	0.64355274					
KN20	KN12	KN13	KN14	KN15	KN16	KN17	KN18	KN19
	KN21	KN22						
	0.42280710	0.68365350	0.66680939	0.68675361	0.52428755	0.74937847	0.82427808	0.75391920
	0.61366921	0.65915424	0.76844079					
KN31	KN23	KN24	KN25	KN26	KN27	KN28	KN29	KN30
	KN32	KN33						
	0.64525825	0.78713367	0.27858745	0.38919468	0.60534963	0.57870590	0.57689185	0.52985114
	0.53668390	0.68708784	0.53660227					

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure

Correlations

sk7	sk8	sk9	sk10	sk1	sk2	sk3	sk4	sk5	sk6
sk1	Reading comprehension			1.00000	0.83537	0.92081	0.84483	0.68703	0.54354
0.87420	0.88444	0.77224	0.79619						
sk2	Active listening			0.83537	1.00000	0.83316	0.94782	0.51670	0.31561
0.80449	0.77840	0.73966	0.76322						
sk3	Writing			0.92081	0.83316	1.00000	0.85356	0.64873	0.47431
0.84815	0.84943	0.75318	0.77340						
sk4	Speaking			0.84483	0.94782	0.85356	1.00000	0.54743	0.34150
0.82833	0.80388	0.77515	0.79026						
sk5	Mathematics			0.68703	0.51670	0.64873	0.54743	1.00000	0.64907
0.70376	0.71191	0.55474	0.58434						
sk6	Science			0.54354	0.31561	0.47431	0.34150	0.64907	1.00000
0.59055	0.61544	0.47628	0.45499						
sk7	Critical thinking			0.87420	0.80449	0.84815	0.82833	0.70376	0.59055
1.00000	0.93913	0.81313	0.84950						
sk8	Active learning			0.88444	0.77840	0.84943	0.80388	0.71191	0.61544
0.93913	1.00000	0.84664	0.86144						
sk9	Learning strategies			0.77224	0.73966	0.75318	0.77515	0.55474	0.47628
0.81313	0.84664	1.00000	0.84513						
sk10	Monitoring			0.79619	0.76322	0.77340	0.79026	0.58434	0.45499
0.84950	0.86144	0.84513	1.00000						
sk11	Social Perceptiveness			0.66068	0.84031	0.69362	0.84439	0.31633	0.13670
0.66283	0.63772	0.71921	0.70615						
sk12	Coordination			0.65020	0.75471	0.66203	0.78333	0.45693	0.29463
0.72757	0.69527	0.70587	0.73942						
sk13	Persuasion			0.71507	0.81434	0.74051	0.84656	0.46506	0.24760
0.75763	0.72701	0.72478	0.73545						
sk14	Negotiation			0.64308	0.74025	0.68675	0.76412	0.45622	0.16864
0.70143	0.65619	0.63796	0.69045						
sk15	Instructing			0.66593	0.70524	0.66152	0.76723	0.44382	0.37400
0.69723	0.69702	0.84283	0.72695						
sk16	Service orientation			0.43721	0.64404	0.45489	0.62122	0.15880	0.03495
0.40830	0.38129	0.50350	0.42940						
sk17	Problem identification			0.79041	0.74378	0.76327	0.75821	0.68456	0.55832
0.87077	0.82148	0.72563	0.78176						
sk18	Information gathering			0.89715	0.79813	0.88714	0.82428	0.72097	0.53063
0.89261	0.89158	0.73619	0.78067						
sk19	Information organization			0.87098	0.76773	0.85789	0.78156	0.68703	0.49098
0.84032	0.86797	0.74527	0.77379						
sk20	Synthesis/Reorganization			0.86776	0.77526	0.84780	0.78625	0.68102	0.51050
0.87918	0.90652	0.78651	0.82089						
sk21	Idea generation			0.81148	0.75554	0.80551	0.79182	0.62707	0.50130
0.88356	0.90745	0.82521	0.83993						
sk22	Idea evaluation			0.83030	0.76664	0.81812	0.79836	0.64901	0.51667
0.89875	0.91960	0.83422	0.85901						
sk23	Implentation planning			0.78522	0.77083	0.78250	0.81381	0.62525	0.44773
0.85316	0.86089	0.80952	0.83073						
sk24	Solution appraisal			0.81510	0.75750	0.78804	0.78667	0.67195	0.52829
0.88646	0.89485	0.82914	0.87098						
sk25	Operations analysis			0.58221	0.45833	0.55949	0.50545	0.66384	0.53695
0.64771	0.69382	0.59522	0.62018						
sk26	Technical design			0.22360	0.09104	0.14185	0.10691	0.40943	0.51363
0.27059	0.30501	0.22584	0.22487						

sk27	Equipment selection			0.24925	0.06364	0.17046	0.09926	0.44874	0.59814
0.33953	0.37167	0.28151	0.28531						
sk28	Installation			-0.19307	-0.30063	-0.26582	-0.28294	0.06857	0.22548
0.12521	-0.13452	-0.15343	-0.16425						
sk29	Programming			0.51421	0.37956	0.50515	0.39629	0.56878	0.49185
0.51112	0.54775	0.43917	0.43306						
sk30	Testing			0.24295	0.04820	0.17729	0.07565	0.43163	0.68466
0.30470	0.30365	0.21031	0.21975						
sk31	Operation monitoring			-0.11502	-0.26873	-0.16397	-0.23752	0.09295	0.37713
0.06972	-0.10901	-0.14815	-0.10250						
sk32	Operation and control			-0.19798	-0.33239	-0.25625	-0.30130	-0.01152	0.22431
0.15854	-0.19138	-0.18708	-0.15208						
sk33	Product inspection			0.21967	0.00938	0.16781	0.05239	0.39722	0.44565
0.25640	0.28031	0.19727	0.24775						
sk34	Equipment maintenance			-0.35411	-0.43859	-0.38256	-0.41767	-0.11721	0.13702
0.28710	-0.32753	-0.29441	-0.31893						
sk35	Troubleshooting			-0.07411	-0.16985	-0.10695	-0.14902	0.15545	0.35281
0.00523	-0.02658	-0.06894	-0.03747						
sk36	Repairing			-0.35764	-0.42509	-0.38253	-0.40991	-0.12161	0.09946
0.27915	-0.31239	-0.28786	-0.30241						
sk37	Visioning			0.76153	0.70895	0.74226	0.74674	0.63809	0.46952
0.85347	0.86258	0.79499	0.82945						
sk38	Systems perceptions			0.72650	0.68725	0.72258	0.72373	0.62427	0.48873
0.83556	0.80482	0.72153	0.78662						
sk39	Identification of downstream consequences			0.75599	0.70233	0.75286	0.73880	0.67285	0.51010
0.85532	0.84198	0.75465	0.80929						
sk40	Identification of key causes			0.78161	0.75926	0.77176	0.78905	0.63994	0.47468
0.86788	0.85190	0.78906	0.83849						
sk41	Judgment and decision making			0.80391	0.78091	0.78053	0.80395	0.65169	0.48092
0.89609	0.86668	0.74555	0.82688						
sk42	Systems evaluation			0.73626	0.69893	0.74437	0.73848	0.67101	0.47677
0.82854	0.81281	0.73380	0.80944						
sk43	Time management			0.69343	0.72878	0.70600	0.77252	0.49497	0.29679
0.74408	0.74217	0.77563	0.78450						
sk44	Management of financial resources			0.56599	0.60071	0.61365	0.63679	0.50563	0.15831
0.60193	0.59569	0.58134	0.62712						
sk45	Management of material resources			0.53400	0.51313	0.54715	0.56792	0.49214	0.35050
0.59611	0.60743	0.60607	0.61742						
sk46	Management of personnel resources			0.57352	0.59727	0.60495	0.66278	0.42792	0.25806
0.62557	0.62309	0.68887	0.68566						

Correlations

sk17	sk18	sk19	sk20	sk11	sk12	sk13	sk14	sk15	sk16
sk1	Reading comprehension			0.66068	0.65020	0.71507	0.64308	0.66593	0.43721
0.79041	0.89715	0.87098	0.86776						
sk2	Active listening			0.84031	0.75471	0.81434	0.74025	0.70524	0.64404
0.74378	0.79813	0.76773	0.77526						
sk3	Writing			0.69362	0.66203	0.74051	0.68675	0.66152	0.45489
0.76327	0.88714	0.85789	0.84780						
sk4	Speaking			0.84439	0.78333	0.84656	0.76412	0.76723	0.62122
0.75821	0.82428	0.78156	0.78625						
sk5	Mathematics			0.31633	0.45693	0.46506	0.45622	0.44382	0.15880
0.68456	0.72097	0.68703	0.68102						
sk6	Science			0.13670	0.29463	0.24760	0.16864	0.37400	0.03495
0.55832	0.53063	0.49098	0.51050						
sk7	Critical thinking			0.66283	0.72757	0.75763	0.70143	0.69723	0.40830
0.87077	0.89261	0.84032	0.87918						
sk8	Active learning			0.63772	0.69527	0.72701	0.65619	0.69702	0.38129
0.82148	0.89158	0.86797	0.90652						

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure

Correlations

sk17	sk18	sk19	sk20	sk11	sk12	sk13	sk14	sk15	sk16
sk9	Learning strategies			0.71921	0.70587	0.72478	0.63796	0.84283	0.50350
0.72563	0.73619	0.74527	0.78651						
sk10	Monitoring			0.70615	0.73942	0.73545	0.69045	0.72695	0.42940
0.78176	0.78067	0.77379	0.82089						
sk11	Social Perceptiveness			1.00000	0.73105	0.82708	0.75249	0.72269	0.78676
0.61652	0.62726	0.59813	0.61639						
sk12	Coordination			0.73105	1.00000	0.74537	0.75180	0.72221	0.49353
0.66235	0.64798	0.61640	0.66294						
sk13	Persuasion			0.82708	0.74537	1.00000	0.89346	0.71901	0.62923
0.71543	0.72907	0.67294	0.69887						
sk14	Negotiation			0.75249	0.75180	0.89346	1.00000	0.62991	0.52964
0.66132	0.66541	0.60717	0.63692						
sk15	Instructing			0.72269	0.72221	0.71901	0.62991	1.00000	0.56079
0.63600	0.61370	0.60641	0.63075						
sk16	Service orientation			0.78676	0.49353	0.62923	0.52964	0.56079	1.00000
0.45112	0.38786	0.36971	0.34471						
sk17	Problem identification			0.61652	0.66235	0.71543	0.66132	0.63600	0.45112
1.00000	0.83883	0.76424	0.78206						
sk18	Information gathering			0.62726	0.64798	0.72907	0.66541	0.61370	0.38786
0.83883	1.00000	0.91977	0.89426						
sk19	Information organization			0.59813	0.61640	0.67294	0.60717	0.60641	0.36971
0.76424	0.91977	1.00000	0.92155						
sk20	Synthesis/Reorganization			0.61639	0.66294	0.69887	0.63692	0.63075	0.34471
0.78206	0.89426	0.92155	1.00000						
sk21	Idea generation			0.67402	0.74068	0.75450	0.69540	0.70190	0.40906
0.79900	0.84800	0.82142	0.88578						
sk22	Idea evaluation			0.67546	0.74615	0.76357	0.70459	0.70313	0.40997
0.82953	0.86682	0.84027	0.89238						
sk23	Implementation planning			0.71441	0.79731	0.79314	0.74423	0.73710	0.48087
0.80243	0.83222	0.79569	0.83661						
sk24	Solution appraisal			0.65886	0.72511	0.74312	0.68418	0.69749	0.43523
0.86864	0.85543	0.82606	0.86547						
sk25	Operations analysis			0.34081	0.51435	0.49242	0.46603	0.50066	0.17554
0.64034	0.62776	0.61609	0.66733						
sk26	Technical design			-0.02733	0.13067	0.05206	0.00423	0.19418	-0.00210

0.32837	0.22557	0.22261	0.27193						
sk27	Equipment selection			-0.07842	0.22419	0.07006	0.03938	0.24157	-0.13442
0.37686	0.27515	0.27983	0.32497						
sk28	Installation			-0.35125	-0.14876	-0.26914	-0.25016	-0.12591	-0.26361
0.00951	-0.17466	-0.21875	-0.18186						
sk29	Programming			0.23387	0.32301	0.33614	0.28436	0.37825	0.14118
0.47012	0.52281	0.54961	0.53956						
sk30	Testing			-0.11896	0.09496	0.00469	-0.04323	0.16569	-0.15853
0.39891	0.25212	0.21469	0.23283						
sk31	Operation monitoring			-0.37876	-0.11576	-0.29688	-0.29866	-0.09677	-0.35825
0.03471	-0.13670	-0.17635	-0.16752						
sk32	Operation and control			-0.39211	-0.12773	-0.32926	-0.32347	-0.12941	-0.33261
0.06794	-0.22037	-0.23426	-0.23638						
sk33	Product inspection			-0.10762	0.12185	0.04267	0.06934	0.12422	-0.18289
0.33044	0.24206	0.23090	0.25805						
sk34	Equipment maintenance			-0.45295	-0.24822	-0.41030	-0.37286	-0.22130	-0.33512
0.12967	-0.34624	-0.40112	-0.38048						
sk35	Troubleshooting			-0.27226	-0.02374	-0.18256	-0.17251	-0.01988	-0.21012
0.17744	-0.06209	-0.10260	-0.08566						
sk36	Repairing			-0.43239	-0.26246	-0.39522	-0.36329	-0.23584	-0.29330
0.10480	-0.33050	-0.38490	-0.36034						
sk37	Visioning			0.62263	0.76136	0.73940	0.70782	0.68848	0.36040
0.80326	0.80711	0.77673	0.82864						
sk38	Systems perceptions			0.58436	0.74267	0.69829	0.68049	0.64317	0.34535
0.82201	0.79383	0.73165	0.76409						
sk39	Identification of downstream consequences			0.59750	0.73940	0.74371	0.73223	0.65777	0.35585
0.82759	0.82794	0.76496	0.80198						
sk40	Identification of key causes			0.68366	0.74375	0.77677	0.73927	0.68186	0.46413
0.87178	0.83021	0.77882	0.82273						
sk41	Judgment and decision making			0.66462	0.75224	0.76099	0.72660	0.64610	0.43108
0.86347	0.86498	0.80329	0.83273						
sk42	Systems evaluation			0.60034	0.73281	0.72404	0.71215	0.64991	0.35307
0.82815	0.80909	0.74690	0.77290						
sk43	Time management			0.73984	0.82418	0.75078	0.74756	0.75610	0.52434
0.70539	0.70611	0.69236	0.72228						
sk44	Management of financial resources			0.61019	0.66682	0.70788	0.77915	0.54825	0.47419
0.59266	0.60368	0.56050	0.57178						
sk45	Management of material resources			0.51489	0.69439	0.60699	0.66002	0.60042	0.39134
0.59087	0.55239	0.52340	0.55174						
sk46	Management of personnel resources			0.63391	0.80040	0.64085	0.69308	0.73979	0.42058
0.59367	0.57838	0.55933	0.58776						

Correlations

	sk27	sk28	sk29	sk30	sk21	sk22	sk23	sk24	sk25	sk26
sk1	Reading comprehension				0.81148	0.83030	0.78522	0.81510	0.58221	0.22360
0.24925	-0.19307	0.51421	0.24295							
sk2	Active listening				0.75554	0.76664	0.77083	0.75750	0.45833	0.09104
0.06364	-0.30063	0.37956	0.04820							
sk3	Writing				0.80551	0.81812	0.78250	0.78804	0.55949	0.14185
0.17046	-0.26582	0.50515	0.17729							
sk4	Speaking				0.79182	0.79836	0.81381	0.78667	0.50545	0.10691
0.09926	-0.28294	0.39629	0.07565							
sk5	Mathematics				0.62707	0.64901	0.62525	0.67195	0.66384	0.40943
0.44874	0.06857	0.56878	0.43163							
sk6	Science				0.50130	0.51667	0.44773	0.52829	0.53695	0.51363
0.59814	0.22548	0.49185	0.68466							
sk7	Critical thinking				0.88356	0.89875	0.85316	0.88646	0.64771	0.27059
0.33953	-0.12521	0.51112	0.30470							
sk8	Active learning				0.90745	0.91960	0.86089	0.89485	0.69382	0.30501
0.37167	-0.13452	0.54775	0.30365							
sk9	Learning strategies				0.82521	0.83422	0.80952	0.82914	0.59522	0.22584
0.28151	-0.15343	0.43917	0.21031							
sk10	Monitoring				0.83993	0.85901	0.83073	0.87098	0.62018	0.22487
0.28531	-0.16425	0.43306	0.21975							
sk11	Social Perceptiveness				0.67402	0.67546	0.71441	0.65886	0.34081	-0.02733
0.07842	-0.35125	0.23387	-0.11896							
sk12	Coordination				0.74068	0.74615	0.79731	0.72511	0.51435	0.13067
0.22419	-0.14876	0.32301	0.09496							
sk13	Persuasion				0.75450	0.76357	0.79314	0.74312	0.49242	0.05206
0.07006	-0.26914	0.33614	0.00469							
sk14	Negotiation				0.69540	0.70459	0.74423	0.68418	0.46603	0.00423
0.03938	-0.25016	0.28436	-0.04323							
sk15	Instructing				0.70190	0.70313	0.73710	0.69749	0.50066	0.19418
0.24157	-0.12591	0.37825	0.16569							
sk16	Service orientation				0.40906	0.40997	0.48087	0.43523	0.17554	-0.00210
0.13442	-0.26361	0.14118	-0.15853							
sk17	Problem identification				0.79900	0.82953	0.80243	0.86864	0.64034	0.32837
0.37686	0.00951	0.47012	0.39891							
sk18	Information gathering				0.84800	0.86682	0.83222	0.85543	0.62776	0.22557
0.27515	-0.17466	0.52281	0.25212							
sk19	Information organization				0.82142	0.84027	0.79569	0.82606	0.61609	0.22261
0.27983	-0.21875	0.54961	0.21469							
sk20	Synthesis/Reorganization				0.88578	0.89238	0.83661	0.86547	0.66733	0.27193
0.32497	-0.18186	0.53956	0.23283							
sk21	Idea generation				1.00000	0.96125	0.91641	0.91154	0.71832	0.28399
0.35654	-0.13908	0.50366	0.23782							
sk22	Idea evaluation				0.96125	1.00000	0.92436	0.92674	0.73029	0.30181
0.36523	-0.13832	0.48930	0.26441							
sk23	Implementation planning				0.91641	0.92436	1.00000	0.89989	0.72890	0.27888
0.34189	-0.12772	0.46520	0.21233							
sk24	Solution appraisal				0.91154	0.92674	0.89989	1.00000	0.72845	0.33063
0.38496	-0.08059	0.50117	0.32327							
sk25	Operations analysis				0.71832	0.73029	0.72890	0.72845	1.00000	0.64566
0.60780	0.20603	0.52986	0.48716							
sk26	Technical design				0.28399	0.30181	0.27888	0.33063	0.64566	1.00000
0.69125	0.55722	0.37420	0.65969							
sk27	Equipment selection				0.35654	0.36523	0.34189	0.38496	0.60780	0.69125
1.00000	0.50287	0.36795	0.65387							
sk28	Installation				-0.13908	-0.13832	-0.12772	-0.08059	0.20603	0.55722
0.50287	1.00000	0.09589	0.59406							
sk29	Programming				0.50366	0.48930	0.46520	0.50117	0.52986	0.37420
0.36795	0.09589	1.00000	0.39811							
sk30	Testing				0.23782	0.26441	0.21233	0.32327	0.48716	0.65969
0.65387	0.59406	0.39811	1.00000							
sk31	Operation monitoring				-0.16870	-0.15423	-0.18295	-0.09436	0.07186	0.39013

0.45237	0.51435	0.10157	0.64211						
sk32	Operation and control			-0.23046	-0.21571	-0.21395	-0.15908	0.00645	0.30574
0.40513	0.45590	0.02731	0.46879						
sk33	Product inspection			0.24009	0.27739	0.24795	0.33929	0.55106	0.54161
0.58882	0.45713	0.23313	0.65162						
sk34	Equipment maintenance			-0.33048	-0.32215	-0.31898	-0.26035	-0.04535	0.36887
0.37998	0.72537	-0.09202	0.51641						
sk35	Troubleshooting			-0.04191	-0.02147	-0.02748	0.05250	0.26896	0.58690
0.53360	0.75125	0.19768	0.74626						
sk36	Repairing			-0.29723	-0.28951	-0.29587	-0.22625	-0.02738	0.37803
0.35997	0.77425	-0.09356	0.49015						
sk37	Visioning			0.89562	0.90005	0.88750	0.89730	0.71989	0.28481
0.37107	-0.06994	0.51457	0.29489						
sk38	Systems perceptions			0.80732	0.83640	0.82301	0.84563	0.63229	0.24628
0.33802	-0.03749	0.46649	0.34162						
sk39	Identification of downstream consequences			0.84584	0.87518	0.86178	0.87379	0.69442	0.25511
0.35486	-0.07793	0.48974	0.30550						
sk40	Identification of key causes			0.88362	0.90132	0.89013	0.91885	0.69308	0.27344
0.34075	-0.07571	0.45739	0.29300						
sk41	Judgment and decision making			0.86573	0.89463	0.87574	0.89530	0.63495	0.23549
0.31488	-0.15190	0.43180	0.25262						
sk42	Systems evaluation			0.81496	0.85235	0.84761	0.86235	0.70602	0.27267
0.34388	-0.05233	0.48060	0.33179						
sk43	Time management			0.79196	0.80073	0.84101	0.79836	0.59862	0.17592
0.24535	-0.16922	0.33080	0.09790						
sk44	Management of financial resources			0.63900	0.65053	0.69759	0.64262	0.52142	0.05276
0.10844	-0.18460	0.30393	-0.03544						
sk45	Management of material resources			0.64534	0.65399	0.72234	0.65687	0.66609	0.32205
0.42277	0.06637	0.34191	0.23125						
sk46	Management of personnel resources			0.67398	0.69143	0.74165	0.67345	0.56086	0.13504
0.25656	-0.12048	0.29284	0.09335						

Correlations

	sk37	sk38	sk39	sk40	sk31	sk32	sk33	sk34	sk35	sk36
sk1	Reading comprehension				-0.11502	-0.19798	0.21967	-0.35411	-0.07411	-0.35764
0.76153	0.72650	0.75599	0.78161							
sk2	Active listening				-0.26873	-0.33239	0.00938	-0.43859	-0.16985	-0.42509
0.70895	0.68725	0.70233	0.75926							
sk3	Writing				-0.16397	-0.25625	0.16781	-0.38256	-0.10695	-0.38253
0.74226	0.72258	0.75286	0.77176							
sk4	Speaking				-0.23752	-0.30130	0.05239	-0.41767	-0.14902	-0.40991
0.74674	0.72373	0.73880	0.78905							
sk5	Mathematics				0.09295	-0.01152	0.39722	-0.11721	0.15545	-0.12161
0.63809	0.62427	0.67285	0.63994							
sk6	Science				0.37713	0.22431	0.44565	0.13702	0.35281	0.09946
0.46952	0.48873	0.51010	0.47468							
sk7	Critical thinking				-0.06972	-0.15854	0.25640	-0.28710	0.00523	-0.27915
0.85347	0.83556	0.85532	0.86788							
sk8	Active learning				-0.10901	-0.19138	0.28031	-0.32753	-0.02658	-0.31239
0.86258	0.80482	0.84198	0.85190							
sk9	Learning strategies				-0.14815	-0.18708	0.19727	-0.29441	-0.06894	-0.28786
0.79499	0.72153	0.75465	0.78906							
sk10	Monitoring				-0.10250	-0.15208	0.24775	-0.31893	-0.03747	-0.30241
0.82945	0.78662	0.80929	0.83849							
sk11	Social Perceptiveness				-0.37876	-0.39211	-0.10762	-0.45295	-0.27226	-0.43239
0.62263	0.58436	0.59750	0.68366							
sk12	Coordination				-0.11576	-0.12773	0.12185	-0.24822	-0.02374	-0.26246
0.76136	0.74267	0.73940	0.74375							
sk13	Persuasion				-0.29688	-0.32926	0.04267	-0.41030	-0.18256	-0.39522
0.73940	0.69829	0.74371	0.77677							
sk14	Negotiation				-0.29866	-0.32347	0.06934	-0.37286	-0.17251	-0.36329
0.70782	0.68049	0.73223	0.73927							
sk15	Instructing				-0.09677	-0.12941	0.12422	-0.22130	-0.01988	-0.23584
0.68848	0.64317	0.65777	0.68186							
sk16	Service orientation				-0.35825	-0.33261	-0.18289	-0.33512	-0.21012	-0.29330
0.36040	0.34535	0.35585	0.46413							
sk17	Problem identification				0.03471	-0.06794	0.33044	-0.12967	0.17744	-0.10480
0.80326	0.82201	0.82759	0.87178							

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure

	sk37	sk38	sk39	sk40	sk31	sk32	sk33	sk34	sk35	sk36
sk18	Information gathering				-0.13670	-0.22037	0.24206	-0.34624	-0.06209	-0.33050
0.80711	0.79383	0.82794	0.83021							
sk19	Information organization				-0.17635	-0.23426	0.23090	-0.40112	-0.10260	-0.38490
0.77673	0.73165	0.76496	0.77882							
sk20	Synthesis/Reorganization				-0.16752	-0.23638	0.25805	-0.38048	-0.08566	-0.36034
0.82864	0.76409	0.80198	0.82273							
sk21	Idea generation				-0.16870	-0.23046	0.24009	-0.33048	-0.04191	-0.29723
0.89562	0.80732	0.84584	0.88362							
sk22	Idea evaluation				-0.15423	-0.21571	0.27739	-0.32215	-0.02147	-0.28951
0.90005	0.83640	0.87518	0.90132							
sk23	Implentation planning				-0.18295	-0.21395	0.24795	-0.31898	-0.02748	-0.29587
0.88750	0.82301	0.86178	0.89013							
sk24	Solution appraisal				-0.09436	-0.15908	0.33929	-0.26035	0.05250	-0.22625
0.89730	0.84563	0.87379	0.91885							
sk25	Operations analysis				0.07186	0.00645	0.55106	-0.04535	0.26896	-0.02738
0.71989	0.63229	0.69442	0.69308							
sk26	Technical design				0.39013	0.30574	0.54161	0.36887	0.58690	0.37803
0.28481	0.24628	0.25511	0.27344							
sk27	Equipment selection				0.45237	0.40513	0.58882	0.37998	0.53360	0.35997
0.37107	0.33802	0.35486	0.34075							
sk28	Installation				0.51435	0.45590	0.45713	0.72537	0.75125	0.77425
0.06994	-0.03749	-0.07793	-0.07571							
sk29	Programming				0.10157	0.02731	0.23313	-0.09202	0.19768	-0.09356
0.51457	0.46649	0.48974	0.45739							
sk30	Testing				0.64211	0.46879	0.65162	0.51641	0.74626	0.49015
0.29489	0.34162	0.30550	0.29300							

sk31	Operation monitoring	1.00000	0.86455	0.41012	0.72793	0.71921	0.59960	-
0.08973	0.07131	-0.03828	-0.09248					
sk32	Operation and control	0.86455	1.00000	0.33634	0.66699	0.60926	0.55659	-
0.15536	-0.01693	-0.11406	-0.15286					
sk33	Product inspection	0.41012	0.33634	1.00000	0.37246	0.52486	0.35486	-
0.31436	0.31294	0.31686	0.31462					
sk34	Equipment maintenance	0.72793	0.66699	0.37246	1.00000	0.79273	0.88797	-
0.25015	-0.11377	-0.21474	-0.23719					
sk35	Troubleshooting	0.71921	0.60926	0.52486	0.79273	1.00000	0.77821	-
0.04466	0.15046	0.06515	0.06712					
sk36	Repairing	0.59960	0.55659	0.35486	0.88797	0.77821	1.00000	-
0.23565	-0.14116	-0.21649	-0.20252					
sk37	Visioning	-0.08973	-0.15536	0.31436	-0.25015	0.04466	-0.23565	-
1.00000	0.88800	0.89723	0.89771					
sk38	Systems perceptions	0.07131	-0.01693	0.31294	-0.11377	0.15046	-0.14116	-
0.88800	1.00000	0.92306	0.87623					
sk39	Identification of downstream consequences	-0.03828	-0.11406	0.31686	-0.21474	0.06515	-0.21649	-
0.89723	0.92306	1.00000	0.90504					
sk40	Identification of key causes	-0.09248	-0.15286	0.31462	-0.23719	0.06712	-0.20252	-
0.89771	0.87623	0.90504	1.00000					
sk41	Judgment and decision making	-0.09945	-0.16116	0.26597	-0.29460	0.01101	-0.28112	-
0.87684	0.87325	0.89200	0.91399					
sk42	Systems evaluation	-0.02183	-0.10752	0.33762	-0.18043	0.12175	-0.17794	-
0.88097	0.90231	0.92115	0.88904					
sk43	Time management	-0.18309	-0.18897	0.20137	-0.29355	-0.05112	-0.27865	-
0.79918	0.75412	0.76987	0.80743					
sk44	Management of financial resources	-0.27772	-0.27572	0.12578	-0.31859	-0.13430	-0.28957	-
0.67436	0.63068	0.69353	0.66697					
sk45	Management of material resources	-0.02341	-0.03233	0.34880	-0.06555	0.14181	-0.07220	-
0.68423	0.64352	0.67889	0.66782					
sk46	Management of personnel resources	-0.09963	-0.08966	0.20729	-0.19512	0.00262	-0.20356	-
0.70109	0.68140	0.70180	0.69041					

Correlations

sk45	sk46	sk41	sk42	sk43	sk44
0.53400	sk1 Reading comprehension	0.80391	0.73626	0.69343	0.56599
0.51313	0.57352 sk2 Active listening	0.78091	0.69893	0.72878	0.60071
0.54715	0.59727 sk3 Writing	0.78053	0.74437	0.70600	0.61365
0.56792	0.60495 sk4 Speaking	0.80395	0.73848	0.77252	0.63679
0.49214	0.66278 sk5 Mathematics	0.65169	0.67101	0.49497	0.50563
0.35050	0.42792 sk6 Science	0.48092	0.47677	0.29679	0.15831
0.59611	0.25806 sk7 Critical thinking	0.89609	0.82854	0.74408	0.60193
0.60743	0.62557 sk8 Active learning	0.86668	0.81281	0.74217	0.59569
0.60607	0.62309 sk9 Learning strategies	0.74555	0.73380	0.77563	0.58134
0.61742	0.68887 sk10 Monitoring	0.82688	0.80944	0.78450	0.62712
0.51489	0.68566 sk11 Social Perceptiveness	0.66462	0.60034	0.73984	0.61019
0.69439	0.63391 sk12 Coordination	0.75224	0.73281	0.82418	0.66682
0.60699	0.80040 sk13 Persuasion	0.76099	0.72404	0.75078	0.70788
0.66002	0.64085 sk14 Negotiation	0.72660	0.71215	0.74756	0.77915
0.60042	0.69308 sk15 Instructing	0.64610	0.64991	0.75610	0.54825
0.39134	0.73979 sk16 Service orientation	0.43108	0.35307	0.52434	0.47419
0.59087	0.42058 sk17 Problem identification	0.86347	0.82815	0.70539	0.59266
0.55239	0.59367 sk18 Information gathering	0.86498	0.80909	0.70611	0.60368
0.52340	0.57838 sk19 Information organization	0.80329	0.74690	0.69236	0.56050
0.55174	0.55933 sk20 Synthesis/Reorganization	0.83273	0.77290	0.72228	0.57178
0.64534	0.58776 sk21 Idea generation	0.86573	0.81496	0.79196	0.63900
0.65399	0.67398 sk22 Idea evaluation	0.89463	0.85235	0.80073	0.65053
0.72234	0.69143 sk23 Implementation planning	0.87574	0.84761	0.84101	0.69759
0.65687	0.74165 sk24 Solution appraisal	0.89530	0.86235	0.79836	0.64262
0.66609	0.67345 sk25 Operations analysis	0.63495	0.70602	0.59862	0.52142
0.32205	0.56086 sk26 Technical design	0.23549	0.27267	0.17592	0.05276
0.42277	0.13504 sk27 Equipment selection	0.31488	0.34388	0.24535	0.10844
0.06637	0.25656 sk28 Installation	-0.15190	-0.05233	-0.16922	-0.18460
0.34191	-0.12048 sk29 Programming	0.43180	0.48060	0.33080	0.30393
0.23125	0.29284 sk30 Testing	0.25262	0.33179	0.09790	-0.03544
0.02341	0.09335 sk31 Operation monitoring	-0.09945	-0.02183	-0.18309	-0.27772
0.03233	-0.09963 sk32 Operation and control	-0.16116	-0.10752	-0.18897	-0.27572
0.34880	-0.08966 sk33 Product inspection	0.26597	0.33762	0.20137	0.12578
0.06555	0.20729 sk34 Equipment maintenance	-0.29460	-0.18043	-0.29355	-0.31859
0.14181	-0.19512 sk35 Troubleshooting	0.01101	0.12175	-0.05112	-0.13430
	0.00262				

0.07220	sk36	Repairing	-0.28112	-0.17794	-0.27865	-0.28957	
	-0.20356	sk37	Visioning	0.87684	0.88097	0.79918	0.67436
0.68423	0.70109	sk38	Systems perceptions	0.87325	0.90231	0.75412	0.63068
0.64352	0.68140	sk39	Identification of downstream consequences	0.89200	0.92115	0.76987	0.69353
0.67889	0.70180	sk40	Identification of key causes	0.91399	0.88904	0.80743	0.66697
0.66782	0.69041	sk41	Judgment and decision making	1.00000	0.87633	0.78393	0.65988
0.62752	0.66456	sk42	Systems evaluation	0.87633	1.00000	0.77374	0.69758
0.68750	0.73077	sk43	Time management	0.78393	0.77374	1.00000	0.75740
0.75754	0.86621	sk44	Management of financial resources	0.65988	0.69758	0.75740	1.00000
0.76330	0.74147	sk45	Management of material resources	0.62752	0.68750	0.75754	0.76330
1.00000	0.77301	sk46	Management of personnel resources	0.66456	0.73077	0.86621	0.74147
0.77301	1.00000						

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Community Estimates: SMC

sk10	sk11	sk12	sk13	sk14	sk15	sk16	sk17	sk18	sk19	sk20	sk21
0.91324495	0.92660775	0.90235948	0.93958436	0.73158442	0.76212503	0.93216462	0.94377622	0.87934863			
0.85688197	0.89006273	0.82925244									
sk22	sk23	sk24	sk25	sk26	sk27	sk28	sk29	sk30	sk31	sk32	sk33
0.89692284	0.87557465	0.83114315	0.75929281	0.87742826	0.93494106	0.91193147	0.91857623	0.94540719			
0.95544448	0.91890844	0.92673623									
sk34	sk35	sk36	sk37	sk38	sk39	sk40	sk41	sk42	sk43	sk44	
0.84399788	0.74106579	0.72108619	0.74687961	0.52586641	0.82707015	0.87247530	0.79666253	0.61487106			
0.87770171	0.85675831	0.85634822									
	0.91275546	0.91433628	0.92588487	0.92486619	0.91865980	0.90912450	0.87902972	0.81173797			
0.79630120	0.86420537										

Eigenvalues of the Reduced Correlation Matrix: Total = 39.3969839 Average = 0.85645617

	Eigenvalue	Difference	Proportion	Cumulative
1	26.1216398	19.0477094	0.6630	0.6630
2	7.0739304	5.1375495	0.1796	0.8426
3	1.9363809	0.7952152	0.0492	0.8917
4	1.1411657	0.2446364	0.0290	0.9207
5	0.8965293	0.1951151	0.0228	0.9435
6	0.7014143	0.1637397	0.0178	0.9613
7	0.5376746	0.2010152	0.0136	0.9749
8	0.3366594	0.0458507	0.0085	0.9835
9	0.2908088	0.0420621	0.0074	0.9908
10	0.2487466	0.0281381	0.0063	0.9972
11	0.2206085	0.0153189	0.0056	1.0028
12	0.2052896	0.0280402	0.0052	1.0080
13	0.1772494	0.0696934	0.0045	1.0125
14	0.1075561	0.0159649	0.0027	1.0152
15	0.0915912	0.0122335	0.0023	1.0175
16	0.0793577	0.0174582	0.0020	1.0195
17	0.0618995	0.0214651	0.0016	1.0211
18	0.0404344	0.0113272	0.0010	1.0221
19	0.0291072	0.0099140	0.0007	1.0229
20	0.0191932	0.0018488	0.0005	1.0234
21	0.0173444	0.0037473	0.0004	1.0238
22	0.0135971	0.0117293	0.0003	1.0241
23	0.0018678	0.0016076	0.0000	1.0242
24	0.0002602	0.0017215	0.0000	1.0242
25	-0.0014613	0.0066138	-0.0000	1.0242
26	-0.0080752	0.0018582	-0.0002	1.0240
27	-0.0099333	0.0038218	-0.0003	1.0237
28	-0.0137551	0.0040746	-0.0003	1.0234
29	-0.0178297	0.0052180	-0.0005	1.0229
30	-0.0230477	0.0016514	-0.0006	1.0223
31	-0.0246991	0.0021419	-0.0006	1.0217
32	-0.0268410	0.0031257	-0.0007	1.0210
33	-0.0299667	0.0025220	-0.0008	1.0202
34	-0.0324887	0.0045503	-0.0008	1.0194
35	-0.0370390	0.0027192	-0.0009	1.0185
36	-0.0397583	0.0063322	-0.0010	1.0175
37	-0.0460905	0.0022785	-0.0012	1.0163
38	-0.0483690	0.0053603	-0.0012	1.0151
39	-0.0537293	0.0042310	-0.0014	1.0137
40	-0.0579603	0.0017133	-0.0015	1.0122
41	-0.0596736	0.0106812	-0.0015	1.0107
42	-0.0703549	0.0027123	-0.0018	1.0089
43	-0.0730672	0.0104289	-0.0019	1.0071
44	-0.0834961	0.0088490	-0.0021	1.0050
45	-0.0923451	0.0109961	-0.0023	1.0026
46	-0.1033412		-0.0026	1.0000

5 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5
1	0.72370	0.65728	-0.04137	0.19521	0.06654
2	0.15789	-0.06460	0.95963	-0.19917	0.10168
3	-0.64875	0.64653	0.22670	0.31310	-0.10812
4	0.16988	-0.31995	0.15783	0.68832	-0.60834
5	-0.03992	-0.20842	0.03309	0.59196	0.77683

Rotated Factor Pattern

Factor4	Factor5		Factor1	Factor2	Factor3	
	sk1	Reading comprehension	0.82012	0.36704	-0.08819	
0.24967	-0.01245	sk2	Active listening	0.61356	0.47462	-0.22418
0.48570	-0.06372	sk3	Writing	0.76465	0.41688	-0.15098
0.24551	-0.03856	sk4	Speaking	0.61488	0.53455	-0.19096
0.45452	-0.06153	sk5	Mathematics	0.72121	0.28455	0.16599
0.05507	0.14960	sk6	Science	0.69411	0.04185	0.43100
0.00546	0.07479	sk7	Critical thinking	0.79918	0.49459	-0.00281
0.16840	-0.02312	sk8	Active learning	0.82898	0.46133	-0.03047
0.12814	0.08659	sk9	Learning strategies	0.61722	0.54109	-0.04143
0.30664	0.07918	sk10	Monitoring	0.65461	0.58845	-0.04101
0.17392	-0.00309	sk11	Social Perceptiveness	0.35061	0.57967	-0.30717
0.58642	-0.03124	sk12	Coordination	0.38065	0.75423	-0.03633
0.24496	-0.06220	sk13	Persuasion	0.45544	0.65633	-0.22115
0.36918	-0.00751	sk14	Negotiation	0.34442	0.75022	-0.22356
0.22128	-0.01790	sk15	Instructing	0.42879	0.58280	0.00707
0.43437	0.02825	sk16	Service orientation	0.13560	0.40462	-0.24132
0.67956	0.05186	sk17	Problem identification	0.70047	0.51525	0.15274
0.20864	-0.03023	sk18	Information gathering	0.83283	0.42419	-0.08990
0.11714	0.00070	sk19	Information organization	0.82995	0.37056	-0.13869
0.10071	0.06753	sk20	Synthesis/Reorganization	0.82543	0.42360	-0.10918
0.08362	0.10477	sk21	Idea generation	0.71680	0.58012	-0.05886
0.11178	0.14229	sk22	Idea evaluation	0.73235	0.59476	-0.04047
0.09770	0.12285	sk23	Implementation planning	0.62312	0.68226	-0.04549
0.14779	0.14514	sk24	Solution appraisal	0.72129	0.59257	0.03632
0.12271	0.10159	sk25	Operations analysis	0.56077	0.47695	0.28247
0.07065	0.45686	sk26	Technical design	0.31820	0.04661	0.63251
0.05633	0.46610	sk27	Equipment selection	0.35805	0.16488	0.63653
0.14788	0.31044	sk28	Installation	-0.12259	-0.07023	0.78940
0.01813	0.25022	sk29	Programming	0.58520	0.13579	0.16476
0.02834	0.16373	sk30	Testing	0.41968	-0.02130	0.78377
0.03641	0.10218	sk31	Operation monitoring	0.03983	-0.13791	0.82550
0.13663	-0.35393	sk32	Operation and control	-0.08990	-0.09771	0.73396
0.15999	-0.33486	sk33	Product inspection	0.28602	0.17501	0.57518
0.22870	0.22658	sk34	Equipment maintenance	-0.29444	-0.11242	0.86066
0.03190	-0.11089	sk35	Troubleshooting	0.00614	0.01438	0.91113
0.01056	0.01531	sk36	Repairing	-0.30240	-0.10832	0.81878
0.00238	0.00980	sk37	Visioning	0.65103	0.67226	0.02549
0.01519	0.07218	sk38	Systems perceptions	0.62465	0.66910	0.13132
0.01213	-0.15620	sk39	Identification of downstream consequences	0.65429	0.68153	0.04912
0.02279	-0.02916	sk40	Identification of key causes	0.65086	0.66383	0.03901
0.12476	0.02560	sk41	Judgment and decision making	0.69598	0.61966	-0.02335
0.08313	-0.04899	sk42	Systems evaluation	0.61773	0.69638	0.08345
0.00343	-0.01639	sk43	Time management	0.40547	0.80036	-0.06552
0.19475	0.06687					

0.05383	0.12184	sk44	Management of financial resources	0.26327	0.78720	-0.17092
0.06169	0.23089	sk45	Management of material resources	0.26315	0.77860	0.15598
0.11073	0.03394	sk46	Management of personnel resources	0.25763	0.83988	0.00453

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
14.706574	12.279707	6.687935	2.320641	1.174789

Final Communality Estimates: Total = 37.169646

sk10	sk1	sk11	sk2	sk12	sk3	sk4	sk5	sk6	sk7	sk8	sk9
0.87757733	0.89194680	0.84303154	0.91066621	0.65407190	0.67491990	0.91221886	0.92487298	0.77575093			
0.80673802	0.89816540	0.77894550									
sk22	sk13	sk14	sk15	sk16	sk17	sk18	sk19	sk20	sk21		
0.82344831	0.78071695	0.71303757	0.70483229	0.82391784	0.89535779	0.86007488	0.89065449	0.88655008			
0.91635483	0.89873672	0.89810329									
sk34	sk25	sk26	sk27	sk28	sk29	sk30	sk31	sk32	sk33		
0.83543594	0.72391437	0.67879177	0.70604898	0.41565043	0.80265196	0.84599567	0.69404641	0.54691598			
0.85338602	0.83074322	0.77368822									
sk45	sk37	sk38	sk39	sk40	sk41	sk42	sk43	sk44			
0.75691670	0.88186375	0.87966506	0.89636665	0.88203165	0.87822431	0.87377821	0.85167487	0.73595604			
	0.78520960										

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Correlations

SK7	SK8	SK9	SK10	SK1	SK2	SK3	SK4	SK5	SK6
SK1	Reading comprehension			1.00000	0.66521	0.82072	0.67181	0.52718	0.42290
0.76427	0.76348	0.64687	0.61455						
SK2	Active listening			0.66521	1.00000	0.71086	0.90545	0.31826	0.16030
0.66081	0.64449	0.62294	0.50812						
SK3	Writing			0.82072	0.71086	1.00000	0.74289	0.47369	0.36676
0.73021	0.72131	0.63234	0.56554						
SK4	Speaking			0.67181	0.90545	0.74289	1.00000	0.32538	0.17940
0.69083	0.66638	0.66662	0.53858						
SK5	Mathematics			0.52718	0.31826	0.47369	0.32538	1.00000	0.50007
0.52806	0.51325	0.36341	0.36720						
SK6	Science			0.42290	0.16030	0.36676	0.17940	0.50007	1.00000
0.55119	0.54439	0.42229	0.34206						
SK7	Critical thinking			0.76427	0.66081	0.73021	0.69083	0.52806	0.55119
1.00000	0.90948	0.76021	0.68780						
SK8	Active learning			0.76348	0.64449	0.72131	0.66638	0.51325	0.54439
0.90948	1.00000	0.80413	0.70971						
SK9	Learning strategies			0.64687	0.62294	0.63234	0.66662	0.36341	0.42229
0.76021	0.80413	1.00000	0.71430						
SK10	Monitoring			0.61455	0.50812	0.56554	0.53858	0.36720	0.34206
0.68780	0.70971	0.71430	1.00000						
SK11	Social Perceptiveness			0.49788	0.81201	0.59054	0.84587	0.15854	0.02685
0.54018	0.52952	0.61218	0.47913						
SK12	Coordination			0.50920	0.69130	0.54977	0.73499	0.25820	0.15810
0.63783	0.60542	0.62495	0.56605						
SK13	Persuasion			0.55591	0.70290	0.62311	0.75297	0.28792	0.14603
0.67408	0.64737	0.65600	0.52602						
SK14	Negotiation			0.51531	0.60105	0.57818	0.65469	0.31373	0.08467
0.63558	0.59588	0.55423	0.48761						
SK15	Instructing			0.50436	0.58337	0.53030	0.69169	0.23424	0.25819
0.57925	0.58778	0.80326	0.51875						
SK16	Service orientation			0.26227	0.64312	0.35722	0.62433	0.06664	-0.06593
0.25127	0.24052	0.39359	0.21617						
SK17	Problem identification			0.58136	0.49160	0.54182	0.48726	0.49681	0.47184
0.75042	0.65568	0.55904	0.57461						
SK18	Information gathering			0.81066	0.64262	0.77807	0.65574	0.56033	0.47374
0.83180	0.81153	0.63647	0.57435						
SK19	Information organization			0.71303	0.49030	0.64148	0.48405	0.52371	0.44724
0.70577	0.73048	0.61278	0.60333						
SK20	Synthesis/Reorganization			0.76071	0.60422	0.72569	0.61491	0.48256	0.43893
0.80708	0.84556	0.71670	0.65176						
SK21	Idea generation			0.66628	0.58716	0.65728	0.63666	0.40801	0.41852
0.82547	0.84940	0.77254	0.67064						
SK22	Idea evaluation			0.69981	0.60403	0.67173	0.63987	0.46378	0.46643
0.86778	0.87291	0.78111	0.71975						
SK23	Implementation planning			0.64092	0.62236	0.63560	0.68228	0.41488	0.35889
0.79724	0.80422	0.75936	0.64160						
SK24	Solution appraisal			0.69646	0.55340	0.62840	0.56746	0.49863	0.48645
0.83347	0.81525	0.74897	0.76647						
SK25	Operations analysis			0.40937	0.23736	0.32935	0.26667	0.47430	0.42025
0.54585	0.58309	0.49150	0.45900						
SK26	Technical design			0.12094	-0.01560	-0.01035	-0.04538	0.25933	0.43773
0.21476	0.22537	0.18276	0.16721						
SK27	Equipment selection			-0.15271	-0.35712	-0.29850	-0.37975	0.08736	0.38158

0.00409	0.00771	0.02515	0.04898							
SK28	Installation			-0.22653	-0.38588	-0.38243	-0.41983	-0.01417	0.11988	-
0.18619	-0.21065	-0.20720	-0.17193							
SK29	Programming			0.39826	0.22960	0.37926	0.22963	0.39936	0.38077	
0.41396	0.41375	0.34240	0.27944							
SK30	Testing			0.16455	-0.07369	0.06090	-0.09016	0.28743	0.61784	
0.25508	0.20804	0.14022	0.15382							
SK31	Operation monitoring			-0.14521	-0.33335	-0.20506	-0.32122	0.02256	0.31083	-
0.09911	-0.17317	-0.16391	-0.02992							
SK32	Operation and control			-0.30150	-0.46549	-0.37737	-0.46558	-0.10990	0.10378	-
0.29288	-0.34321	-0.29423	-0.12332							
SK33	Product inspection			0.13273	-0.18585	0.01819	-0.19274	0.24632	0.28371	
0.13366	0.13024	0.06714	0.24634							
SK34	Equipment maintenance			-0.33396	-0.44242	-0.37478	-0.44809	-0.15680	0.08621	-
0.28119	-0.33251	-0.28209	-0.24405							
SK35	Troubleshooting			-0.09584	-0.21929	-0.15437	-0.22423	0.06801	0.28850	
0.01271	-0.06399	-0.08474	-0.03525							
SK36	Repairing			-0.31534	-0.40687	-0.36403	-0.41956	-0.12806	0.07424	-
0.23610	-0.27242	-0.24967	-0.19564							
SK37	Visioning			0.64241	0.57055	0.59620	0.60447	0.44865	0.39074	
0.82760	0.81502	0.74433	0.68758							
SK38	Systems perceptions			0.63203	0.56743	0.61579	0.59745	0.45030	0.44021	
0.82086	0.76769	0.67839	0.65486							
SK39	Identification of downstream consequences			0.65982	0.57760	0.64635	0.61725	0.51113	0.45532	
0.84082	0.80151	0.71039	0.67301							
SK40	Identification of key causes			0.63320	0.60035	0.60805	0.62692	0.44309	0.42779	
0.83144	0.77597	0.70735	0.70385							
SK41	Judgment and decision making			0.66143	0.64414	0.64390	0.67594	0.44437	0.40455	
0.86832	0.78890	0.67361	0.63840							
SK42	Systems evaluation			0.63279	0.55608	0.63848	0.59711	0.51875	0.43741	
0.81424	0.77392	0.68103	0.64880							
SK43	Time management			0.55868	0.62554	0.58505	0.68643	0.28265	0.17467	
0.65944	0.65361	0.69356	0.62493							
SK44	Management of financial resources			0.45842	0.49846	0.53057	0.54602	0.42789	0.07021	
0.52251	0.51673	0.46162	0.43123							
SK45	Management of material resources			0.37541	0.37291	0.39078	0.42701	0.33867	0.26715	
0.50338	0.50798	0.49633	0.44671							
SK46	Management of personnel resources			0.45414	0.48033	0.50162	0.58572	0.27520	0.18152	
0.57921	0.55734	0.62514	0.52641							

Correlations

SK17	SK18	SK19	SK20	SK11	SK12	SK13	SK14	SK15	SK16
SK1	Reading comprehension			0.49788	0.50920	0.55591	0.51531	0.50436	0.26227
0.58136	0.81066	0.71303	0.76071						
SK2	Active listening			0.81201	0.69130	0.70290	0.60105	0.58337	0.64312
0.49160	0.64262	0.49030	0.60422						
SK3	Writing			0.59054	0.54977	0.62311	0.57818	0.53030	0.35722
0.54182	0.77807	0.64148	0.72569						
SK4	Speaking			0.84587	0.73499	0.75297	0.65469	0.69169	0.62433
0.48726	0.65574	0.48405	0.61491						
SK5	Mathematics			0.15854	0.25820	0.28792	0.31373	0.23424	0.06664
0.49681	0.56033	0.52371	0.48256						
SK6	Science			0.02685	0.15810	0.14603	0.08467	0.25819	-0.06593
0.47184	0.47374	0.44724	0.43893						
SK7	Critical thinking			0.54018	0.63783	0.67408	0.63558	0.57925	0.25127
0.75042	0.83180	0.70577	0.80708						
SK8	Active learning			0.52952	0.60542	0.64737	0.59588	0.58778	0.24052
0.65568	0.81153	0.73048	0.84556						

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

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Correlations

SK17	SK18	SK19	SK20	SK11	SK12	SK13	SK14	SK15	SK16
SK9	Learning strategies			0.61218	0.62495	0.65600	0.55423	0.80326	0.39359
0.55904	0.63647	0.61278	0.71670						
SK10	Monitoring			0.47913	0.56605	0.52602	0.48761	0.51875	0.21617
0.57461	0.57435	0.60333	0.65176						
SK11	Social Perceptiveness			1.00000	0.67633	0.75749	0.64237	0.64831	0.77985
0.37318	0.47120	0.33398	0.46838						
SK12	Coordination			0.67633	1.00000	0.65158	0.65738	0.61614	0.43659
0.44785	0.49223	0.39461	0.54010						
SK13	Persuasion			0.75749	0.65158	1.00000	0.85484	0.63814	0.52746
0.48413	0.57462	0.43392	0.58232						
SK14	Negotiation			0.64237	0.65738	0.85484	1.00000	0.52514	0.39642
0.46248	0.53069	0.38839	0.54213						
SK15	Instructing			0.64831	0.61614	0.63814	0.52514	1.00000	0.48163
0.41673	0.45773	0.37168	0.49058						
SK16	Service orientation			0.77985	0.43659	0.52746	0.39642	0.48163	1.00000
0.23682	0.23876	0.12688	0.19179						
SK17	Problem identification			0.37318	0.44785	0.48413	0.46248	0.41673	0.23682
1.00000	0.70585	0.58389	0.56174						
SK18	Information gathering			0.47120	0.49223	0.57462	0.53069	0.45773	0.23876
0.70585	1.00000	0.81818	0.79209						
SK19	Information organization			0.33398	0.39461	0.43392	0.38839	0.37168	0.12688
0.58389	0.81818	1.00000	0.81686						
SK20	Synthesis/Reorganization			0.46838	0.54010	0.58232	0.54213	0.49058	0.19179
0.56174	0.79209	0.81686	1.00000						
SK21	Idea generation			0.53819	0.62426	0.67048	0.63566	0.59098	0.25638
0.58723	0.70885	0.63419	0.81658						
SK22	Idea evaluation			0.52576	0.64370	0.66581	0.62807	0.57497	0.25216
0.67911	0.75907	0.69962	0.82028						
SK23	Implementation planning			0.58443	0.70588	0.68731	0.65093	0.66621	0.32563
0.58724	0.67717	0.57287	0.74233						
SK24	Solution appraisal			0.45124	0.55327	0.58218	0.53218	0.52855	0.21414

0.75737	0.74298	0.70555	0.76366						
SK25	Operations analysis			0.14699	0.34570	0.35127	0.35618	0.34510	0.00080
0.46174	0.46876	0.48779	0.55394						
SK26	Technical design			-0.10792	0.00791	-0.02546	-0.07370	0.11141	-0.06279
0.28074	0.15995	0.22213	0.18465						
SK27	Equipment selection			-0.41005	-0.14379	-0.25983	-0.25820	-0.07085	-0.34625
0.11455	-0.10062	0.06326	-0.05809						
SK28	Installation			-0.41999	-0.26401	-0.33012	-0.29718	-0.20489	-0.32222
0.04379	-0.21178	-0.12250	-0.26245						
SK29	Programming			0.11544	0.18202	0.20081	0.17609	0.24161	0.02058
0.28804	0.38171	0.39348	0.45453						
SK30	Testing			-0.22329	-0.05345	-0.08967	-0.11979	0.04599	-0.22135
0.43336	0.22801	0.23260	0.12402						
SK31	Operation monitoring			-0.40926	-0.17698	-0.33545	-0.32192	-0.16895	-0.34836
0.10337	-0.12135	-0.10305	-0.22910						
SK32	Operation and control			-0.49856	-0.26814	-0.45570	-0.42857	-0.27595	-0.37579
0.11030	-0.31122	-0.23140	-0.36147						
SK33	Product inspection			-0.27417	-0.06745	-0.09037	-0.02679	-0.04940	-0.29526
0.28078	0.15113	0.26829	0.12490						
SK34	Equipment maintenance			-0.44858	-0.28360	-0.39945	-0.36280	-0.25252	-0.31372
0.01315	-0.30449	-0.25867	-0.39769						
SK35	Troubleshooting			-0.30874	-0.10849	-0.21725	-0.18886	-0.09322	-0.24247
0.30493	-0.02934	-0.03080	-0.14601						
SK36	Repairing			-0.42151	-0.28025	-0.36471	-0.32367	-0.24632	-0.29211
0.07235	-0.24842	-0.19338	-0.33475						
SK37	Visioning			0.49251	0.67624	0.65031	0.63713	0.58515	0.22536
0.65611	0.69031	0.61182	0.74436						
SK38	Systems perceptions			0.46066	0.66197	0.59482	0.58517	0.53406	0.20289
0.72235	0.71147	0.59627	0.67121						
SK39	Identification of downstream consequences			0.48074	0.65506	0.66543	0.66529	0.55360	0.23636
0.69719	0.72972	0.62618	0.72441						
SK40	Identification of key causes			0.53447	0.63803	0.66376	0.63042	0.54241	0.30984
0.75914	0.70804	0.60034	0.68625						
SK41	Judgment and decision making			0.54692	0.65975	0.65616	0.63508	0.53357	0.30010
0.72420	0.75425	0.60813	0.69621						
SK42	Systems evaluation			0.45010	0.62971	0.61676	0.61996	0.54165	0.19331
0.71053	0.72132	0.59823	0.68080						
SK43	Time management			0.65132	0.74917	0.67199	0.64945	0.64367	0.42457
0.49857	0.54350	0.45855	0.60036						
SK44	Management of financial resources			0.50856	0.58428	0.60968	0.70314	0.41833	0.35118
0.40672	0.45487	0.35560	0.47906						
SK45	Management of material resources			0.39046	0.61613	0.45691	0.54044	0.46396	0.25427
0.41098	0.38075	0.34188	0.41146						
SK46	Management of personnel resources			0.53108	0.74716	0.54596	0.60924	0.66405	0.29387
0.43249	0.43498	0.34855	0.48183						

Correlations

SK27	SK28	SK29	SK30	SK21	SK22	SK23	SK24	SK25	SK26
SK1	Reading comprehension			0.66628	0.69981	0.64092	0.69646	0.40937	0.12094
0.15271	-0.22653	0.39826	0.16455						
SK2	Active listening			0.58716	0.60403	0.62236	0.55340	0.23736	-0.01560
0.35712	-0.38588	0.22960	-0.07369						
SK3	Writing			0.65728	0.67173	0.63560	0.62840	0.32935	-0.01035
0.29850	-0.38243	0.37926	0.06090						
SK4	Speaking			0.63666	0.63987	0.68228	0.56746	0.26667	-0.04538
0.37975	-0.41983	0.22963	-0.09016						
SK5	Mathematics			0.40801	0.46378	0.41488	0.49863	0.47430	0.25933
0.08736	-0.01417	0.39936	0.28743						
SK6	Science			0.41852	0.46643	0.35889	0.48645	0.42025	0.43773
0.38158	0.11988	0.38077	0.61784						
SK7	Critical thinking			0.82547	0.86778	0.79724	0.83347	0.54585	0.21476
0.00409	-0.18619	0.41396	0.25508						
SK8	Active learning			0.84940	0.87291	0.80422	0.81525	0.58309	0.22537
0.00771	-0.21065	0.41375	0.20804						
SK9	Learning strategies			0.77254	0.78111	0.75936	0.74897	0.49150	0.18276
0.02515	-0.20720	0.34240	0.14022						
SK10	Monitoring			0.67064	0.71975	0.64160	0.76647	0.45900	0.16721
0.04898	-0.17193	0.27944	0.15382						
SK11	Social Perceptiveness			0.53819	0.52576	0.58443	0.45124	0.14699	-0.10792
0.41005	-0.41999	0.11544	-0.22329						
SK12	Coordination			0.62426	0.64370	0.70588	0.55327	0.34570	0.00791
0.14379	-0.26401	0.18202	-0.05345						
SK13	Persuasion			0.67048	0.66581	0.68731	0.58218	0.35127	-0.02546
0.25983	-0.33012	0.20081	-0.08967						
SK14	Negotiation			0.63566	0.62807	0.65093	0.53218	0.35618	-0.07370
0.25820	-0.29718	0.17609	-0.11979						
SK15	Instructing			0.59098	0.57497	0.66621	0.52855	0.34510	0.11141
0.07085	-0.20489	0.24161	0.04599						
SK16	Service orientation			0.25638	0.25216	0.32563	0.21414	0.00080	-0.06279
0.34625	-0.32222	0.02058	-0.22135						
SK17	Problem identification			0.58723	0.67911	0.58724	0.75737	0.46174	0.28074
0.11455	0.04379	0.28804	0.43336						
SK18	Information gathering			0.70885	0.75907	0.67717	0.74298	0.46876	0.15995
0.10062	-0.21178	0.38171	0.22801						
SK19	Information organization			0.63419	0.69962	0.57287	0.70555	0.48779	0.22213
0.06326	-0.12250	0.39348	0.23260						
SK20	Synthesis/Reorganization			0.81658	0.82028	0.74233	0.76366	0.55394	0.18465
0.05809	-0.26245	0.45453	0.12402						
SK21	Idea generation			1.00000	0.92207	0.86357	0.81110	0.62668	0.21721
0.02567	-0.19997	0.39819	0.14875						
SK22	Idea evaluation			0.92207	1.00000	0.86251	0.85941	0.65566	0.25664
0.06126	-0.17300	0.38455	0.21156						
SK23	Implentation planning			0.86357	0.86251	1.00000	0.77783	0.63632	0.19143
0.00820	-0.19816	0.35966	0.09087						
SK24	Solution appraisal			0.81110	0.85941	0.77783	1.00000	0.63183	0.28795
0.12331	-0.07984	0.38635	0.31656						
SK25	Operations analysis			0.62668	0.65566	0.63632	0.63183	1.00000	0.58899
0.37189	0.14952	0.41295	0.36854						
SK26	Technical design			0.21721	0.25664	0.19143	0.28795	0.58899	1.00000
0.59845	0.49031	0.29826	0.58872						
SK27	Equipment selection			0.02567	0.06126	-0.00820	0.12331	0.37189	0.59845
1.00000	0.60387	0.10238	0.53816						
SK28	Installation			-0.19997	-0.17300	-0.19816	-0.07984	0.14952	0.49031
0.60387	1.00000	0.00317	0.54282						

SK29	Programming			0.39819	0.38455	0.35966	0.38635	0.41295	0.29826
0.10238	0.00317	1.00000	0.27154						
SK30	Testing			0.14875	0.21156	0.09087	0.31656	0.36854	0.58872
0.53816	0.54282	0.27154	1.00000						
SK31	Operation monitoring			-0.21142	-0.16095	-0.25318	-0.05919	0.00840	0.34546
0.47164	0.45241	0.05667	0.61594						
SK32	Operation and control			-0.34472	-0.30478	-0.34942	-0.20559	-0.07393	0.24060
0.49439	0.41271	-0.06944	0.37713						
SK33	Product inspection			0.10463	0.17494	0.06325	0.30983	0.42990	0.36627
0.47580	0.34884	0.10494	0.49699						
SK34	Equipment maintenance			-0.31733	-0.28795	-0.34344	-0.20856	-0.09185	0.30844
0.51703	0.65168	-0.12921	0.50638						
SK35	Troubleshooting			-0.06556	-0.01524	-0.09311	0.08178	0.17912	0.49251
0.53114	0.68454	0.10893	0.73486						
SK36	Repairing			-0.24548	-0.21072	-0.28164	-0.12534	-0.01653	0.36140
0.53371	0.74148	-0.11773	0.51765						
SK37	Visioning			0.83674	0.85200	0.83712	0.81661	0.62467	0.22112
0.06455	-0.12870	0.37923	0.21100						
SK38	Systems perceptions			0.73799	0.78566	0.74900	0.76485	0.51572	0.17386
0.03659	-0.11684	0.35013	0.28468						
SK39	Identification of downstream consequences			0.78829	0.84051	0.79570	0.79544	0.57940	0.17883
0.02529	-0.16980	0.38803	0.22503						
SK40	Identification of key causes			0.79910	0.84739	0.78950	0.84130	0.56962	0.22587
0.07249	-0.10783	0.32726	0.26522						
SK41	Judgment and decision making			0.75938	0.82256	0.76923	0.77980	0.48575	0.14691
0.02552	-0.22452	0.29051	0.17073						
SK42	Systems evaluation			0.74478	0.80104	0.77544	0.77737	0.60159	0.20191
0.02969	-0.11280	0.39491	0.28268						
SK43	Time management			0.70811	0.70736	0.78746	0.66016	0.44909	0.05310
0.08302	-0.26882	0.19528	-0.03099						
SK44	Management of financial resources			0.55094	0.56018	0.61116	0.48429	0.40221	-0.05392
0.19830	-0.26400	0.18524	-0.12040						
SK45	Management of material resources			0.54834	0.54988	0.62884	0.51067	0.56648	0.24709
0.18967	0.00364	0.21207	0.13596						
SK46	Management of personnel resources			0.61033	0.61418	0.69010	0.53539	0.44482	0.02220
0.03844	-0.20897	0.18663	-0.01420						

Correlations

SK37	SK38	SK39	SK40	SK31	SK32	SK33	SK34	SK35	SK36
SK1	Reading comprehension			-0.14521	-0.30150	0.13273	-0.33396	-0.09584	-0.31534
0.64241	0.63203	0.65982	0.63320						
SK2	Active listening			-0.33335	-0.46549	-0.18585	-0.44242	-0.21929	-0.40687
0.57055	0.56743	0.57760	0.60035						
SK3	Writing			-0.20506	-0.37737	0.01819	-0.37478	-0.15437	-0.36403
0.59620	0.61579	0.64635	0.60805						
SK4	Speaking			-0.32122	-0.46558	-0.19274	-0.44809	-0.22423	-0.41956
0.60447	0.59745	0.61725	0.62692						
SK5	Mathematics			0.02256	-0.10990	0.24632	-0.15680	0.06801	-0.12806
0.44865	0.45030	0.51113	0.44309						
SK6	Science			0.31083	0.10378	0.28371	0.08621	0.28850	0.07424
0.39074	0.44021	0.45532	0.42779						
SK7	Critical thinking			-0.09911	-0.29288	0.13366	-0.28119	0.01271	-0.23610
0.82760	0.82086	0.84082	0.83144						
SK8	Active learning			-0.17317	-0.34321	0.13024	-0.33251	-0.06399	-0.27242
0.81502	0.76769	0.80151	0.77597						
SK9	Learning strategies			-0.16391	-0.29423	0.06714	-0.28209	-0.08474	-0.24967
0.74433	0.67839	0.71039	0.70735						
SK10	Monitoring			-0.02992	-0.12332	0.24634	-0.24405	-0.03525	-0.19564
0.68758	0.65486	0.67301	0.70385						
SK11	Social Perceptiveness			-0.40926	-0.49856	-0.27417	-0.44858	-0.30874	-0.42151
0.49251	0.46066	0.48074	0.53447						
SK12	Coordination			-0.17698	-0.26814	-0.06745	-0.28360	-0.10849	-0.28025
0.67624	0.66197	0.65506	0.63803						
SK13	Persuasion			-0.33545	-0.45570	-0.09037	-0.39945	-0.21725	-0.36471
0.65031	0.59482	0.66543	0.66376						
SK14	Negotiation			-0.32192	-0.42857	-0.02679	-0.36280	-0.18886	-0.32367
0.63713	0.58517	0.66529	0.63042						
SK15	Instructing			-0.16895	-0.27595	-0.04940	-0.25252	-0.09322	-0.24632
0.58515	0.53406	0.55360	0.54241						
SK16	Service orientation			-0.34836	-0.37579	-0.29526	-0.31372	-0.24247	-0.29211
0.22536	0.20289	0.23636	0.30984						
SK17	Problem identification			0.10337	-0.11030	0.28078	0.01315	0.30493	0.07235
0.65611	0.72235	0.69719	0.75914						

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SK37	SK38	SK39	SK40	SK31	SK32	SK33	SK34	SK35	SK36
SK18	Information gathering			-0.12135	-0.31122	0.15113	-0.30449	-0.02934	-0.24842
0.69031	0.71147	0.72972	0.70804						
SK19	Information organization			-0.10305	-0.23140	0.26829	-0.25867	-0.03080	-0.19338
0.61182	0.59627	0.62618	0.60034						
SK20	Synthesis/Reorganization			-0.22910	-0.36147	0.12490	-0.39769	-0.14601	-0.33475
0.74436	0.67121	0.72441	0.68625						
SK21	Idea generation			-0.21142	-0.34472	0.10463	-0.31733	-0.06556	-0.24548
0.83674	0.73799	0.78829	0.79910						
SK22	Idea evaluation			-0.16095	-0.30478	0.17494	-0.28795	-0.01524	-0.21072
0.85200	0.78566	0.84051	0.84739						
SK23	Implementation planning			-0.25318	-0.34942	0.06325	-0.34344	-0.09311	-0.28164
0.83712	0.74900	0.79570	0.78950						
SK24	Solution appraisal			-0.05919	-0.20559	0.30983	-0.20856	0.08178	-0.12534
0.81661	0.76485	0.79544	0.84130						
SK25	Operations analysis			0.00840	-0.07393	0.42990	-0.09185	0.17912	-0.01653
0.62467	0.51572	0.57940	0.56962						
SK26	Technical design			0.34546	0.24060	0.36627	0.30844	0.49251	0.36140
0.22112	0.17386	0.17883	0.22587						
SK27	Equipment selection			0.47164	0.49439	0.47580	0.51703	0.53114	0.53371
0.06455	0.03659	0.02529	0.07249						
SK28	Installation			0.45241	0.41271	0.34884	0.65168	0.68454	0.74148

0.12870	-0.11684	-0.16980	-0.10783						
SK29	Programming			0.05667	-0.06944	0.10494	-0.12921	0.10893	-0.11773
0.37923	0.35013	0.38803	0.32726						
SK30	Testing			0.61594	0.37713	0.49699	0.50638	0.73486	0.51765
0.21100	0.28468	0.22503	0.26522						
SK31	Operation monitoring			1.00000	0.83350	0.33069	0.68439	0.65900	0.52674
0.11436	0.06087	-0.07309	-0.05201						
SK32	Operation and control			0.83350	1.00000	0.29191	0.61238	0.48702	0.46783
0.26838	-0.14503	-0.25386	-0.21164						
SK33	Product inspection			0.33069	0.29191	1.00000	0.27629	0.37320	0.28261
0.17556	0.15408	0.16223	0.18062						
SK34	Equipment maintenance			0.68439	0.61238	0.27629	1.00000	0.78562	0.84069
0.23924	-0.10343	-0.21332	-0.17426						
SK35	Troubleshooting			0.65900	0.48702	0.37320	0.78562	1.00000	0.79428
0.03248	0.15382	0.05061	0.11076						
SK36	Repairing			0.52674	0.46783	0.28261	0.84069	0.79428	1.00000
0.19302	-0.11936	-0.19909	-0.11797						
SK37	Visioning			-0.11436	-0.26838	0.17556	-0.23924	0.03248	-0.19302
1.00000	0.86248	0.87294	0.83144						
SK38	Systems perceptions			0.06087	-0.14503	0.15408	-0.10343	0.15382	-0.11936
0.86248	1.00000	0.89810	0.83498						
SK39	Identification of downstream consequences			-0.07309	-0.25386	0.16223	-0.21332	0.05061	-0.19909
0.87294	0.89810	1.00000	0.86497						
SK40	Identification of key causes			-0.05201	-0.21164	0.18062	-0.17426	0.11076	-0.11797
0.83144	0.83498	0.86497	1.00000						
SK41	Judgment and decision making			-0.11142	-0.27217	0.11234	-0.26572	0.00571	-0.23945
0.81684	0.82735	0.84676	0.85241						
SK42	Systems evaluation			-0.01066	-0.20998	0.19592	-0.15271	0.13493	-0.13570
0.85015	0.88643	0.89904	0.83124						
SK43	Time management			-0.24771	-0.30715	0.04474	-0.30615	-0.11762	-0.26087
0.71413	0.66388	0.69112	0.70345						
SK44	Management of financial resources			-0.33352	-0.38908	0.00700	-0.33501	-0.17372	-0.27955
0.58094	0.53503	0.62049	0.52856						
SK45	Management of material resources			-0.06195	-0.12553	0.23375	-0.06987	0.08940	-0.05361
0.59112	0.53772	0.57267	0.54920						
SK46	Management of personnel resources			-0.16249	-0.21776	0.06469	-0.21820	-0.04954	-0.21289
0.64662	0.62484	0.65603	0.58965						

Correlations

SK45	SK46		SK41	SK42	SK43	SK44
	SK1	Reading comprehension	0.66143	0.63279	0.55868	0.45842
0.37541	0.45414					
	SK2	Active listening	0.64414	0.55608	0.62554	0.49846
0.37291	0.48033					
	SK3	Writing	0.64390	0.63848	0.58505	0.53057
0.39078	0.50162					
	SK4	Speaking	0.67594	0.59711	0.68643	0.54602
0.42701	0.58572					
	SK5	Mathematics	0.44437	0.51875	0.28265	0.42789
0.33867	0.27520					
	SK6	Science	0.40455	0.43741	0.17467	0.07021
0.26715	0.18152					
	SK7	Critical thinking	0.86832	0.81424	0.65944	0.52251
0.50338	0.57921					
	SK8	Active learning	0.78890	0.77392	0.65361	0.51673
0.50798	0.55734					
	SK9	Learning strategies	0.67361	0.68103	0.69356	0.46162
0.49633	0.62514					
	SK10	Monitoring	0.63840	0.64880	0.62493	0.43123
0.44671	0.52641					
	SK11	Social Perceptiveness	0.54692	0.45010	0.65132	0.50856
0.39046	0.53108					
	SK12	Coordination	0.65975	0.62971	0.74917	0.58428
0.61613	0.74716					
	SK13	Persuasion	0.65616	0.61676	0.67199	0.60968
0.45691	0.54596					
	SK14	Negotiation	0.63508	0.61996	0.64945	0.70314
0.54044	0.60924					
	SK15	Instructing	0.53357	0.54165	0.64367	0.41833
0.46396	0.66405					
	SK16	Service orientation	0.30010	0.19331	0.42457	0.35118
0.25427	0.29387					
	SK17	Problem identification	0.72420	0.71053	0.49857	0.40672
0.41098	0.43249					
	SK18	Information gathering	0.75425	0.72132	0.54350	0.45487
0.38075	0.43498					
	SK19	Information organization	0.60813	0.59823	0.45855	0.35560
0.34188	0.34855					
	SK20	Synthesis/Reorganization	0.69621	0.68080	0.60036	0.47906
0.41146	0.48183					
	SK21	Idea generation	0.75938	0.74478	0.70811	0.55094
0.54834	0.61033					
	SK22	Idea evaluation	0.82256	0.80104	0.70736	0.56018
0.54988	0.61418					
	SK23	Implementation planning	0.76923	0.77544	0.78746	0.61116
0.62884	0.69010					
	SK24	Solution appraisal	0.77980	0.77737	0.66016	0.48429
0.51067	0.53539					
	SK25	Operations analysis	0.48575	0.60159	0.44909	0.40221
0.56648	0.44482					
	SK26	Technical design	0.14691	0.20191	0.05310	-0.05392
0.24709	0.02220					
	SK27	Equipment selection	-0.02552	0.02969	-0.08302	-0.19830
0.18967	-0.03844					
	SK28	Installation	-0.22452	-0.11280	-0.26882	-0.26400
0.00364	-0.20897					
	SK29	Programming	0.29051	0.39491	0.19528	0.18524
0.21207	0.18663					
	SK30	Testing	0.17073	0.28268	-0.03099	-0.12040
0.13596	-0.01420					
	SK31	Operation monitoring	-0.11142	-0.01066	-0.24771	-0.33352
0.06195	-0.16249					
	SK32	Operation and control	-0.27217	-0.20998	-0.30715	-0.38908
0.12553	-0.21776					
	SK33	Product inspection	0.11234	0.19592	0.04474	0.00700

0.23375	0.06469	Equipment maintenance	-0.26572	-0.15271	-0.30615	-0.33501	-
0.06987	-0.21820	SK34					
	SK35	Troubleshooting	0.00571	0.13493	-0.11762	-0.17372	
0.08940	-0.04954	SK36					
	SK37	Repairing	-0.23945	-0.13570	-0.26087	-0.27955	-
0.05361	-0.21289	SK38					
	SK39	Visioning	0.81684	0.85015	0.71413	0.58094	
0.59112	0.64662	SK40					
	SK41	Systems perceptions	0.82735	0.88643	0.66388	0.53503	
0.53772	0.62484	SK42					
	SK43	Identification of downstream consequences	0.84676	0.89904	0.69112	0.62049	
0.57267	0.65603	SK44					
	SK45	Identification of key causes	0.85241	0.83124	0.70345	0.52856	
0.54920	0.58965	SK46					
	SK47	Judgment and decision making	1.00000	0.81770	0.68364	0.56722	
0.50691	0.59546	SK48					
	SK49	Systems evaluation	0.81770	1.00000	0.67994	0.60888	
0.57638	0.66492	SK50					
	SK51	Time management	0.68364	0.67994	1.00000	0.65038	
0.64998	0.77217	SK52					
	SK53	Management of financial resources	0.56722	0.60888	0.65038	1.00000	
0.64074	0.66397	SK54					
	SK55	Management of material resources	0.50691	0.57638	0.64998	0.64074	
1.00000	0.67333	SK56					
	SK57	Management of personnel resources	0.59546	0.66492	0.77217	0.66397	
0.67333	1.00000	SK58					

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Community Estimates: SMC

SK10	SK1	SK11	SK2	SK12	SK3	SK4	SK5	SK6	SK7	SK8	SK9
0.80034661		0.87027281		0.80961269		0.90621549	0.55869259	0.71586791	0.91898992	0.90196915	0.85963617
0.72779486		0.87413555		0.78116680							
SK22	SK13	SK23	SK14	SK24	SK15	SK16	SK17	SK18	SK19	SK20	SK21
0.84792247		0.82184704		0.79765817		0.73544858	0.77814434	0.87328037	0.81347027	0.86374561	0.89909100
0.92011866		0.87232499		0.86758071							
SK34	SK25	SK35	SK26	SK36	SK27	SK28	SK29	SK30	SK31	SK32	SK33
0.78160706		0.67442733		0.73204657		0.70463958	0.39513042	0.79695279	0.85818288	0.80217385	0.55447206
0.83526264		0.84743438		0.83034993							
SK45	SK37	SK46	SK38	SK39	SK40	SK41	SK42	SK43	SK44		
0.69696755		0.87747079		0.89213930		0.90504318	0.87383421	0.85766991	0.88079835	0.79226743	0.73433386
		0.79794911									

Eigenvalues of the Reduced Correlation Matrix: Total = 36.9364859 Average = 0.80296709

	Eigenvalue	Difference	Proportion	Cumulative
1	22.0323741	15.1115329	0.5965	0.5965
2	6.9208412	4.7663317	0.1874	0.7839
3	2.1545096	0.6539920	0.0583	0.8422
4	1.5005175	0.4186677	0.0406	0.8828
5	1.0818499	0.1902814	0.0293	0.9121
6	0.8915684	0.1609065	0.0241	0.9362
7	0.7306619	0.1741321	0.0198	0.9560
8	0.5565298	0.0858418	0.0151	0.9711
9	0.4706880	0.1106533	0.0127	0.9838
10	0.3600347	0.0075592	0.0097	0.9936
11	0.3524756	0.0884775	0.0095	1.0031
12	0.2639980	0.0630746	0.0071	1.0103
13	0.2009235	0.0109571	0.0054	1.0157
14	0.1899663	0.0469204	0.0051	1.0209
15	0.1430459	0.0259510	0.0039	1.0247
16	0.1170950	0.0394950	0.0032	1.0279
17	0.0775999	0.0141467	0.0021	1.0300
18	0.0634533	0.0155539	0.0017	1.0317
19	0.0478994	0.0019660	0.0013	1.0330
20	0.0459335	0.0207976	0.0012	1.0343
21	0.0251358	0.0058190	0.0007	1.0349
22	0.0193168	0.0095672	0.0005	1.0355
23	0.0097496	0.0123292	0.0003	1.0357
24	-0.0025797	0.0071119	-0.0001	1.0357
25	-0.0096915	0.0053808	-0.0003	1.0354
26	-0.0150723	0.0024043	-0.0004	1.0350
27	-0.0174766	0.0057172	-0.0005	1.0345
28	-0.0231938	0.0051214	-0.0006	1.0339
29	-0.0283152	0.0015860	-0.0008	1.0331
30	-0.0299012	0.0045007	-0.0008	1.0323
31	-0.0344019	0.0064341	-0.0009	1.0314
32	-0.0408360	0.0027737	-0.0011	1.0303
33	-0.0436097	0.0018203	-0.0012	1.0291
34	-0.0454299	0.0089137	-0.0012	1.0279
35	-0.0543436	0.0061195	-0.0015	1.0264
36	-0.0604631	0.0059083	-0.0016	1.0248
37	-0.0663714	0.0035059	-0.0018	1.0230
38	-0.0698773	0.0010841	-0.0019	1.0211
39	-0.0709614	0.0060415	-0.0019	1.0191
40	-0.0770029	0.0047052	-0.0021	1.0171
41	-0.0817081	0.0084644	-0.0022	1.0148
42	-0.0901724	0.0043252	-0.0024	1.0124
43	-0.0944976	0.0057838	-0.0026	1.0098

44	-0.1002814	0.0223650	-0.0027	1.0071
45	-0.1226464	0.0182020	-0.0033	1.0038
46	-0.1408484		-0.0038	1.0000

7 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF 46 SKILL DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

		1	2	3	4	5	6
7							
0.04936	1	0.85958	-0.11754	0.31150	0.26446	0.27110	-0.06642
0.13363	2	0.19372	0.85872	-0.34959	0.21762	-0.02991	0.19171
-0.03822	3	-0.07838	0.35914	0.45934	-0.61516	0.51114	0.11285
-0.44363	4	-0.02219	0.19680	0.59762	0.17455	-0.55808	0.25475
0.72041	5	-0.24526	0.14206	0.44794	0.23491	-0.12393	-0.35983
0.48497	6	0.06398	-0.24265	0.01878	-0.10750	-0.11141	0.82311
-0.16506	7	-0.39079	-0.04494	0.10775	0.63802	0.57019	0.27243

Rotated Factor Pattern

			Factor1	Factor2	Factor3	Factor4
Factor5	Factor6	Factor7				
	SK1	Reading comprehension	0.64660	-0.14955	0.25176	0.50268
0.04212		0.00493 -0.07176				
	SK2	Active listening	0.52029	-0.24152	0.66181	0.21161
0.09178		-0.08516 -0.10337				
	SK3	Writing	0.60063	-0.24118	0.34867	0.45105
0.10696		0.02100 -0.16769				
	SK4	Speaking	0.55139	-0.26536	0.67239	0.17960
0.16802		-0.02319 -0.08016				
	SK5	Mathematics	0.37655	0.05655	-0.01848	0.59612
0.20662		-0.03826 -0.06794				
	SK6	Science	0.43147	0.29430	-0.02914	0.51144
0.09187		0.18584 0.17212				
	SK7	Critical thinking	0.86868	-0.02200	0.19790	0.30493
0.09379		-0.02942 -0.00403				
	SK8	Active learning	0.83785	-0.08930	0.17597	0.33134
0.07996		-0.07101 0.13312				
	SK9	Learning strategies	0.73893	-0.08016	0.37415	0.14104
0.10705		0.05243 0.31825				
	SK10	Monitoring	0.73410	-0.05562	0.13920	0.13600
0.12574		0.12888 0.15358				
	SK11	Social Perceptiveness	0.42595	-0.29317	0.75621	-0.01420
0.17607		-0.10236 -0.00535				
	SK12	Coordination	0.58933	-0.14032	0.42301	-0.03744
0.43194		0.10040 0.02249				
	SK13	Persuasion	0.60234	-0.20660	0.47391	0.03261
0.28007		-0.18154 -0.05154				
	SK14	Negotiation	0.56783	-0.20289	0.30890	0.01965
0.45831		-0.19312 -0.16039				
	SK15	Instructing	0.50960	-0.08528	0.54876	0.03735
0.22444		0.10970 0.28947				
	SK16	Service orientation	0.12302	-0.18175	0.77284	-0.01725
0.12507		-0.12826 -0.00020				
	SK17	Problem identification	0.71781	0.29129	0.17626	0.24901
0.07090		-0.04909 -0.17627				
	SK18	Information gathering	0.74219	-0.07445	0.17911	0.48591
0.00663		-0.08459 -0.14607				
	SK19	Information organization	0.67014	-0.05496	0.03592	0.49555
0.04958		-0.08371 0.04854				
	SK20	Synthesis/Reorganization	0.76735	-0.19524	0.09939	0.40034
0.03190		-0.11459 0.13018				
	SK21	Idea generation	0.83826	-0.08285	0.15206	0.15644
0.17651		-0.14036 0.22002				
	SK22	Idea evaluation	0.88310	-0.02686	0.13181	0.19497
0.16615		-0.11821 0.16425				
	SK23	Implementation planning	0.78088	-0.09865	0.22544	0.12516
0.32780		-0.11292 0.21050				
	SK24	Solution appraisal	0.85639	0.07755	0.09767	0.24723
0.10952		-0.06342 0.12135				
	SK25	Operations analysis	0.50218	0.22533	-0.11192	0.36164
0.37714		-0.18002 0.39180				
	SK26	Technical design	0.13628	0.59080	-0.01145	0.33174
0.03906		-0.07333 0.41681				
	SK27	Equipment selection	0.05236	0.64604	-0.31499	0.05934
0.05475		0.09774 0.42816				
	SK28	Installation	-0.15893	0.78086	-0.17338	-0.00971
0.01283		-0.10169 0.11622				
	SK29	Programming	0.31478	0.04889	0.00896	0.44127
0.03673		0.00535 0.13774				
	SK30	Testing	0.22739	0.74236	-0.08403	0.35189
0.10472		0.14985 0.05348				
	SK31	Operation monitoring	-0.05255	0.63568	-0.17306	0.07938
0.09461		0.63642 -0.07748				
	SK32	Operation and control	-0.21192	0.49387	-0.27024	-0.05396
0.04717		0.62836 0.04276				
	SK33	Product inspection	0.17877	0.40634	-0.35053	0.25407
0.14040		0.05801 0.12262				
	SK34	Equipment maintenance	-0.18848	0.81770	-0.12273	-0.18587

0.05871	SK35	0.20899	-0.12223	0.05065	0.90564	-0.05277	0.02571	-
0.00828	SK36	0.10588	-0.12007	-0.14247	0.85481	-0.11680	-0.18447	-
0.07598	SK37	-0.03148	-0.07415	0.86591	0.00670	0.09978	0.10845	
0.27807	SK38	-0.05979	0.08999	0.86538	0.09046	0.11956	0.11136	
0.23028	SK39	0.10882	-0.12511	0.86212	0.00759	0.09474	0.17307	
0.29825	SK40	-0.00858	-0.06546	0.87012	0.10025	0.18778	0.09410	
0.19073	SK41	-0.05147	-0.01117	0.85009	-0.03108	0.18486	0.13280	
0.18187	SK42	-0.02613	-0.09755	0.82503	0.07573	0.09223	0.19640	
0.33034	SK43	0.01449	-0.09847	0.65261	-0.13553	0.33595	-0.02045	
0.45212	SK44	0.00322	0.11085	0.43907	-0.19437	0.18060	0.13251	
0.64274	SK45	-0.17919	-0.14646	0.42533	0.11796	0.15948	0.11758	
0.66210	SK46	-0.01911	0.16277	0.54955	-0.09839	0.24771	-0.03085	
0.60452		0.12232	0.09743					

Variance Explained by Each Factor

Factor7	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
1.266799	16.733116	5.819567	4.200003	3.097164	2.920956	1.274719

Final Communality Estimates: Total = 35.312323

SK1	SK2	SK3	SK4	SK5	SK6	SK7	SK8	SK9
SK10	SK11	SK12						
0.76347398	0.83816154	0.78393315	0.89401759	0.54946186	0.60779799	0.89692098	0.87988723	0.82781502
0.63587096	0.88094565	0.74450113						
SK22	SK13	SK14	SK15	SK16	SK17	SK18	SK19	SK20
0.74520590	0.73247649	0.71570257	0.67784019	0.73168137	0.85310966	0.71078723	0.82818537	0.85639975
0.90452934	0.85050642	0.84082992						
SK34	SK25	SK26	SK27	SK28	SK29	SK30	SK31	SK32
0.77442045	0.65843278	0.71872458	0.68917381	0.31662475	0.76997442	0.86307732	0.76366068	0.42260093
0.81584021	0.85188928	0.81093762						
SK45	SK37	SK38	SK39	SK40	SK41	SK42	SK43	SK44
0.69931725	0.86056191	0.86428055	0.87554655	0.85042237	0.81870045	0.85251540	0.77426842	0.74741308
	0.76389858							

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 6 FACTORS

The FACTOR Procedure

Correlations

GWA5	GWA6	GWA7	GWA1	GWA2	GWA3	GWA4
GWA1	Getting information needed to do job		1.00000	0.90697	0.65542	0.17524
0.76256	0.84584	0.81524				
GWA2	Identifying objects, actions, and events		0.90697	1.00000	0.70389	0.26024
0.76640	0.86116	0.82053				
GWA3	Monitoring processes, materials, or surroundings		0.65542	0.70389	1.00000	0.55474
0.64078	0.62822	0.65844				
GWA4	Inspecting equipment, structures or materials		0.17524	0.26024	0.55474	1.00000
0.35670	0.19955	0.33813				
GWA5	Estimating the characteristics of materials, products, events or information		0.76256	0.76640	0.64078	0.35670
1.00000	0.74431	0.70372				
GWA6	Judging the qualities of objects, services, or persons		0.84584	0.86116	0.62822	0.19955
0.74431	1.00000	0.79519				
GWA7	Evaluating information for compliance to standards		0.81524	0.82053	0.65844	0.33813
0.70372	0.79519	1.00000				
GWA8	Processing information		0.87526	0.86195	0.57244	0.14811
0.73447	0.77161	0.80727				
GWA9	Analyzing data or information		0.92141	0.89621	0.64779	0.20058
0.76889	0.84105	0.82059				
GWA10	Making decisions and solving problems		0.91409	0.89846	0.68143	0.22893
0.80533	0.87620	0.82425				
GWA11	Thinking creatively		0.69567	0.64525	0.42704	0.09137
0.65153	0.67031	0.55797				
GWA12	Updating and using job-relevant knowledge		0.86648	0.85705	0.72585	0.34369
0.74382	0.79404	0.79801				
GWA13	Developing objectives and strategies		0.82289	0.77303	0.53931	0.08131
0.76033	0.80649	0.70681				
GWA14	Scheduling work and activities		0.68839	0.63728	0.44836	0.08426
0.63524	0.66118	0.59265				
GWA15	Organizing, planning, and prioritizing work		0.83834	0.78660	0.53629	0.13596
0.75263	0.81805	0.72665				
GWA16	Performing general physical activities		-0.42619	-0.39661	-0.10549	0.19333
-0.22242	-0.37225	-0.38458				
GWA17	Handling and moving objects		-0.54951	-0.48661	-0.18334	0.23335
-0.31040	-0.47310	-0.42005				
GWA18	Controlling machines and processes		-0.31296	-0.20462	0.17801	0.49726
-0.08991	-0.25983	-0.15334				
GWA19	Interacting with computers		0.72254	0.68827	0.46213	0.12679

0.58493	0.60933	0.66948				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.14686	-0.15176	0.05164	0.14714
-0.01290	-0.19167	-0.18058				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.36848	0.34786	0.38547	0.54646
0.50997	0.31034	0.37497				
GWA22	Implementing ideas, programs, systems or products		0.75783	0.73313	0.62588	0.33435
0.75093	0.77545	0.71326				
GWA23	Repairing and maintaining mechanical equipment		-0.28215	-0.23504	0.13415	0.54901
-0.10584	-0.25307	-0.13541				
GWA24	Repairing and maintaining electronic equipment		0.10055	0.10998	0.36984	0.54551
0.13230	0.05674	0.17363				
GWA25	Documenting/recording information		0.81638	0.81872	0.58592	0.17388
0.65642	0.74852	0.78104				
GWA26	Interpreting the meaning of information for others		0.87184	0.83261	0.57097	0.10173
0.68526	0.79842	0.76142				
GWA27	Communicating with supervisors, peers or subordinates		0.84859	0.81032	0.58340	0.14026
0.70817	0.76756	0.75058				
GWA28	Communicating with persons outside the organizations		0.74324	0.67850	0.35897	-0.08009
0.57127	0.68451	0.60463				
GWA29	Establishing and maintaining interpersonal relationships		0.66540	0.60038	0.36208	-0.10562
0.50413	0.61705	0.53942				
GWA30	Assisting and caring for others		0.35667	0.32698	0.28056	-0.13184
0.19752	0.34343	0.26046				
GWA31	Selling or influencing others		0.56207	0.52803	0.27284	-0.04493
0.50305	0.58250	0.47504				
GWA32	Resolving conflicts and negotiating with others		0.57827	0.52847	0.30435	-0.06349
0.49126	0.58542	0.55776				
GWA33	Performing for or working directly with the public		0.36993	0.30981	0.11786	-0.25648
0.21634	0.37088	0.25807				
GWA34	Coordinating the work and activities of others		0.64678	0.61841	0.50801	0.20644
0.64491	0.61332	0.58059				
GWA35	Developing and building teams		0.61053	0.57356	0.45274	0.11959
0.62668	0.61309	0.55902				
GWA36	Teaching others		0.64508	0.57803	0.48213	0.07418
0.53038	0.61472	0.53879				
GWA37	Guiding, directing and motivating subordinates		0.60523	0.57015	0.44798	0.15286
0.59438	0.57437	0.53565				
GWA38	Coaching and developing others		0.59423	0.53881	0.44335	0.04740
0.53091	0.58568	0.50928				
GWA39	Providing consultation and advice to others		0.85509	0.81237	0.55559	0.11820
0.73035	0.82288	0.76334				
GWA40	Performing administrative activities		0.69790	0.67594	0.41244	0.05590
0.58417	0.66214	0.69625				
GWA41	Staffing organizational units		0.43139	0.42911	0.27886	0.03828
0.45157	0.45929	0.40657				
GWA42	Monitoring and controlling resources		0.57071	0.56590	0.35293	0.08311
0.58571	0.56289	0.54869				

Correlations

GWA12	GWA13	GWA14	GWA8	GWA9	GWA10	GWA11
GWA1	Getting information needed to do job		0.87526	0.92141	0.91409	0.69567
0.86648	0.82289	0.68839				
GWA2	Identifying objects, actions, and events		0.86195	0.89621	0.89846	0.64525
0.85705	0.77303	0.63728				
GWA3	Monitoring processes, materials, or surroundings		0.57244	0.64779	0.68143	0.42704
0.72585	0.53931	0.44836				
GWA4	Inspecting equipment, structures or materials		0.14811	0.20058	0.22893	0.09137
0.34369	0.08131	0.08426				
GWA5	Estimating the characteristics of materials, products, events or information		0.73447	0.76889	0.80533	0.65153
0.74382	0.76033	0.63524				
GWA6	Judging the qualities of objects, services, or persons		0.77161	0.84105	0.87620	0.67031
0.79404	0.80649	0.66118				
GWA7	Evaluating information for compliance to standards		0.80727	0.82059	0.82425	0.55797
0.79801	0.70681	0.59265				
GWA8	Processing information		1.00000	0.92195	0.85904	0.63260
0.82012	0.77722	0.60927				
GWA9	Analyzing data or information		0.92195	1.00000	0.92836	0.67710
0.87458	0.82897	0.63813				
GWA10	Making decisions and solving problems		0.85904	0.92836	1.00000	0.71089
0.85987	0.86597	0.71232				
GWA11	Thinking creatively		0.63260	0.67710	0.71089	1.00000
0.66240	0.73668	0.61687				
GWA12	Updating and using job-relevant knowledge		0.82012	0.87458	0.85987	0.66240
1.00000	0.74419	0.58253				
GWA13	Developing objectives and strategies		0.77722	0.82897	0.86597	0.73668
0.74419	1.00000	0.81797				
GWA14	Scheduling work and activities		0.60927	0.63813	0.71232	0.61687
0.58253	0.81797	1.00000				
GWA15	Organizing, planning, and prioritizing work		0.75400	0.80481	0.85997	0.75999
0.74864	0.88606	0.83550				
GWA16	Performing general physical activities		-0.49577	-0.41264	-0.36560	-0.34867
-0.33511	-0.32887	-0.27924				

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 6 FACTORS

The FACTOR Procedure

			Correlations			
			GWA8	GWA9	GWA10	GWA11
GWA12	GWA13	GWA14				
GWA17	Handling and moving objects		-0.54728	-0.51100	-0.52550	-0.38459
-0.36385	-0.51460	-0.50112				
GWA18	Controlling machines and processes		-0.29170	-0.26312	-0.27465	-0.26076
-0.11217	-0.36692	-0.34039				
GWA19	Interacting with computers		0.80407	0.75415	0.68748	0.59112
0.73807	0.62467	0.49333				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.21520	-0.17750	-0.12440	-0.21130
-0.15011	-0.13986	-0.08315				

GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.35781	0.37857	0.38932	0.51204
0.46880	0.33840 0.23390				
GWA22	Implementing ideas, programs, systems or products	0.69821	0.77136	0.80502	0.71570
0.79535	0.77583 0.61316				
GWA23	Repairing and maintaining mechanical equipment	-0.29826	-0.25015	-0.24721	-0.27345
-0.09851	-0.31658 -0.27929				
GWA24	Repairing and maintaining electronic equipment	0.06453	0.10417	0.08427	0.00822
0.28132	-0.06214 -0.04261				
GWA25	Documenting/recording information	0.87219	0.83156	0.79178	0.53856
0.76724	0.71894 0.60006				
GWA26	Interpreting the meaning of information for others	0.87216	0.88293	0.85579	0.65316
0.82108	0.80192 0.65587				
GWA27	Communicating with supervisors, peers or subordinates	0.81744	0.82223	0.84136	0.64507
0.75262	0.81182 0.78059				
GWA28	Communicating with persons outside the organizations	0.68711	0.70030	0.71787	0.60580
0.63169	0.74402 0.70494				
GWA29	Establishing and maintaining interpersonal relationships	0.58899	0.59639	0.66189	0.56509
0.55176	0.71348 0.77497				
GWA30	Assisting and caring for others	0.27004	0.29793	0.35152	0.23521
0.33782	0.36179 0.42595				
GWA31	Selling or influencing others	0.50535	0.52623	0.58213	0.53266
0.48897	0.68477 0.66722				
GWA32	Resolving conflicts and negotiating with others	0.50841	0.52701	0.61203	0.45370
0.45398	0.68431 0.76877				
GWA33	Performing for or working directly with the public	0.29745	0.30908	0.35174	0.32673
0.29180	0.40607 0.47758				
GWA34	Coordinating the work and activities of others	0.57140	0.60320	0.68923	0.57417
0.56149	0.74458 0.86667				
GWA35	Developing and building teams	0.54792	0.58736	0.66668	0.59126
0.53770	0.76172 0.83207				
GWA36	Teaching others	0.56770	0.61729	0.64034	0.54877
0.60511	0.70417 0.70032				
GWA37	Guiding, directing and motivating subordinates	0.52426	0.56562	0.64729	0.54806
0.51532	0.71224 0.83620				
GWA38	Coaching and developing others	0.50169	0.54881	0.61073	0.54933
0.52062	0.70900 0.77201				
GWA39	Providing consultation and advice to others	0.81676	0.85986	0.87854	0.70122
0.79166	0.87997 0.75803				
GWA40	Performing administrative activities	0.71067	0.67231	0.70271	0.48003
0.59567	0.74172 0.78360				
GWA41	Staffing organizational units	0.38603	0.40128	0.49159	0.41286
0.33660	0.59589 0.72921				
GWA42	Monitoring and controlling resources	0.55291	0.54894	0.61343	0.54253
0.48208	0.72160 0.78506				

Correlations

GWA19	GWA20	GWA21	GWA15	GWA16	GWA17	GWA18
GWA1	Getting information needed to do job		0.83834	-0.42619	-0.54951	-0.31296
0.72254	-0.14686 0.36848					
GWA2	Identifying objects, actions, and events		0.78660	-0.39661	-0.48661	-0.20462
0.68827	-0.15176 0.34786					
GWA3	Monitoring processes, materials, or surroundings		0.53629	-0.10549	-0.18334	0.17801
0.46213	0.05164 0.38547					
GWA4	Inspecting equipment, structures or materials		0.13596	0.19333	0.23335	0.49726
0.12679	0.14714 0.54646					
GWA5	Estimating the characteristics of materials, products, events or information		0.75263	-0.22242	-0.31040	-0.08991
0.58493	-0.01290 0.50997					
GWA6	Judging the qualities of objects, services, or persons		0.81805	-0.37225	-0.47310	-0.25983
0.60933	-0.19167 0.31034					
GWA7	Evaluating information for compliance to standards		0.72665	-0.38458	-0.42005	-0.15334
0.66948	-0.18058 0.37497					
GWA8	Processing information		0.75400	-0.49577	-0.54728	-0.29170
0.80407	-0.21520 0.35781					
GWA9	Analyzing data or information		0.80481	-0.41264	-0.51100	-0.26312
0.75415	-0.17750 0.37857					
GWA10	Making decisions and solving problems		0.85997	-0.36560	-0.52550	-0.27465
0.68748	-0.12440 0.38932					
GWA11	Thinking creatively		0.75999	-0.34867	-0.38459	-0.26076
0.59112	-0.21130 0.51204					
GWA12	Updating and using job-relevant knowledge		0.74864	-0.33511	-0.36385	-0.11217
0.73807	-0.15011 0.46880					
GWA13	Developing objectives and strategies		0.88606	-0.32887	-0.51460	-0.36692
0.62467	-0.13986 0.33840					
GWA14	Scheduling work and activities		0.83550	-0.27924	-0.50112	-0.34039
0.49333	-0.08315 0.23390					
GWA15	Organizing, planning, and prioritizing work		1.00000	-0.33232	-0.53455	-0.35100
0.61728	-0.13213 0.37280					
GWA16	Performing general physical activities		-0.33232	1.00000	0.63645	0.38669
-0.50086	0.40891 -0.05716					
GWA17	Handling and moving objects		-0.53455	0.63645	1.00000	0.59053
-0.44644	0.18007 0.03685					
GWA18	Controlling machines and processes		-0.35100	0.38669	0.59053	1.00000
-0.25716	0.23168 0.19201					
GWA19	Interacting with computers		0.61728	-0.50086	-0.44644	-0.25716
1.00000	-0.23650 0.38007					
GWA20	Operating vehicles, mechanized devices, or equipment		-0.13213	0.40891	0.18007	0.23168
-0.23650	1.00000 -0.06319					
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.37280	-0.05716	0.03685	0.19201
0.38007	-0.06319 1.00000					
GWA22	Implementing ideas, programs, systems or products		0.77123	-0.23494	-0.26324	-0.08178
0.59615	-0.18085 0.53327					
GWA23	Repairing and maintaining mechanical equipment		-0.29880	0.45726	0.49741	0.64205
-0.28659	0.34336 0.15164					
GWA24	Repairing and maintaining electronic equipment		0.00171	0.10703	0.18651	0.32802
0.18499	0.07503 0.30936					
GWA25	Documenting/recording information		0.72005	-0.45475	-0.52868	-0.27274
0.74146	-0.16796 0.27898					
GWA26	Interpreting the meaning of information for others		0.78540	-0.40901	-0.55810	-0.33726
0.73772	-0.16240 0.30382					
GWA27	Communicating with supervisors, peers or subordinates		0.83798	-0.37285	-0.58703	-0.31987
0.69207	-0.09052 0.31482					
GWA28	Communicating with persons outside the organizations		0.77221	-0.39578	-0.61865	-0.51662
0.57863	-0.09935 0.15196					
GWA29	Establishing and maintaining interpersonal relationships		0.74164	-0.30052	-0.57503	-0.46530
0.50740	-0.05575 0.09196					

GWA30	Assisting and caring for others	0.35117	-0.03862	-0.26091	-0.27154
0.22361	-0.02908 -0.10041				
GWA31	Selling or influencing others	0.67994	-0.31273	-0.50908	-0.38665
0.43450	-0.05545 0.14503				
GWA32	Resolving conflicts and negotiating with others	0.69386	-0.29221	-0.53970	-0.45155
0.41177	-0.04842 0.05625				
GWA33	Performing for or working directly with the public	0.43751	-0.19907	-0.43524	-0.49125
0.23808	-0.02995 -0.13646				
GWA34	Coordinating the work and activities of others	0.75663	-0.18344	-0.39901	-0.20092
0.46989	-0.00085 0.32369				
GWA35	Developing and building teams	0.74967	-0.18598	-0.38864	-0.22957
0.46221	-0.02409 0.25705				
GWA36	Teaching others	0.67590	-0.20499	-0.38771	-0.24781
0.48136	-0.04843 0.19616				
GWA37	Guiding, directing and motivating subordinates	0.71533	-0.20050	-0.37165	-0.21160
0.41539	-0.05057 0.26182				
GWA38	Coaching and developing others	0.68278	-0.18305	-0.38834	-0.24409
0.42436	-0.04263 0.15959				
GWA39	Providing consultation and advice to others	0.85867	-0.40025	-0.57587	-0.36470
0.69699	-0.15017 0.34538				
GWA40	Performing administrative activities	0.74526	-0.42423	-0.56422	-0.38166
0.60295	-0.14254 0.12332				
GWA41	Staffing organizational units	0.59643	-0.21142	-0.36541	-0.24896
0.30970	-0.06187 0.08472				
GWA42	Monitoring and controlling resources	0.72107	-0.25062	-0.40408	-0.29242
0.46275	-0.08304 0.20044				

Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA1	Getting information needed to do job		0.75783	-0.28215	0.10055	0.81638
0.87184	0.84859 0.74324					
GWA2	Identifying objects, actions, and events		0.73313	-0.23504	0.10998	0.81872
0.83261	0.81032 0.67850					
GWA3	Monitoring processes, materials, or surroundings		0.62588	0.13415	0.36984	0.58592
0.57097	0.58340 0.35897					
GWA4	Inspecting equipment, structures or materials		0.33435	0.54901	0.54551	0.17388
0.10173	0.14026 -0.08009					
GWA5	Estimating the characteristics of materials, products, events or information		0.75093	-0.10584	0.13230	0.65642
0.68526	0.70817 0.57127					
GWA6	Judging the qualities of objects, services, or persons		0.77545	-0.25307	0.05674	0.74852
0.79842	0.76756 0.68451					
GWA7	Evaluating information for compliance to standards		0.71326	-0.13541	0.17363	0.78104
0.76142	0.75058 0.60463					
GWA8	Processing information		0.69821	-0.29826	0.06453	0.87219
0.87216	0.81744 0.68711					
GWA9	Analyzing data or information		0.77136	-0.25015	0.10417	0.83156
0.88293	0.82223 0.70030					
GWA10	Making decisions and solving problems		0.80502	-0.24721	0.08427	0.79178
0.85579	0.84136 0.71787					
GWA11	Thinking creatively		0.71570	-0.27345	0.00822	0.53856
0.65316	0.64507 0.60580					
GWA12	Updating and using job-relevant knowledge		0.79535	-0.09851	0.28132	0.76724
0.82108	0.75262 0.63169					
GWA13	Developing objectives and strategies		0.77583	-0.31658	-0.06214	0.71894
0.80192	0.81182 0.74402					
GWA14	Scheduling work and activities		0.61316	-0.27929	-0.04261	0.60006
0.65587	0.78059 0.70494					
GWA15	Organizing, planning, and prioritizing work		0.77123	-0.29880	0.00171	0.72005
0.78540	0.83798 0.77221					
GWA16	Performing general physical activities		-0.23494	0.45726	0.10703	-0.45475
-0.40901	-0.37285 -0.39578					
GWA17	Handling and moving objects		-0.26324	0.49741	0.18651	-0.52868
-0.55810	-0.58703 -0.61865					
GWA18	Controlling machines and processes		-0.08178	0.64205	0.32802	-0.27274
-0.33726	-0.31987 -0.51662					
GWA19	Interacting with computers		0.59615	-0.28659	0.18499	0.74146
0.73772	0.69207 0.57863					
GWA20	Operating vehicles, mechanized devices, or equipment		-0.18085	0.34336	0.07503	-0.16796
-0.16240	-0.09052 -0.09935					
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.53327	0.15164	0.30936	0.27898
0.30382	0.31482 0.15196					
GWA22	Implementing ideas, programs, systems or products		1.00000	-0.08638	0.20231	0.62571
0.70382	0.66287 0.53786					
GWA23	Repairing and maintaining mechanical equipment		-0.08638	1.00000	0.48056	-0.26208
-0.32098	-0.30498 -0.43514					
GWA24	Repairing and maintaining electronic equipment		0.20231	0.48056	1.00000	0.10139
0.05456	0.03115 -0.07904					
GWA25	Documenting/recording information		0.62571	-0.26208	0.10139	1.00000
0.83886	0.79582 0.68690					
GWA26	Interpreting the meaning of information for others		0.70382	-0.32098	0.05456	0.83886
1.00000	0.83590 0.79555					
GWA27	Communicating with supervisors, peers or subordinates		0.66287	-0.30498	0.03115	0.79582
0.83590	1.00000 0.75837					
GWA28	Communicating with persons outside the organizations		0.53786	-0.43514	-0.07904	0.68690
0.79555	0.75837 1.00000					
GWA29	Establishing and maintaining interpersonal relationships		0.46150	-0.37937	-0.07739	0.61687
0.71518	0.77880 0.82736					
GWA30	Assisting and caring for others		0.21216	-0.26922	-0.06408	0.35842
0.43417	0.41066 0.52304					
GWA31	Selling or influencing others		0.46442	-0.30795	-0.08842	0.51147
0.59964	0.63410 0.78534					
GWA32	Resolving conflicts and negotiating with others		0.44317	-0.31343	-0.10222	0.54398
0.58311	0.69151 0.72820					
GWA33	Performing for or working directly with the public		0.21119	-0.37435	-0.12800	0.36488
0.48300	0.41139 0.74293					

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 6 FACTORS

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Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
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GWA34	Coordinating the work and activities of others	0.60615	-0.18260	0.00804	0.56246
0.60976	0.78113 0.60767				
GWA35	Developing and building teams	0.60695	-0.18138	-0.00176	0.52649
0.58344	0.73531 0.58632				
GWA36	Teaching others	0.56802	-0.22097	0.02920	0.56153
0.69266	0.69241 0.64238				
GWA37	Guiding, directing and motivating subordinates	0.56378	-0.19587	-0.02323	0.49274
0.54494	0.72139 0.52738				
GWA38	Coaching and developing others	0.52205	-0.20434	0.00110	0.49902
0.59281	0.68678 0.58347				
GWA39	Providing consultation and advice to others	0.73015	-0.31899	0.01612	0.76420
0.87469	0.86083 0.82044				
GWA40	Performing administrative activities	0.52846	-0.29901	-0.00949	0.77123
0.69252	0.78189 0.72215				
GWA41	Staffing organizational units	0.42125	-0.19033	-0.07712	0.37658
0.37741	0.56282 0.44290				
GWA42	Monitoring and controlling resources	0.50899	-0.22429	-0.03849	0.54004
0.53749	0.67025 0.62142				

Correlations

GWA33	GWA34	GWA35	GWA29	GWA30	GWA31	GWA32
GWA1	Getting information needed to do job		0.66540	0.35667	0.56207	0.57827
0.36993	0.64678 0.61053					
GWA2	Identifying objects, actions, and events		0.60038	0.32698	0.52803	0.52847
0.30981	0.61841 0.57356					
GWA3	Monitoring processes, materials, or surroundings		0.36208	0.28056	0.27284	0.30435
0.11786	0.50801 0.45274					
GWA4	Inspecting equipment, structures or materials		-0.10562	-0.13184	-0.04493	-0.06349
-0.25648	0.20644 0.11959					
GWA5	Estimating the characteristics of materials, products, events or information		0.50413	0.19752	0.50305	0.49126
0.21634	0.64491 0.62668					
GWA6	Judging the qualities of objects, services, or persons		0.61705	0.34343	0.58250	0.58542
0.37088	0.61332 0.61309					
GWA7	Evaluating information for compliance to standards		0.53942	0.26046	0.47504	0.55776
0.25807	0.58059 0.55902					
GWA8	Processing information		0.58899	0.27004	0.50535	0.50841
0.29745	0.57140 0.54792					
GWA9	Analyzing data or information		0.59639	0.29793	0.52623	0.52701
0.30908	0.60320 0.58736					
GWA10	Making decisions and solving problems		0.66189	0.35152	0.58213	0.61203
0.35174	0.68923 0.66668					
GWA11	Thinking creatively		0.56509	0.23521	0.53266	0.45370
0.32673	0.57417 0.59126					
GWA12	Updating and using job-relevant knowledge		0.55176	0.33782	0.48897	0.45398
0.29180	0.56149 0.53770					
GWA13	Developing objectives and strategies		0.71348	0.36179	0.68477	0.68431
0.40607	0.74458 0.76172					
GWA14	Scheduling work and activities		0.77497	0.42595	0.66722	0.76877
0.47758	0.86667 0.83207					
GWA15	Organizing, planning, and prioritizing work		0.74164	0.35117	0.67994	0.69386
0.43751	0.75663 0.74967					
GWA16	Performing general physical activities		-0.30052	-0.03862	-0.31273	-0.29221
-0.19907	-0.18344 -0.18598					
GWA17	Handling and moving objects		-0.57503	-0.26091	-0.50908	-0.53970
-0.43524	-0.39901 -0.38864					
GWA18	Controlling machines and processes		-0.46530	-0.27154	-0.38665	-0.45155
-0.49125	-0.20092 -0.22957					
GWA19	Interacting with computers		0.50740	0.22361	0.43450	0.41177
0.23808	0.46989 0.46221					
GWA20	Operating vehicles, mechanized devices, or equipment		-0.05575	-0.02908	-0.05545	-0.04842
-0.02995	-0.00085 -0.02409					
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.09196	-0.10041	0.14503	0.05625
-0.13646	0.32369 0.25705					
GWA22	Implementing ideas, programs, systems or products		0.46150	0.21216	0.46442	0.44317
0.21119	0.60615 0.60695					
GWA23	Repairing and maintaining mechanical equipment		-0.37937	-0.26922	-0.30795	-0.31343
-0.37435	-0.18260 -0.18138					
GWA24	Repairing and maintaining electronic equipment		-0.07739	-0.06408	-0.08842	-0.10222
-0.12800	0.00804 -0.00176					
GWA25	Documenting/recording information		0.61687	0.35842	0.51147	0.54398
0.36488	0.56246 0.52649					
GWA26	Interpreting the meaning of information for others		0.71518	0.43417	0.59964	0.58311
0.48300	0.60976 0.58344					
GWA27	Communicating with supervisors, peers or subordinates		0.77880	0.41066	0.63410	0.69151
0.41139	0.78113 0.73531					
GWA28	Communicating with persons outside the organizations		0.82736	0.52304	0.78534	0.72820
0.74293	0.60767 0.58632					
GWA29	Establishing and maintaining interpersonal relationships		1.00000	0.66208	0.77166	0.78415
0.69812	0.70496 0.69288					
GWA30	Assisting and caring for others		0.66208	1.00000	0.44048	0.45778
0.64265	0.36592 0.35621					
GWA31	Selling or influencing others		0.77166	0.44048	1.00000	0.77088
0.63365	0.58573 0.61411					
GWA32	Resolving conflicts and negotiating with others		0.78415	0.45778	0.77088	1.00000
0.59680	0.70914 0.73571					
GWA33	Performing for or working directly with the public		0.69812	0.64265	0.63365	0.59680
1.00000	0.36496 0.37239					
GWA34	Coordinating the work and activities of others		0.70496	0.36592	0.58573	0.70914
0.36496	1.00000 0.88187					
GWA35	Developing and building teams		0.69288	0.35621	0.61411	0.73571
0.37239	0.88187 1.00000					
GWA36	Teaching others		0.68970	0.51503	0.54576	0.56067
0.46102	0.67269 0.70885					
GWA37	Guiding, directing and motivating subordinates		0.63172	0.28590	0.50884	0.67114
0.29344	0.90378 0.89117					
GWA38	Coaching and developing others		0.71425	0.47827	0.57746	0.65762
0.42126	0.76834 0.84201					
GWA39	Providing consultation and advice to others		0.76680	0.41638	0.72099	0.69375
0.46067	0.71292 0.70740					
GWA40	Performing administrative activities		0.74305	0.39200	0.67119	0.78233
0.47022	0.71607 0.71860					
GWA41	Staffing organizational units		0.53660	0.21594	0.50911	0.65652
0.29234	0.70080 0.77013					
GWA42	Monitoring and controlling resources		0.68807	0.29951	0.65097	0.71840

GWA25	GWA26	GWA27	GWA28							
0.89589221	0.63293250	0.70318688	0.65613577	0.75066298	0.36100185	0.64783547	0.82032889	0.64987022	0.51206119	
0.86112701	0.89936478	0.88421634	0.89027884							
	GWA29	GWA30	GWA31	GWA32	GWA33	GWA34	GWA35	GWA36	GWA37	GWA38
	GWA39	GWA40	GWA41	GWA42						
	0.88446471	0.66223657	0.78263731	0.82067074	0.77177449	0.90102959	0.89220660	0.85312899	0.90543199	0.89825521
	0.91058405	0.87556791	0.75067838	0.78794802						

Eigenvalues of the Reduced Correlation Matrix: Total = 33.826863 Average = 0.8054015

	Eigenvalue	Difference	Proportion	Cumulative
1	22.9691295	18.8561967	0.6790	0.6790
2	4.1129328	1.4892571	0.1216	0.8006
3	2.6236757	1.2668040	0.0776	0.8782
4	1.3568716	0.5167952	0.0401	0.9183
5	0.8400764	0.1397254	0.0248	0.9431
6	0.7003510	0.1365207	0.0207	0.9638
7	0.5638302	0.1944602	0.0167	0.9805
8	0.3693700	0.0555420	0.0109	0.9914
9	0.3138280	0.0364694	0.0093	1.0007
10	0.2773586	0.0917956	0.0082	1.0089
11	0.1855630	0.0418812	0.0055	1.0144
12	0.1436818	0.0260805	0.0042	1.0186
13	0.1176013	0.0055100	0.0035	1.0221
14	0.1120913	0.0265787	0.0033	1.0254
15	0.0855126	0.0121201	0.0025	1.0279
16	0.0733924	0.0096149	0.0022	1.0301
17	0.0637775	0.0297979	0.0019	1.0320
18	0.0339796	0.0037383	0.0010	1.0330
19	0.0302413	0.0230958	0.0009	1.0339
20	0.0071455	0.0057138	0.0002	1.0341
21	0.0014317	0.0021767	0.0000	1.0341
22	-0.0007451	0.0068671	-0.0000	1.0341
23	-0.0076121	0.0015693	-0.0002	1.0339
24	-0.0091815	0.0067683	-0.0003	1.0336
25	-0.0159498	0.0066355	-0.0005	1.0332
26	-0.0225853	0.0014378	-0.0007	1.0325
27	-0.0240231	0.0031683	-0.0007	1.0318
28	-0.0271914	0.0057647	-0.0008	1.0310
29	-0.0329561	0.0036875	-0.0010	1.0300
30	-0.0366436	0.0024287	-0.0011	1.0289
31	-0.0390723	0.0079896	-0.0012	1.0278
32	-0.0470619	0.0036721	-0.0014	1.0264
33	-0.0507340	0.0041025	-0.0015	1.0249
34	-0.0548365	0.0060484	-0.0016	1.0232
35	-0.0608849	0.0067349	-0.0018	1.0214
36	-0.0676198	0.0076437	-0.0020	1.0194
37	-0.0752634	0.0092567	-0.0022	1.0172
38	-0.0845201	0.0150133	-0.0025	1.0147
39	-0.0995334	0.0124359	-0.0029	1.0118
40	-0.1119693	0.0282725	-0.0033	1.0085
41	-0.1402418	0.0061115	-0.0041	1.0043
42	-0.1463533		-0.0043	1.0000

6 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-LEVEL SCALE
VARIMAX ROTATION OF 6 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5	6
1	0.74335	0.57100	0.30427	-0.11984	0.11993	-
0.00838	0.43228	-0.21050	-0.44993	0.72523	0.19292	-
0.05655	-0.48378	0.69437	0.06286	0.50431	0.04773	-
0.15245	0.04703	-0.35758	0.79738	0.40126	-0.19823	-
0.18385	-0.09601	-0.12804	0.10755	-0.16852	0.80123	-
0.54079	-0.12282	-0.05695	0.23162	0.12621	0.51464	-
0.80451						

Rotated Factor Pattern

	Factor4	Factor5	Factor6	Factor1	Factor2	Factor3
GWA1		Getting information needed to do job		0.85511	0.32964	0.20833
-0.09651		0.09851	0.03406			
GWA2		Identifying objects, actions, and events		0.86490	0.30898	0.15133
-0.01925		0.04494	0.00312			
GWA3		Monitoring processes, materials, or surroundings		0.68756	0.24090	0.08053
0.42504		-0.01755	0.13484			
GWA4		Inspecting equipment, structures or materials		0.31834	0.07583	-0.20095

0.74771	0.12337	-0.10171			
GWA5	Estimating the characteristics of materials, products, events or information		0.68187	0.41368	0.07731
0.12500	0.29867	-0.02323			
GWA6	Judging the qualities of objects, services, or persons		0.76961	0.35554	0.20643
-0.07115	0.15183	0.03754			
GWA7	Evaluating information for compliance to standards		0.81396	0.32474	0.09670
0.05834	0.00310	-0.10214			
GWA8	Processing information		0.88735	0.26520	0.09583
-0.16450	0.01730	-0.06229			
GWA9	Analyzing data or information		0.89480	0.28488	0.13613
-0.08824	0.10044	0.03551			
GWA10	Making decisions and solving problems		0.82626	0.39836	0.18956
-0.04641	0.15828	0.03067			
GWA11	Thinking creatively		0.56584	0.35842	0.13107
-0.16938	0.50025	0.06881			
GWA12	Updating and using job-relevant knowledge		0.87249	0.22167	0.17644
0.11954	0.14987	0.06224			
GWA13	Developing objectives and strategies		0.63980	0.56143	0.23112
-0.16685	0.26510	0.04789			
GWA14	Scheduling work and activities		0.40744	0.77109	0.27937
-0.10166	0.11612	-0.01415			
GWA15	Organizing, planning, and prioritizing work		0.63853	0.55660	0.25794
-0.12347	0.28526	-0.02977			
GWA16	Performing general physical activities		-0.46350	-0.07406	0.05943
0.52723	0.10306	0.24942			
GWA17	Handling and moving objects		-0.43032	-0.27033	-0.24166
0.50964	0.14357	0.20472			
GWA18	Controlling machines and processes		-0.12144	-0.16370	-0.33012
0.67823	0.00748	0.11027			
GWA19	Interacting with computers		0.76819	0.19253	0.06565
-0.14970	0.05289	-0.09674			
GWA20	Operating vehicles, mechanized devices, or equipment		-0.22458	0.03685	0.14943
0.39443	-0.05609	0.02443			
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.42496	0.10649	-0.18882
0.30016	0.53211	-0.04885			
GWA22	Implementing ideas, programs, systems or products		0.70902	0.35147	0.04842
0.09401	0.39239	0.08885			
GWA23	Repairing and maintaining mechanical equipment		-0.15901	-0.10604	-0.18327
0.76708	-0.01651	-0.04397			
GWA24	Repairing and maintaining electronic equipment		0.24278	-0.09279	-0.06108
0.57634	-0.01998	-0.08516			
GWA25	Documenting/recording information		0.82802	0.27034	0.20711
-0.08348	-0.11828	-0.10767			
GWA26	Interpreting the meaning of information for others		0.81514	0.27221	0.34436
-0.14121	0.05920	0.06422			
GWA27	Communicating with supervisors, peers or subordinates		0.70091	0.53175	0.26011
-0.09680	0.01624	-0.01193			
GWA28	Communicating with persons outside the organizations		0.53524	0.35298	0.61814
-0.25725	0.13044	-0.12553			
GWA29	Establishing and maintaining interpersonal relationships		0.39752	0.52908	0.63346
-0.18867	0.01759	-0.01122			
GWA30	Assisting and caring for others		0.19135	0.19691	0.68059
-0.05529	-0.13204	0.26020			
GWA31	Selling or influencing others		0.32416	0.47171	0.55892
-0.16089	0.19665	-0.23112			
GWA32	Resolving conflicts and negotiating with others		0.29599	0.65881	0.46404
-0.16506	-0.00772	-0.22042			
GWA33	Performing for or working directly with the public		0.14251	0.21493	0.79713
-0.23402	0.00455	-0.03919			
GWA34	Coordinating the work and activities of others		0.38550	0.81470	0.17484
0.04198	0.10699	0.04609			
GWA35	Developing and building teams		0.34006	0.84945	0.16852
-0.00882	0.10786	0.09062			
GWA36	Teaching others		0.45761	0.54950	0.35316
-0.03857	0.00976	0.39282			
GWA37	Guiding, directing and motivating subordinates		0.32968	0.87601	0.04409
-0.02645	0.06049	0.12772			
GWA38	Coaching and developing others		0.33453	0.75071	0.27646
-0.04178	-0.00895	0.33448			
GWA39	Providing consultation and advice to others		0.71858	0.46752	0.32369
-0.14112	0.16369	-0.00226			
GWA40	Performing administrative activities		0.53039	0.63239	0.27340
-0.14711	-0.15661	-0.25876			
GWA41	Staffing organizational units		0.16866	0.83026	0.05103
-0.09738	-0.00662	-0.08257			
GWA42	Monitoring and controlling resources		0.33025	0.73943	0.20604
-0.07720	0.10074	-0.21247			

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
14.096077	9.125551	3.879421	3.413886	1.267520	0.820581

Final Communality Estimates: Total = 32.603037

GWA1	GWA2	GWA3	GWA4	GWA5	GWA6	GWA7	GWA8	GWA9	GWA10
0.90345022	0.86883031	0.73640658	0.73209953	0.74741377	0.79084909	0.79117409	0.89814355	0.91948372	0.90547008
0.74949404	0.88212198	0.87837570	0.86265071						
GWA15	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22	GWA23	GWA24
0.88157313	0.57465664	0.63890630	0.62274161	0.66605329	0.23344291	0.60321546	0.79928314	0.66073911	0.41110166
0.83415038	0.88470413	0.85146484	0.89212200						
GWA29	GWA30	GWA31	GWA32	GWA33	GWA34	GWA35	GWA36	GWA37	GWA38
0.87525592	0.62678466	0.75795275	0.81286118	0.75824998	0.85825581	0.88552289	0.79196464	0.89870535	0.86559590
0.88641206	0.86910056	0.73673363	0.75952362						

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure

			Correlations			
GWA5	GWA6	GWA7	GWA1	GWA2	GWA3	GWA4
	GWA1	Getting information needed to do job	1.00000	0.73559	0.23982	0.06070
0.44633	0.53948	0.54553				
	GWA2	Identifying objects, actions, and events	0.73559	1.00000	0.44288	0.20602
0.49219	0.65788	0.53986				
	GWA3	Monitoring processes, materials, or surroundings	0.23982	0.44288	1.00000	0.48479
0.27757	0.28840	0.28843				
	GWA4	Inspecting equipment, structures or materials	0.06070	0.20602	0.48479	1.00000
0.21424	0.13101	0.25262				
	GWA5	Estimating the characteristics of materials, products, events or information	0.44633	0.49219	0.27757	0.21424
1.00000	0.52021	0.31343				
	GWA6	Judging the qualities of objects, services, or persons	0.53948	0.65788	0.28840	0.13101
0.52021	1.00000	0.52227				
	GWA7	Evaluating information for compliance to standards	0.54553	0.53986	0.28843	0.25262
0.31343	0.52227	1.00000				
	GWA8	Processing information	0.65920	0.63877	0.14533	-0.11870
0.39368	0.45392	0.57882				
	GWA9	Analyzing data or information	0.77649	0.76066	0.27587	0.00003
0.51516	0.62098	0.52145				
	GWA10	Making decisions and solving problems	0.68831	0.72550	0.34030	0.05501
0.59376	0.68601	0.48980				
	GWA11	Thinking creatively	0.40051	0.35748	0.08443	-0.12602
0.40532	0.47036	0.23428				
	GWA12	Updating and using job-relevant knowledge	0.66873	0.68708	0.29879	0.04945
0.47366	0.58560	0.47915				
	GWA13	Developing objectives and strategies	0.55343	0.53456	0.21220	-0.13258
0.53298	0.60621	0.37524				
	GWA14	Scheduling work and activities	0.40624	0.38378	0.17032	-0.12566
0.45231	0.47460	0.31329				
	GWA15	Organizing, planning, and prioritizing work	0.56225	0.53762	0.21094	-0.07280
0.53182	0.63957	0.41944				
	GWA16	Performing general physical activities	-0.42602	-0.35548	0.08863	0.31608
-0.12851	-0.34009	-0.32717				
	GWA17	Handling and moving objects	-0.46545	-0.40007	0.06653	0.37698
-0.22864	-0.40699	-0.28794				
	GWA18	Controlling machines and processes	-0.34227	-0.22161	0.31996	0.45656
-0.14142	-0.28542	-0.13261				
	GWA19	Interacting with computers	0.49594	0.41992	0.03721	-0.19377
0.22413	0.32775	0.42858				
	GWA20	Operating vehicles, mechanized devices, or equipment	-0.18305	-0.10293	0.09448	0.16938
0.02480	-0.19074	-0.17345				
	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.27790	0.21538	0.13901	0.33847
0.38534	0.17883	0.22166				
	GWA22	Implementing ideas, programs, systems or products	0.37580	0.39645	0.25581	0.14552
0.44885	0.50169	0.28955				
	GWA23	Repairing and maintaining mechanical equipment	-0.21354	-0.11256	0.24441	0.58812
-0.08494	-0.19505	-0.04515				
	GWA24	Repairing and maintaining electronic equipment	0.09589	0.16183	0.30150	0.47363
0.03018	0.00829	0.10073				
	GWA25	Documenting/recording information	0.52516	0.56436	0.20165	-0.07197
0.25161	0.41355	0.52178				
	GWA26	Interpreting the meaning of information for others	0.61886	0.58841	0.15170	-0.22067
0.34062	0.52544	0.42367				
	GWA27	Communicating with supervisors, peers or subordinates	0.52352	0.51337	0.27896	-0.11051
0.42650	0.46491	0.38839				
	GWA28	Communicating with persons outside the organizations	0.43590	0.37014	-0.06849	-0.34125
0.26336	0.40443	0.27222				
	GWA29	Establishing and maintaining interpersonal relationships	0.39691	0.33779	0.05991	-0.30885
0.30979	0.42857	0.26818				
	GWA30	Assisting and caring for others	0.13580	0.11538	0.06106	-0.26032
0.04468	0.14271	0.04194				
	GWA31	Selling or influencing others	0.31513	0.29639	-0.02173	-0.22387
0.32650	0.39709	0.21640				
	GWA32	Resolving conflicts and negotiating with others	0.37146	0.34193	0.08075	-0.19560
0.34456	0.41727	0.36899				
	GWA33	Performing for or working directly with the public	0.13649	0.10246	-0.11918	-0.36368
0.03398	0.16518	0.04144				
	GWA34	Coordinating the work and activities of others	0.39640	0.41574	0.30778	0.01610
0.49253	0.44249	0.32469				
	GWA35	Developing and building teams	0.36212	0.37022	0.23695	-0.06525
0.45820	0.45611	0.30003				
	GWA36	Teaching others	0.36325	0.34662	0.19195	-0.10524
0.31409	0.41374	0.24017				
	GWA37	Guiding, directing and motivating subordinates	0.34682	0.36206	0.25448	0.00153
0.45293	0.41472	0.30060				
	GWA38	Coaching and developing others	0.34832	0.32754	0.21427	-0.09990
0.36260	0.43509	0.24254				
	GWA39	Providing consultation and advice to others	0.61094	0.59377	0.17091	-0.12472
0.48021	0.61806	0.44136				
	GWA40	Performing administrative activities	0.46406	0.46882	0.14586	-0.10092
0.34434	0.43725	0.53192				
	GWA41	Staffing organizational units	0.23969	0.25929	0.13133	-0.05531
0.36207	0.36926	0.24323				
	GWA42	Monitoring and controlling resources	0.32476	0.37505	0.15682	-0.04546
0.48010	0.42817	0.35897				

Correlations

			GWA8	GWA9	GWA10	GWA11
	GWA12	Getting information needed to do job	0.65920	0.77649	0.68831	0.40051
0.66873	0.55343	0.40624				
	GWA2	Identifying objects, actions, and events	0.63877	0.76066	0.72550	0.35748
0.68708	0.53456	0.38378				
	GWA3	Monitoring processes, materials, or surroundings	0.14533	0.27587	0.34030	0.08443
0.29879	0.21220	0.17032				
	GWA4	Inspecting equipment, structures or materials	-0.11870	0.00003	0.05501	-0.12602

0.04945	-0.13258	-0.12566				
GWA5	Estimating the characteristics of materials, products, events or information		0.39368	0.51516	0.59376	0.40532
0.47366	0.53298	0.45231				
GWA6	Judging the qualities of objects, services, or persons		0.45392	0.62098	0.68601	0.47036
0.58560	0.60621	0.47460				
GWA7	Evaluating information for compliance to standards		0.57882	0.52145	0.48980	0.23428
0.47915	0.37524	0.31329				
GWA8	Processing information		1.00000	0.78636	0.62136	0.37201
0.65742	0.57612	0.46009				
GWA9	Analyzing data or information		0.78636	1.00000	0.82102	0.49520
0.76295	0.70813	0.51101				
GWA10	Making decisions and solving problems		0.62136	0.82102	1.00000	0.54574
0.72510	0.77023	0.63651				
GWA11	Thinking creatively		0.37201	0.49520	0.54574	1.00000
0.51736	0.62032	0.49549				
GWA12	Updating and using job-relevant knowledge		0.65742	0.76295	0.72510	0.51736
1.00000	0.65094	0.50228				
GWA13	Developing objectives and strategies		0.57612	0.70813	0.77023	0.62032
0.65094	1.00000	0.77973				
GWA14	Scheduling work and activities		0.46009	0.51101	0.63651	0.49549
0.50228	0.77973	1.00000				
GWA15	Organizing, planning, and prioritizing work		0.55501	0.67026	0.75372	0.64317
0.65917	0.83079	0.78678				
GWA16	Performing general physical activities		-0.54534	-0.50468	-0.39968	-0.35612
-0.39622	-0.40030	-0.31790				

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure

Correlations

			GWA8	GWA9	GWA10	GWA11
GWA12	GWA13	GWA14				
GWA17	Handling and moving objects		-0.57750	-0.57568	-0.59178	-0.36955
-0.46409	-0.62717	-0.57415				
GWA18	Controlling machines and processes		-0.39111	-0.38585	-0.42059	-0.34832
-0.32421	-0.49976	-0.44439				
GWA19	Interacting with computers		0.70339	0.59297	0.44407	0.37968
0.59415	0.46037	0.37385				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.20395	-0.19790	-0.10491	-0.22662
-0.12904	-0.15388	-0.10972				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.16836	0.25928	0.25838	0.44155
0.30710	0.22595	0.09743				
GWA22	Implementing ideas, programs, systems or products		0.25827	0.45952	0.51207	0.53010
0.50270	0.54058	0.36145				
GWA23	Repairing and maintaining mechanical equipment		-0.32147	-0.25644	-0.23695	-0.32015
-0.15578	-0.36725	-0.32936				
GWA24	Repairing and maintaining electronic equipment		-0.02831	0.06614	0.03981	-0.10302
0.19146	-0.15974	-0.13321				
GWA25	Documenting/recording information		0.77646	0.58656	0.50081	0.22316
0.54954	0.45129	0.42773				
GWA26	Interpreting the meaning of information for others		0.71984	0.73665	0.68921	0.47205
0.73370	0.70436	0.60341				
GWA27	Communicating with supervisors, peers or subordinates		0.60859	0.60636	0.65701	0.41410
0.59592	0.66203	0.68315				
GWA28	Communicating with persons outside the organizations		0.53562	0.49578	0.53173	0.41978
0.54133	0.58125	0.62635				
GWA29	Establishing and maintaining interpersonal relationships		0.48676	0.48486	0.56319	0.46105
0.54845	0.66073	0.74109				
GWA30	Assisting and caring for others		0.21898	0.18623	0.26627	0.16066
0.29582	0.31182	0.44465				
GWA31	Selling or influencing others		0.38031	0.41962	0.48298	0.45503
0.46501	0.60656	0.58333				
GWA32	Resolving conflicts and negotiating with others		0.44970	0.45746	0.54656	0.38428
0.45108	0.63039	0.69812				
GWA33	Performing for or working directly with the public		0.24869	0.17862	0.22096	0.23706
0.27563	0.29267	0.43967				
GWA34	Coordinating the work and activities of others		0.40814	0.47970	0.61990	0.43948
0.46630	0.70360	0.81538				
GWA35	Developing and building teams		0.38530	0.48523	0.59674	0.48833
0.47131	0.75635	0.77405				
GWA36	Teaching others		0.39083	0.46600	0.53447	0.43840
0.52460	0.68393	0.67937				
GWA37	Guiding, directing and motivating subordinates		0.35048	0.44190	0.57514	0.44089
0.41683	0.69733	0.77596				
GWA38	Coaching and developing others		0.34103	0.43173	0.54473	0.44720
0.47299	0.70876	0.73716				
GWA39	Providing consultation and advice to others		0.64800	0.75814	0.77416	0.57583
0.73967	0.81534	0.65745				
GWA40	Performing administrative activities		0.69489	0.54743	0.55015	0.27958
0.52016	0.57596	0.64939				
GWA41	Staffing organizational units		0.27499	0.32777	0.44456	0.32679
0.28091	0.58698	0.67942				
GWA42	Monitoring and controlling resources		0.47822	0.44931	0.51863	0.39401
0.41452	0.61792	0.68089				

Correlations

			GWA15	GWA16	GWA17	GWA18
GWA19	GWA20	GWA21				
GWA1	Getting information needed to do job		0.56225	-0.42602	-0.46545	-0.34227
0.49594	-0.18305	0.27790				
GWA2	Identifying objects, actions, and events		0.53762	-0.35548	-0.40007	-0.22161
0.41992	-0.10293	0.21538				
GWA3	Monitoring processes, materials, or surroundings		0.21094	0.08863	0.06653	0.31996
0.03721	0.09448	0.13901				
GWA4	Inspecting equipment, structures or materials		-0.07280	0.31608	0.37698	0.45656
-0.19377	0.16938	0.33847				
GWA5	Estimating the characteristics of materials, products, events or information		0.53182	-0.12851	-0.22864	-0.14142
0.22413	0.02480	0.38534				
GWA6	Judging the qualities of objects, services, or persons		0.63957	-0.34009	-0.40699	-0.28542
0.32775	-0.19074	0.17883				
GWA7	Evaluating information for compliance to standards		0.41944	-0.32717	-0.28794	-0.13261
0.42858	-0.17345	0.22166				

GWA8	Processing information		0.55501	-0.54534	-0.57750	-0.39111
0.70339	-0.20395	0.16836				
GWA9	Analyzing data or information		0.67026	-0.50468	-0.57568	-0.38585
0.59297	-0.19790	0.25928				
GWA10	Making decisions and solving problems		0.75372	-0.39968	-0.59178	-0.42059
0.44407	-0.10491	0.25838				
GWA11	Thinking creatively		0.64317	-0.35612	-0.36955	-0.34832
0.37968	-0.22662	0.44155				
GWA12	Updating and using job-relevant knowledge		0.65917	-0.39622	-0.46409	-0.32421
0.59415	-0.12904	0.30710				
GWA13	Developing objectives and strategies		0.83079	-0.40030	-0.62717	-0.49976
0.46037	-0.15388	0.22595				
GWA14	Scheduling work and activities		0.78678	-0.31790	-0.57415	-0.44439
0.37385	-0.10972	0.09743				
GWA15	Organizing, planning, and prioritizing work		1.00000	-0.37352	-0.55922	-0.46235
0.44435	-0.13946	0.25469				
GWA16	Performing general physical activities		-0.37352	1.00000	0.60731	0.43672
-0.55394	0.37589	-0.05281				
GWA17	Handling and moving objects		-0.55922	0.60731	1.00000	0.70393
-0.43569	0.12199	0.06928				
GWA18	Controlling machines and processes		-0.46235	0.43672	0.70393	1.00000
-0.35525	0.14111	0.09258				
GWA19	Interacting with computers		0.44435	-0.55394	-0.43569	-0.35525
1.00000	-0.24302	0.18807				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.13946	0.37589	0.12199	0.14111
-0.24302	1.00000	-0.09112				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.25469	-0.05281	0.06928	0.09258
0.18807	-0.09112	1.00000				
GWA22	Implementing ideas, programs, systems or products		0.56461	-0.18876	-0.11771	-0.09986
0.23368	-0.20158	0.45163				
GWA23	Repairing and maintaining mechanical equipment		-0.32492	0.46118	0.48697	0.57403
-0.34321	0.33317	0.06431				
GWA24	Repairing and maintaining electronic equipment		-0.06422	0.09147	0.23942	0.25892
0.07124	0.08379	0.19099				
GWA25	Documenting/recording information		0.47765	-0.43654	-0.50170	-0.33451
0.56735	-0.10058	0.02352				
GWA26	Interpreting the meaning of information for others		0.66507	-0.48462	-0.67088	-0.53690
0.59892	-0.14268	0.09758				
GWA27	Communicating with supervisors, peers or subordinates		0.67344	-0.33893	-0.60517	-0.43244
0.50699	-0.02466	0.10901				
GWA28	Communicating with persons outside the organizations		0.60374	-0.41590	-0.64919	-0.62226
0.44881	-0.06719	-0.03257				
GWA29	Establishing and maintaining interpersonal relationships		0.67125	-0.31468	-0.61516	-0.54505
0.44262	-0.05959	-0.01933				
GWA30	Assisting and caring for others		0.30163	-0.02878	-0.29011	-0.32447
0.18412	-0.00796	-0.15897				
GWA31	Selling or influencing others		0.58072	-0.32273	-0.54017	-0.44395
0.34993	-0.03927	0.05315				
GWA32	Resolving conflicts and negotiating with others		0.63881	-0.30008	-0.57500	-0.49603
0.37106	-0.03016	-0.01658				
GWA33	Performing for or working directly with the public		0.33977	-0.17236	-0.39796	-0.45610
0.20107	0.01291	-0.20594				
GWA34	Coordinating the work and activities of others		0.70457	-0.21863	-0.47224	-0.31579
0.32293	-0.02202	0.17884				
GWA35	Developing and building teams		0.70515	-0.23180	-0.47664	-0.34337
0.32716	-0.05682	0.14222				
GWA36	Teaching others		0.61828	-0.23391	-0.46199	-0.37591
0.32733	-0.06560	0.08625				
GWA37	Guiding, directing and motivating subordinates		0.66932	-0.23491	-0.43261	-0.29806
0.27723	-0.07461	0.15373				
GWA38	Coaching and developing others		0.63465	-0.22749	-0.46920	-0.34505
0.29750	-0.06029	0.07886				
GWA39	Providing consultation and advice to others		0.74576	-0.48501	-0.66302	-0.53004
0.55872	-0.17276	0.23730				
GWA40	Performing administrative activities		0.61980	-0.42787	-0.53832	-0.40050
0.55483	-0.11633	-0.01093				
GWA41	Staffing organizational units		0.55504	-0.22906	-0.38754	-0.29216
0.23214	-0.07696	0.01904				
GWA42	Monitoring and controlling resources		0.63887	-0.23390	-0.42214	-0.33774
0.35449	-0.05297	0.07584				

Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA1	Getting information needed to do job		0.37580	-0.21354	0.09589	0.52516
0.61886	0.52352	0.43590				
GWA2	Identifying objects, actions, and events		0.39645	-0.11256	0.16183	0.56436
0.58841	0.51337	0.37014				
GWA3	Monitoring processes, materials, or surroundings		0.25581	0.24441	0.30150	0.20165
0.15170	0.27896	-0.06849				
GWA4	Inspecting equipment, structures or materials		0.14552	0.58812	0.47363	-0.07197
-0.22067	-0.11051	-0.34125				
GWA5	Estimating the characteristics of materials, products, events or information		0.44885	-0.08494	0.03018	0.25161
0.34062	0.42650	0.26336				
GWA6	Judging the qualities of objects, services, or persons		0.50169	-0.19505	0.00829	0.41355
0.52544	0.46491	0.40443				
GWA7	Evaluating information for compliance to standards		0.28955	-0.04515	0.10073	0.52178
0.42367	0.38839	0.27222				
GWA8	Processing information		0.25827	-0.32147	-0.02831	0.77646
0.71984	0.60859	0.53562				
GWA9	Analyzing data or information		0.45952	-0.25644	0.06614	0.58656
0.73665	0.60636	0.49578				
GWA10	Making decisions and solving problems		0.51207	-0.23695	0.03981	0.50081
0.68921	0.65701	0.53173				
GWA11	Thinking creatively		0.53010	-0.32015	-0.10302	0.22316
0.47205	0.41410	0.41978				
GWA12	Updating and using job-relevant knowledge		0.50270	-0.15578	0.19146	0.54954
0.73370	0.59592	0.54133				
GWA13	Developing objectives and strategies		0.54058	-0.36725	-0.15974	0.45129
0.70436	0.66203	0.58125				
GWA14	Scheduling work and activities		0.36145	-0.32936	-0.13321	0.42773
0.60341	0.68315	0.62635				
GWA15	Organizing, planning, and prioritizing work		0.56461	-0.32492	-0.06422	0.47765
0.66507	0.67344	0.60374				
GWA16	Performing general physical activities		-0.18876	0.46118	0.09147	-0.43654
-0.48462	-0.33893	-0.41590				

GWA17	Handling and moving objects	-0.11771	0.48697	0.23942	-0.50170
-0.67088	-0.60517 -0.64919				
GWA18	Controlling machines and processes	-0.09986	0.57403	0.25892	-0.33451
-0.53690	-0.43244 -0.62226				
GWA19	Interacting with computers	0.23368	-0.34321	0.07124	0.56735
0.59892	0.50699 0.44881				
GWA20	Operating vehicles, mechanized devices, or equipment	-0.20158	0.33317	0.08379	-0.10058
-0.14268	-0.02466 -0.06719				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.45163	0.06431	0.19099	0.02352
0.09758	0.10901 -0.03257				
GWA22	Implementing ideas, programs, systems or products	1.00000	-0.09140	0.12799	0.12548
0.32039	0.28764 0.18967				
GWA23	Repairing and maintaining mechanical equipment	-0.09140	1.00000	0.44674	-0.24859
-0.39841	-0.31147 -0.45284				
GWA24	Repairing and maintaining electronic equipment	0.12799	0.44674	1.00000	0.01939
-0.07082	-0.04019 -0.15263				
GWA25	Documenting/recording information	0.12548	-0.24859	0.01939	1.00000
0.65022	0.57692 0.54943				
GWA26	Interpreting the meaning of information for others	0.32039	-0.39841	-0.07082	0.65022
1.00000	0.69195 0.73336				
GWA27	Communicating with supervisors, peers or subordinates	0.28764	-0.31147	-0.04019	0.57692
0.69195	1.00000 0.59225				
GWA28	Communicating with persons outside the organizations	0.18967	-0.45284	-0.15263	0.54943
0.73336	0.59225 1.00000				
GWA29	Establishing and maintaining interpersonal relationships	0.23766	-0.38656	-0.13975	0.50086
0.71616	0.71113 0.80463				
GWA30	Assisting and caring for others	0.04669	-0.27961	-0.11081	0.31063
0.46070	0.41887 0.54644				
GWA31	Selling or influencing others	0.26080	-0.31270	-0.15506	0.37070
0.56086	0.49216 0.71184				
GWA32	Resolving conflicts and negotiating with others	0.22943	-0.32212	-0.15452	0.45672
0.57922	0.61081 0.70152				
GWA33	Performing for or working directly with the public	0.01055	-0.34599	-0.16102	0.32599
0.49627	0.34086 0.78675				

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Correlations

GWA26	GWA27	GWA28	GWA22	GWA23	GWA24	GWA25
GWA34	Coordinating the work and activities of others		0.39345	-0.23018	-0.08839	0.36771
0.51139	0.75006 0.45763					
GWA35	Developing and building teams		0.40340	-0.24506	-0.10483	0.32386
0.52434	0.64636 0.45141					
GWA36	Teaching others		0.34630	-0.25997	-0.04666	0.36839
0.64340	0.59508 0.52796					
GWA37	Guiding, directing and motivating subordinates		0.36247	-0.23185	-0.10777	0.28580
0.44401	0.64043 0.36725					
GWA38	Coaching and developing others		0.34004	-0.23605	-0.05783	0.33328
0.55493	0.61965 0.47280					
GWA39	Providing consultation and advice to others		0.45176	-0.36815	-0.05509	0.53282
0.80818	0.69558 0.69394					
GWA40	Performing administrative activities		0.20697	-0.28026	-0.04641	0.78136
0.62347	0.66035 0.63192					
GWA41	Staffing organizational units		0.27767	-0.20018	-0.12287	0.23836
0.32293	0.49432 0.34727					
GWA42	Monitoring and controlling resources		0.30255	-0.22316	-0.10100	0.46124
0.44944	0.56446 0.51686					

Correlations

GWA33	GWA34	GWA35	GWA29	GWA30	GWA31	GWA32
GWA1	Getting information needed to do job		0.39691	0.13580	0.31513	0.37146
0.13649	0.39640 0.36212					
GWA2	Identifying objects, actions, and events		0.33779	0.11538	0.29639	0.34193
0.10246	0.41574 0.37022					
GWA3	Monitoring processes, materials, or surroundings		0.05991	0.06106	-0.02173	0.08075
-0.11918	0.30778 0.23695					
GWA4	Inspecting equipment, structures or materials		-0.30885	-0.26032	-0.22387	-0.19560
-0.36368	0.01610 -0.06525					
GWA5	Estimating the characteristics of materials, products, events or information		0.30979	0.04468	0.32650	0.34456
0.03398	0.49253 0.45820					
GWA6	Judging the qualities of objects, services, or persons		0.42857	0.14271	0.39709	0.41727
0.16518	0.44249 0.45611					
GWA7	Evaluating information for compliance to standards		0.26818	0.04194	0.21640	0.36899
0.04144	0.32469 0.30003					
GWA8	Processing information		0.48676	0.21898	0.38031	0.44970
0.24869	0.40814 0.38530					
GWA9	Analyzing data or information		0.48486	0.18623	0.41962	0.45746
0.17862	0.47970 0.48523					
GWA10	Making decisions and solving problems		0.56319	0.26627	0.48298	0.54656
0.22096	0.61990 0.59674					
GWA11	Thinking creatively		0.46105	0.16066	0.45503	0.38428
0.23706	0.43948 0.48833					
GWA12	Updating and using job-relevant knowledge		0.54845	0.29582	0.46501	0.45108
0.27563	0.46630 0.47131					
GWA13	Developing objectives and strategies		0.66073	0.31182	0.60656	0.63039
0.29267	0.70360 0.75635					
GWA14	Scheduling work and activities		0.74109	0.44465	0.58333	0.69812
0.43967	0.81538 0.77405					
GWA15	Organizing, planning, and prioritizing work		0.67125	0.30163	0.58072	0.63881
0.33977	0.70457 0.70515					
GWA16	Performing general physical activities		-0.31468	-0.02878	-0.32273	-0.30008
-0.17236	-0.21863 -0.23180					
GWA17	Handling and moving objects		-0.61516	-0.29011	-0.54017	-0.57500
-0.39796	-0.47224 -0.47664					
GWA18	Controlling machines and processes		-0.54505	-0.32447	-0.44395	-0.49603
-0.45610	-0.31579 -0.34337					
GWA19	Interacting with computers		0.44262	0.18412	0.34993	0.37106
0.20107	0.32293 0.32716					
GWA20	Operating vehicles, mechanized devices, or equipment		-0.05959	-0.00796	-0.03927	-0.03016

0.01291	-0.02202	-0.05682				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		-0.01933	-0.15897	0.05315	-0.01658
-0.20594	0.17884	0.14222				
GWA22	Implementing ideas, programs, systems or products		0.23766	0.04669	0.26080	0.22943
0.01055	0.39345	0.40340				
GWA23	Repairing and maintaining mechanical equipment		-0.38656	-0.27961	-0.31270	-0.32212
-0.34599	-0.23018	-0.24506				
GWA24	Repairing and maintaining electronic equipment		-0.13975	-0.11081	-0.15506	-0.15452
-0.16102	-0.08839	-0.10483				
GWA25	Documenting/recording information		0.50086	0.31063	0.37070	0.45672
0.32599	0.36771	0.32386				
GWA26	Interpreting the meaning of information for others		0.71616	0.46070	0.56086	0.57922
0.49627	0.51139	0.52434				
GWA27	Communicating with supervisors, peers or subordinates		0.71113	0.41887	0.49216	0.61081
0.34086	0.75006	0.64636				
GWA28	Communicating with persons outside the organizations		0.80463	0.54644	0.71184	0.70152
0.78675	0.45763	0.45141				
GWA29	Establishing and maintaining interpersonal relationships		1.00000	0.67215	0.73798	0.76162
0.68324	0.63381	0.63933				
GWA30	Assisting and caring for others		0.67215	1.00000	0.37907	0.42706
0.62291	0.32743	0.31133				
GWA31	Selling or influencing others		0.73798	0.37907	1.00000	0.73182
0.57078	0.47929	0.52625				
GWA32	Resolving conflicts and negotiating with others		0.76162	0.42706	0.73182	1.00000
0.56989	0.63136	0.66827				
GWA33	Performing for or working directly with the public		0.68324	0.62291	0.57078	0.56989
1.00000	0.27250	0.28110				
GWA34	Coordinating the work and activities of others		0.63381	0.32743	0.47929	0.63136
0.27250	1.00000	0.84533				
GWA35	Developing and building teams		0.63933	0.31133	0.52625	0.66827
0.28110	0.84533	1.00000				
GWA36	Teaching others		0.65558	0.47975	0.46004	0.49680
0.38327	0.63954	0.68837				
GWA37	Guiding, directing and motivating subordinates		0.54273	0.22450	0.41733	0.58707
0.17879	0.87654	0.87448				
GWA38	Coaching and developing others		0.67809	0.46419	0.48840	0.57166
0.31811	0.73388	0.81333				
GWA39	Providing consultation and advice to others		0.71345	0.37579	0.65843	0.63002
0.37334	0.60223	0.63079				
GWA40	Performing administrative activities		0.65651	0.36105	0.53669	0.68345
0.42271	0.58067	0.56030				
GWA41	Staffing organizational units		0.46566	0.16719	0.42563	0.56675
0.19813	0.66320	0.73478				
GWA42	Monitoring and controlling resources		0.62454	0.27699	0.55564	0.64940
0.36030	0.64065	0.62935				
			Correlations			
GWA40	GWA41	GWA42	GWA36	GWA37	GWA38	GWA39
GWA1	Getting information needed to do job		0.36325	0.34682	0.34832	0.61094
0.46406	0.23969	0.32476				
GWA2	Identifying objects, actions, and events		0.34662	0.36206	0.32754	0.59377
0.46882	0.25929	0.37505				
GWA3	Monitoring processes, materials, or surroundings		0.19195	0.25448	0.21427	0.17091
0.14586	0.13133	0.15682				
GWA4	Inspecting equipment, structures or materials		-0.10524	0.00153	-0.09990	-0.12472
-0.10092	-0.05531	-0.04546				
GWA5	Estimating the characteristics of materials, products, events or information		0.31409	0.45293	0.36260	0.48021
0.34434	0.36207	0.48010				
GWA6	Judging the qualities of objects, services, or persons		0.41374	0.41472	0.43509	0.61806
0.43725	0.36926	0.42817				
GWA7	Evaluating information for compliance to standards		0.24017	0.30060	0.24254	0.44136
0.53192	0.24323	0.35897				
GWA8	Processing information		0.39083	0.35048	0.34103	0.64800
0.69489	0.27499	0.47822				
GWA9	Analyzing data or information		0.46600	0.44190	0.43173	0.75814
0.54743	0.32777	0.44931				
GWA10	Making decisions and solving problems		0.53447	0.57514	0.54473	0.77416
0.55015	0.44456	0.51863				
GWA11	Thinking creatively		0.43840	0.44089	0.44720	0.57583
0.27958	0.32679	0.39401				
GWA12	Updating and using job-relevant knowledge		0.52460	0.41683	0.47299	0.73967
0.52016	0.28091	0.41452				
GWA13	Developing objectives and strategies		0.68393	0.69733	0.70876	0.81534
0.57596	0.58698	0.61792				
GWA14	Scheduling work and activities		0.67937	0.77596	0.73716	0.65745
0.64939	0.67942	0.68089				
GWA15	Organizing, planning, and prioritizing work		0.61828	0.66932	0.63465	0.74576
0.61980	0.55504	0.63887				
GWA16	Performing general physical activities		-0.23391	-0.23491	-0.22749	-0.48501
-0.42787	-0.22906	-0.23390				
GWA17	Handling and moving objects		-0.46199	-0.43261	-0.46920	-0.66302
-0.53832	-0.38754	-0.42214				
GWA18	Controlling machines and processes		-0.37591	-0.29806	-0.34505	-0.53004
-0.40050	-0.29216	-0.33774				
GWA19	Interacting with computers		0.32733	0.27723	0.29750	0.55872
0.55483	0.23214	0.35449				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.06560	-0.07461	-0.06029	-0.17276
-0.11633	-0.07696	-0.05297				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.08625	0.15373	0.07886	0.23730
-0.01093	0.01904	0.07584				
GWA22	Implementing ideas, programs, systems or products		0.34630	0.36247	0.34004	0.45176
0.20697	0.27767	0.30255				
GWA23	Repairing and maintaining mechanical equipment		-0.25997	-0.23185	-0.23605	-0.36815
-0.28026	-0.20018	-0.22316				
GWA24	Repairing and maintaining electronic equipment		-0.04666	-0.10777	-0.05783	-0.05509
-0.04641	-0.12287	-0.10100				
GWA25	Documenting/recording information		0.36839	0.28580	0.33328	0.53282
0.78136	0.23836	0.46124				
GWA26	Interpreting the meaning of information for others		0.64340	0.44401	0.55493	0.80818
0.62347	0.32293	0.44944				
GWA27	Communicating with supervisors, peers or subordinates		0.59508	0.64043	0.61965	0.69558
0.66035	0.49432	0.56446				
GWA28	Communicating with persons outside the organizations		0.52796	0.36725	0.47280	0.69394
0.63192	0.34727	0.51686				
GWA29	Establishing and maintaining interpersonal relationships		0.65558	0.54273	0.67809	0.71345
0.65651	0.46566	0.62454				
GWA30	Assisting and caring for others		0.47975	0.22450	0.46419	0.37579

0.36105	0.16719	0.27699				
GWA31	Selling or influencing others		0.46004	0.41733	0.48840	0.65843
0.53669	0.42563	0.55564				
GWA32	Resolving conflicts and negotiating with others		0.49680	0.58707	0.57166	0.63002
0.68345	0.56675	0.64940				
GWA33	Performing for or working directly with the public		0.38327	0.17879	0.31811	0.37334
0.42271	0.19813	0.36030				
GWA34	Coordinating the work and activities of others		0.63954	0.87654	0.73388	0.60223
0.58067	0.66320	0.64065				
GWA35	Developing and building teams		0.68837	0.87448	0.81333	0.63079
0.56030	0.73478	0.62935				
GWA36	Teaching others		1.00000	0.65912	0.88333	0.64486
0.47628	0.46180	0.45327				
GWA37	Guiding, directing and motivating subordinates		0.65912	1.00000	0.77736	0.55970
0.51311	0.75621	0.62614				
GWA38	Coaching and developing others		0.88333	0.77736	1.00000	0.63230
0.50320	0.62267	0.52409				
GWA39	Providing consultation and advice to others		0.64486	0.55970	0.63230	1.00000
0.60543	0.45132	0.54591				
GWA40	Performing administrative activities		0.47628	0.51311	0.50320	0.60543
1.00000	0.51584	0.70477				
GWA41	Staffing organizational units		0.46180	0.75621	0.62267	0.45132
0.51584	1.00000	0.61953				
GWA42	Monitoring and controlling resources		0.45327	0.62614	0.52409	0.54591
0.70477	0.61953	1.00000				

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 42 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	18.5717153	14.3127003	0.4422	0.4422
2	4.2590149	1.1175312	0.1014	0.5436
3	3.1414838	1.0829707	0.0748	0.6184
4	2.0585131	0.5230758	0.0490	0.6674
5	1.5354373	0.3866301	0.0366	0.7040
6	1.1488072	0.0870401	0.0274	0.7313
7	1.0617671	0.1388300	0.0253	0.7566
8	0.9229371	0.1093832	0.0220	0.7786
9	0.8135539	0.1951135	0.0194	0.7979
10	0.6184404	0.0359129	0.0147	0.8127
11	0.5825275	0.0349745	0.0139	0.8265
12	0.5475530	0.0603372	0.0130	0.8396
13	0.4872158	0.0350373	0.0116	0.8512
14	0.4521785	0.0271531	0.0108	0.8619
15	0.4250254	0.0203559	0.0101	0.8721
16	0.4046696	0.0204088	0.0096	0.8817
17	0.3842607	0.0348905	0.0091	0.8908
18	0.3493702	0.0214728	0.0083	0.8992
19	0.3278975	0.0104921	0.0078	0.9070
20	0.3174054	0.0088788	0.0076	0.9145
21	0.3085266	0.0397070	0.0073	0.9219
22	0.2688195	0.0041827	0.0064	0.9283
23	0.2646368	0.0171013	0.0063	0.9346
24	0.2475355	0.0061599	0.0059	0.9405
25	0.2413756	0.0278148	0.0057	0.9462
26	0.2135608	0.0021627	0.0051	0.9513
27	0.2113981	0.0216071	0.0050	0.9563
28	0.1897910	0.0159923	0.0045	0.9608
29	0.1737987	0.0071244	0.0041	0.9650
30	0.1666742	0.0068050	0.0040	0.9689
31	0.1598692	0.0137964	0.0038	0.9728
32	0.1460729	0.0120696	0.0035	0.9762
33	0.1340033	0.0052085	0.0032	0.9794
34	0.1287948	0.0123948	0.0031	0.9825
35	0.1164000	0.0051511	0.0028	0.9853
36	0.1112489	0.0068843	0.0026	0.9879
37	0.1043646	0.0087025	0.0025	0.9904
38	0.0956621	0.0061513	0.0023	0.9927
39	0.0895108	0.0111799	0.0021	0.9948
40	0.0783309	0.0025893	0.0019	0.9967
41	0.0757416	0.0116310	0.0018	0.9985
42	0.0641106		0.0015	1.0000

7 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Components

Final Communality Estimates: Total = 31.776739

GWA1	GWA2	GWA3	GWA4	GWA5	GWA6	GWA7	GWA8	GWA9	GWA10	
GWA11	GWA12	GWA13	GWA14							
0.71486482	0.79427068	0.62761067	0.74288548	0.64611586	0.60515086	0.61805338	0.82009310	0.85042666	0.84098201	
0.71399913	0.79664552	0.85071443	0.82506589							
	GWA15	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22	GWA23	GWA24
	GWA25	GWA26	GWA27	GWA28						
	0.80716348	0.66763943	0.76267132	0.67804846	0.68853521	0.59925939	0.65079612	0.66812938	0.66234009	0.55916119
	0.77765456	0.84316224	0.72019144	0.87151134						

GWA29 GWA39	GWA30 GWA40	GWA31 GWA41	GWA32 GWA42	GWA33	GWA34	GWA35	GWA36	GWA37	GWA38
0.88525601	0.72245682	0.73021891	0.78397871	0.80266101	0.83790280	0.86547712	0.79940578	0.89128352	0.86168596
0.82368211	0.86705810	0.74519020	0.75733940						

PRINCIPAL AXES ANALYSIS OF 42 GWA DESCRIPTORS-IMPORTANCE SCALE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

7	1	2	3	4	5	6	
	1	0.62115	0.60250	0.38987	-0.17139	0.24474	-0.07401
0.06642	2	0.36868	-0.00485	-0.49998	0.67996	0.38020	0.08080
-0.02541	3	-0.58483	0.69147	0.01369	0.26220	0.05305	0.32650
-0.03863	4	0.20369	-0.11073	0.47997	0.54338	-0.58505	0.25227
0.12122	5	-0.14519	-0.34418	0.55315	0.11571	0.58581	0.21122
-0.39155	6	-0.02876	-0.16766	0.02111	-0.14841	0.27232	0.47307
0.80662	7	-0.26986	0.00112	0.24708	0.32994	0.18200	-0.74117
0.41810							

Rotated Factor Pattern

Factor5	Factor6	Factor7	Factor1	Factor2	Factor3	Factor4
GWA1	Getting information needed to do job		0.79242	0.15165	0.06455	-0.02574
0.23674	-0.02396	-0.04989				
GWA2	Identifying objects, actions, and events		0.83177	0.19240	0.01541	0.12305
0.18613	0.11594	-0.04417				
GWA3	Monitoring processes, materials, or surroundings		0.33608	0.29137	-0.09631	0.59581
0.00623	0.16156	-0.19838				
GWA4	Inspecting equipment, structures or materials		0.09013	0.00699	-0.28683	0.74990
0.16745	0.22603	0.10473				
GWA5	Estimating the characteristics of materials, products, events or information		0.39777	0.36995	-0.04758	0.05133
0.47249	0.30004	0.18127				
GWA6	Judging the qualities of objects, services, or persons		0.59317	0.31680	0.05354	-0.03598
0.36559	0.12020	0.02600				
GWA7	Evaluating information for compliance to standards		0.64037	0.18927	-0.02602	0.20239
0.06894	-0.16448	0.31419				
GWA8	Processing information		0.80901	0.18109	0.18276	-0.10171
0.02009	-0.24281	0.17235				
GWA9	Analyzing data or information		0.82851	0.25555	0.10903	-0.07345
0.27660	-0.04721	-0.05174				
GWA10	Making decisions and solving problems		0.70173	0.43019	0.14894	-0.06338
0.33958	0.13479	-0.06177				
GWA11	Thinking creatively		0.23910	0.30607	0.19701	-0.20677
0.67734	-0.14800	-0.02980				
GWA12	Updating and using job-relevant knowledge		0.69319	0.22523	0.32798	0.10937
0.35872	-0.09079	-0.09462				
GWA13	Developing objectives and strategies		0.47597	0.62577	0.21651	-0.22542
0.36437	0.00397	-0.04589				
GWA14	Scheduling work and activities		0.27367	0.76014	0.34529	-0.13806
0.16086	-0.03326	0.08418				
GWA15	Organizing, planning, and prioritizing work		0.46349	0.57718	0.26709	-0.13571
0.40529	-0.00216	0.07197				
GWA16	Performing general physical activities		-0.52932	-0.08572	-0.01737	0.42316
-0.06439	0.43594	-0.08101				
GWA17	Handling and moving objects		-0.54509	-0.33207	-0.26504	0.53213
0.04283	-0.00321	0.00473				
GWA18	Controlling machines and processes		-0.32220	-0.18490	-0.34833	0.64487
-0.05332	0.00452	0.00067				
GWA19	Interacting with computers		0.58075	0.12479	0.22787	-0.08150
0.08942	-0.50114	0.13412				
GWA20	Operating vehicles, mechanized devices, or equipment		-0.10723	-0.02600	0.11269	0.20608
-0.20164	0.70028	0.02940				
GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.11843	0.01365	-0.12165	0.24633
0.73033	-0.14935	0.07365				
GWA22	Implementing ideas, programs, systems or products		0.23883	0.28011	0.00909	0.11124
0.71186	-0.09271	-0.06952				
GWA23	Repairing and maintaining mechanical equipment		-0.18063	-0.15305	-0.17824	0.70667
-0.05165	0.26077	0.06685				
GWA24	Repairing and maintaining electronic equipment		0.12564	-0.15612	0.04874	0.69877
0.09468	-0.12630	-0.05858				
GWA25	Documenting/recording information		0.71912	0.17708	0.31443	0.02763
-0.19233	-0.19654	0.23221				
GWA26	Interpreting the meaning of information for others		0.67059	0.29219	0.48457	-0.17984
0.11664	-0.10282	-0.12953				
GWA27	Communicating with supervisors, peers or subordinates		0.53006	0.57496	0.32345	-0.05619
0.01120	-0.02066	-0.01771				
GWA28	Communicating with persons outside the organizations		0.39610	0.23671	0.72918	-0.30920
0.09935	0.00621	0.14621				
GWA29	Establishing and maintaining interpersonal relationships		0.29878	0.49280	0.71246	-0.18637
0.08577	-0.02548	0.05284				
GWA30	Assisting and caring for others		0.06425	0.24333	0.76363	-0.01734
-0.11807	-0.03312	-0.24626				
GWA31	Selling or influencing others		0.22268	0.34141	0.58415	-0.24492
0.26848	0.08577	0.28881				
GWA32	Resolving conflicts and negotiating with others		0.28725	0.53917	0.50154	-0.18839
0.07042	0.06634	0.33820				
GWA33	Performing for or working directly with the public		0.06170	0.11277	0.84822	-0.22490
-0.03228	0.04793	0.11287				
GWA34	Coordinating the work and activities of others		0.26371	0.84799	0.16731	-0.00177
0.13862	0.02521	0.03782				
GWA35	Developing and building teams		0.20786	0.86837	0.17699	-0.06475
0.17920	-0.02053	0.01252				

GWA36	Teaching others			0.25067	0.65509	0.40479	-0.01714
0.12173	-0.10720	-0.34200					
GWA37	Guiding, directing and motivating subordinates			0.19137	0.91205	0.03426	-0.04848
0.13341	-0.03624	0.01360					
GWA38	Coaching and developing others			0.18637	0.80524	0.31615	-0.01926
0.10670	-0.08545	-0.24397					
GWA39	Providing consultation and advice to others			0.60335	0.42063	0.37122	-0.18300
0.32749	-0.04832	-0.04299					
GWA40	Performing administrative activities			0.53632	0.46908	0.36473	-0.02339
-0.12806	-0.18575	0.41822					
GWA41	Staffing organizational units			0.10395	0.81089	0.01633	-0.11997
0.05468	-0.02681	0.24180					
GWA42	Monitoring and controlling resources			0.27179	0.61503	0.26561	-0.05077
0.12080	0.01643	0.46607					

Variance Explained by Each Factor

Factor7	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
	9.0148510	8.4833166	4.8975183	3.4998836	3.0887953	1.5042883
1.2880856						

Final Communality Estimates: Total = 31.776739

GWA1	GWA2	GWA3	GWA4	GWA5	GWA6	GWA7	GWA8	GWA9	GWA10
GWA11	GWA12	GWA13	GWA14						
0.71486482	0.79427068	0.62761067	0.74288548	0.64611586	0.60515086	0.61805338	0.82009310	0.85042666	0.84098201
0.71399913	0.79664522	0.85071443	0.82506589						
GWA15	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22	GWA23	GWA24
GWA25	GWA26	GWA27	GWA28						
0.80716348	0.66763943	0.76267132	0.67804846	0.68853521	0.59925939	0.65079612	0.66812938	0.66234009	0.55916119
0.77765456	0.84316224	0.72019144	0.87151134						
GWA29	GWA30	GWA31	GWA32	GWA33	GWA34	GWA35	GWA36	GWA37	GWA38
GWA39	GWA40	GWA41	GWA42						
0.88525601	0.72245682	0.73021891	0.78397871	0.80266101	0.83790280	0.86547712	0.79940578	0.89128352	0.86168596
0.82368211	0.86705810	0.74519020	0.75733940						

PRINCIPAL AXES ANALYSIS OF ABSTRACT-LEVEL
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Correlations

GWA11	GWA12	GWA13	GWA15	GWA1	GWA2	GWA3	GWA9	GWA10
GWA1	GWA1	Getting information needed to do job		1.00000	0.90697	0.65542	0.92141	0.91409
0.69567	0.86648	0.82289	0.83834					
GWA2	GWA2	Identifying objects, actions, and events		0.90697	1.00000	0.70389	0.89621	0.89846
0.64525	0.85705	0.77303	0.78660					
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.65542	0.70389	1.00000	0.64779	0.68143
0.42704	0.72585	0.53931	0.53629					
GWA9	GWA9	Analyzing data or information		0.92141	0.89621	0.64779	1.00000	0.92836
0.67710	0.87458	0.82897	0.80481					
GWA10	GWA10	Making decisions and solving problems		0.91409	0.89846	0.68143	0.92836	1.00000
0.71089	0.85987	0.86597	0.85997					
GWA11	GWA11	Thinking creatively		0.69567	0.64525	0.42704	0.67710	0.71089
1.00000	0.66240	0.73668	0.75999					
GWA12	GWA12	Updating and using job-relevant knowledge		0.86648	0.85705	0.72585	0.87458	0.85987
0.66240	1.00000	0.74419	0.74864					
GWA13	GWA13	Developing objectives and strategies		0.82289	0.77303	0.53931	0.82897	0.86597
0.73668	0.74419	1.00000	0.88606					
GWA15	GWA15	Organizing, planning, and prioritizing work		0.83834	0.78660	0.53629	0.80481	0.85997
0.75999	0.74864	0.88606	1.00000					
GWA26	GWA26	Interpreting the meaning of information for others		0.87184	0.83261	0.57097	0.88293	0.85579
0.65316	0.82108	0.80192	0.78540					
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.66540	0.60038	0.36208	0.59639	0.66189
0.56509	0.55176	0.71348	0.74164					
GWA30	GWA30	Assisting and caring for others		0.35667	0.32698	0.28056	0.29793	0.35152
0.23521	0.33782	0.36179	0.35117					
GWA31	GWA31	Selling or influencing others		0.56207	0.52803	0.27284	0.52623	0.58213
0.53266	0.48897	0.68477	0.67994					
GWA32	GWA32	Resolving conflicts and negotiating with others		0.57827	0.52847	0.30435	0.52701	0.61203
0.45370	0.45398	0.68431	0.69386					
GWA34	GWA34	Coordinating the work and activities of others		0.64678	0.61841	0.50801	0.60320	0.68923
0.57417	0.56149	0.74458	0.75663					
GWA35	GWA35	Developing and building teams		0.61053	0.57356	0.45274	0.58736	0.66668
0.59126	0.53770	0.76172	0.74967					
GWA36	GWA36	Teaching others		0.64508	0.57803	0.48213	0.61729	0.64034
0.54877	0.60511	0.70417	0.67590					
GWA37	GWA37	Guiding, directing and motivating subordinates		0.60523	0.57015	0.44798	0.56562	0.64729
0.54806	0.51532	0.71224	0.71533					
GWA38	GWA38	Coaching and developing others		0.59423	0.53881	0.44335	0.54881	0.61073
0.54933	0.52062	0.70900	0.68278					
GWA39	GWA39	Providing consultation and advice to others		0.85509	0.81237	0.55559	0.85986	0.87854
0.70122	0.79166	0.87997	0.85867					
GWA42	GWA42	Monitoring and controlling resources		0.57071	0.56590	0.35293	0.54894	0.61343
0.54253	0.48208	0.72160	0.72107					
KN1	KN1	Administration and Management		0.73706	0.67013	0.43852	0.70084	0.75233
0.57226	0.61169	0.81664	0.79089					
KN22	KN22	Therapy and Counseling		0.36053	0.32161	0.31294	0.32644	0.36370
0.23885	0.34801	0.37727	0.33536					
sk2	SK2	Active listening		0.78187	0.69622	0.43065	0.71851	0.74053
0.53824	0.66974	0.70404	0.73850					
sk5	SK5	Mathematics		0.69674	0.68381	0.52133	0.74572	0.68729
0.47596	0.70545	0.59873	0.58301					
sk6	SK6	Science		0.54046	0.60422	0.64082	0.60604	0.54980
0.37991	0.66454	0.40010	0.41482					
sk7	SK7	Critical thinking		0.88165	0.83203	0.61506	0.85729	0.87047

0.61793	0.80255	0.77186	0.80836					
sk8	SK8	Active learning		0.87401	0.82431	0.57437	0.86061	0.85323
0.69405	0.81042	0.78542	0.80617					
sk9	SK9	Learning strategies		0.73625	0.65943	0.48572	0.69160	0.70887
0.60600	0.66413	0.72169	0.73489					
sk10	SK10	Monitoring		0.77948	0.71407	0.54515	0.74165	0.77635
0.62445	0.69407	0.76035	0.78106					
sk11	SK11	Social Perceptiveness		0.61946	0.53575	0.31553	0.54470	0.60972
0.47898	0.48356	0.65629	0.67884					
sk12	SK12	Coordination		0.67108	0.60964	0.47384	0.59369	0.68982
0.50591	0.54416	0.69695	0.74329					
sk13	SK13	Persuasion		0.70107	0.63674	0.39621	0.64539	0.70063
0.51861	0.59371	0.73113	0.74970					
sk14	SK14	Negotiation		0.65094	0.59420	0.34922	0.58915	0.67524
0.47965	0.51775	0.70900	0.74349					
sk15	SK15	Instructing		0.65289	0.58392	0.47817	0.59215	0.63338
0.51026	0.58224	0.65538	0.66928					
sk17	SK17	Problem identification		0.80447	0.76574	0.64573	0.79439	0.81653
0.51466	0.77478	0.73320	0.73899					
sk18	SK18	Information gathering		0.89800	0.83513	0.54866	0.89111	0.85596
0.60964	0.80790	0.79400	0.78721					
sk19	SK19	Information organization		0.85385	0.78923	0.48014	0.83881	0.79985
0.63489	0.76121	0.75329	0.75512					
sk20	SK20	Synthesis/Reorganization		0.85969	0.78927	0.50137	0.84229	0.82849
0.70057	0.77589	0.77871	0.80598					
sk22	SK22	Idea evaluation		0.85152	0.77829	0.55060	0.82418	0.85740
0.72154	0.75202	0.83820	0.84603					
sk24	SK24	Solution appraisal		0.82441	0.75558	0.55433	0.81497	0.82894
0.64202	0.75882	0.80641	0.79866					
sk37	SK37	Visioning		0.79515	0.72309	0.54409	0.75965	0.79969
0.63659	0.70901	0.78434	0.78457					
sk38	SK38	Systems perceptions		0.77322	0.72695	0.63642	0.75506	0.78571
0.50715	0.69293	0.73567	0.72402					
sk39	SK39	Identification of downstream consequences		0.79179	0.75031	0.59202	0.78552	0.81587
0.57047	0.71705	0.80119	0.77588					
sk40	SK40	Identification of key causes		0.80916	0.73595	0.55457	0.78457	0.82021
0.59967	0.71925	0.80531	0.80221					
sk41	SK41	Judgment and decision making		0.83499	0.78200	0.57958	0.81768	0.85817
0.57962	0.74511	0.80008	0.78933					
sk42	SK42	Systems evaluation		0.78260	0.73841	0.59438	0.77887	0.81001
0.55893	0.70999	0.78016	0.75732					
sk43	SK43	Time management		0.69426	0.61297	0.41344	0.62670	0.69380
0.55721	0.56466	0.74072	0.76689					
sk46	SK46	Management of personnel resources		0.60620	0.56001	0.42054	0.54971	0.63808
0.50773	0.48655	0.68940	0.71146					

Correlations

GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
GWA1	GWA1	Getting information needed to do job		0.87184	0.66540	0.35667	0.56207	0.57827
0.64678	0.61053	0.64508	0.60523					
GWA2	GWA2	Identifying objects, actions, and events		0.83261	0.60038	0.32698	0.52803	0.52847
0.61841	0.57356	0.57803	0.57015					

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Correlations

GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.57097	0.36208	0.28056	0.27284	0.30435
0.50801	0.45274	0.48213	0.44798					
GWA9	GWA9	Analyzing data or information		0.88293	0.59639	0.29793	0.52623	0.52701
0.60320	0.58736	0.61729	0.56562					
GWA10	GWA10	Making decisions and solving problems		0.85579	0.66189	0.35152	0.58213	0.61203
0.68923	0.66668	0.64034	0.64729					
GWA11	GWA11	Thinking creatively		0.65316	0.56509	0.23521	0.53266	0.45370
0.57417	0.59126	0.54877	0.54806					
GWA12	GWA12	Updating and using job-relevant knowledge		0.82108	0.55176	0.33782	0.48897	0.45398
0.56149	0.53770	0.60511	0.51532					
GWA13	GWA13	Developing objectives and strategies		0.80192	0.71348	0.36179	0.68477	0.68431
0.74458	0.76172	0.70417	0.71224					
GWA15	GWA15	Organizing, planning, and prioritizing work		0.78540	0.74164	0.35117	0.67994	0.69386
0.75663	0.74967	0.67590	0.71533					
GWA26	GWA26	Interpreting the meaning of information for others		1.00000	0.71518	0.43417	0.59964	0.58311
0.60976	0.58344	0.69266	0.54494					
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.71518	1.00000	0.66208	0.77166	0.78415
0.70496	0.69288	0.68970	0.63172					
GWA30	GWA30	Assisting and caring for others		0.43417	0.66208	1.00000	0.44048	0.45778
0.36592	0.35621	0.51503	0.28590					
GWA31	GWA31	Selling or influencing others		0.59964	0.77166	0.44048	1.00000	0.77088
0.58573	0.61411	0.54576	0.50884					
GWA32	GWA32	Resolving conflicts and negotiating with others		0.58311	0.78415	0.45778	0.77088	1.00000
0.70914	0.73571	0.56067	0.67114					
GWA34	GWA34	Coordinating the work and activities of others		0.60976	0.70496	0.36592	0.58573	0.70914
1.00000	0.88187	0.67269	0.90378					
GWA35	GWA35	Developing and building teams		0.58344	0.69288	0.35621	0.61411	0.73571
0.88187	1.00000	0.70885	0.89117					
GWA36	GWA36	Teaching others		0.69266	0.68970	0.51503	0.54576	0.56067
0.67269	0.70885	1.00000	0.69056					
GWA37	GWA37	Guiding, directing and motivating subordinates		0.54494	0.63172	0.28590	0.50884	0.67114
0.90378	0.89117	0.69056	1.00000					
GWA38	GWA38	Coaching and developing others		0.59281	0.71425	0.47827	0.57746	0.65762
0.76834	0.84201	0.87858	0.81221					
GWA39	GWA39	Providing consultation and advice to others		0.87469	0.76680	0.41638	0.72099	0.69375
0.71292	0.70740	0.73519	0.66532					
GWA42	GWA42	Monitoring and controlling resources		0.53749	0.68807	0.29951	0.65097	0.71840
0.74576	0.74383	0.55161	0.72843					
KN1	KN1	Administration and Management		0.67365	0.73695	0.35792	0.62337	0.73079
0.82989	0.80158	0.67313	0.82987					
KN22	KN22	Therapy and Counseling		0.38107	0.49239	0.71391	0.31838	0.33611
0.27630	0.32899	0.53275	0.26977					

sk2	SK2	Active listening			0.78006	0.81327	0.56286	0.64149	0.67180
0.60929		0.56877	0.63857	0.54485					
sk5	SK5	Mathematics			0.63486	0.36085	0.07898	0.32740	0.30108
0.44726		0.38940	0.40615	0.42569					
sk6	SK6	Science			0.50385	0.14971	0.10294	0.08809	0.01018
0.27088		0.21666	0.34509	0.24472					
sk7	SK7	Critical thinking			0.80562	0.63705	0.35187	0.53874	0.55802
0.61052		0.57814	0.61664	0.58502					
sk8	SK8	Active learning			0.80699	0.61380	0.31141	0.51447	0.50190
0.59187		0.57864	0.62900	0.58418					
sk9	SK9	Learning strategies			0.68881	0.64535	0.41408	0.47143	0.50554
0.59903		0.62474	0.76124	0.63853					
sk10	SK10	Monitoring			0.70995	0.67425	0.36019	0.52091	0.56295
0.63265		0.63530	0.65791	0.63681					
sk11	SK11	Social Perceptiveness			0.64276	0.84466	0.65543	0.67658	0.72615
0.58981		0.59320	0.65783	0.55688					
sk12	SK12	Coordination			0.60832	0.71648	0.41798	0.55637	0.65218
0.79081		0.73166	0.61764	0.73220					
sk13	SK13	Persuasion			0.67901	0.76954	0.47024	0.76816	0.72996
0.62461		0.60158	0.62328	0.57536					
sk14	SK14	Negotiation			0.58491	0.71771	0.35021	0.74139	0.81119
0.67043		0.64576	0.54386	0.64405					
sk15	SK15	Instructing			0.64714	0.67972	0.48089	0.51791	0.53908
0.67915		0.66437	0.85528	0.69743					
sk17	SK17	Problem identification			0.74072	0.59939	0.35951	0.52499	0.55931
0.58830		0.57043	0.59109	0.54757					
sk18	SK18	Information gathering			0.84593	0.61616	0.31528	0.53810	0.54197
0.57569		0.54843	0.59103	0.54062					
sk19	SK19	Information organization			0.80891	0.60130	0.29983	0.48704	0.49917
0.54434		0.53160	0.59098	0.51909					
sk20	SK20	Synthesis/Reorganization			0.80345	0.61740	0.28942	0.50165	0.50918
0.57385		0.56358	0.59631	0.55836					
sk22	SK22	Idea evaluation			0.76760	0.64232	0.31115	0.56439	0.56097
0.64214		0.64329	0.65340	0.64227					
sk24	SK24	Solution appraisal			0.74940	0.62405	0.30966	0.53577	0.53906
0.61633		0.61822	0.62633	0.60658					
sk37	SK37	Visioning			0.68992	0.57630	0.22554	0.51208	0.52338
0.63863		0.63506	0.59712	0.63958					
sk38	SK38	Systems perceptions			0.66667	0.54104	0.21995	0.46455	0.52182
0.63448		0.60929	0.56128	0.61654					
sk39	SK39	Identification of downstream consequences			0.69489	0.56922	0.22351	0.53017	0.55443
0.65043		0.62822	0.58378	0.63886					
sk40	SK40	Identification of key causes			0.71822	0.62883	0.31419	0.57083	0.59498
0.63782		0.62750	0.61775	0.62038					
sk41	SK41	Judgment and decision making			0.75145	0.62695	0.34488	0.55512	0.59164
0.63503		0.61721	0.58981	0.60485					
sk42	SK42	Systems evaluation			0.68394	0.56471	0.20592	0.50877	0.55353
0.66610		0.64735	0.57671	0.66234					
sk43	SK43	Time management			0.62011	0.70012	0.36192	0.55458	0.65505
0.77556		0.74178	0.65190	0.79240					
sk46	SK46	Management of personnel resources			0.52455	0.64084	0.28234	0.49825	0.64407
0.85299		0.82078	0.64876	0.89055					

Correlations

sk2	sk5	sk6	sk7	GWA38	GWA39	GWA42	KN1	KN22
GWA1	GWA1	Getting information needed to do job		0.59423	0.85509	0.57071	0.73706	0.36053
0.78187		0.69674	0.54046	0.88165				
GWA2	GWA2	Identifying objects, actions, and events		0.53881	0.81237	0.56590	0.67013	0.32161
0.69622		0.68381	0.60422	0.83203				
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.44335	0.55559	0.35293	0.43852	0.31294
0.43065		0.52133	0.64082	0.61506				
GWA9	GWA9	Analyzing data or information		0.54881	0.85986	0.54894	0.70084	0.32644
0.71851		0.74572	0.60604	0.85729				
GWA10	GWA10	Making decisions and solving problems		0.61073	0.87854	0.61343	0.75233	0.36370
0.74053		0.68729	0.54980	0.87047				
GWA11	GWA11	Thinking creatively		0.54933	0.70122	0.54253	0.57226	0.23885
0.53824		0.47596	0.37991	0.61793				
GWA12	GWA12	Updating and using job-relevant knowledge		0.52062	0.79166	0.48208	0.61169	0.34801
0.66974		0.70545	0.66454	0.80255				
GWA13	GWA13	Developing objectives and strategies		0.70900	0.87997	0.72160	0.81664	0.37727
0.70404		0.59873	0.40010	0.77186				
GWA15	GWA15	Organizing, planning, and prioritizing work		0.68278	0.85867	0.72107	0.79089	0.33536
0.73850		0.58301	0.41482	0.80836				
GWA26	GWA26	Interpreting the meaning of information for others		0.59281	0.87469	0.53749	0.67365	0.38107
0.78006		0.63486	0.50385	0.80562				
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.71425	0.76680	0.68807	0.73695	0.49239
0.81327		0.36085	0.14971	0.63705				
GWA30	GWA30	Assisting and caring for others		0.47827	0.41638	0.29951	0.35792	0.71391
0.56286		0.07898	0.10294	0.35187				
GWA31	GWA31	Selling or influencing others		0.57746	0.72099	0.65097	0.62337	0.31838
0.64149		0.32740	0.08809	0.53874				
GWA32	GWA32	Resolving conflicts and negotiating with others		0.65762	0.69375	0.71840	0.73079	0.33611
0.67180		0.30108	0.01018	0.55802				
GWA34	GWA34	Coordinating the work and activities of others		0.76834	0.71292	0.74576	0.82989	0.27630
0.60929		0.44726	0.27088	0.61052				
GWA35	GWA35	Developing and building teams		0.84201	0.70740	0.74383	0.80158	0.32899
0.56877		0.38940	0.21666	0.57814				
GWA36	GWA36	Teaching others		0.87858	0.73519	0.55161	0.67313	0.53275
0.63857		0.40615	0.34509	0.61664				
GWA37	GWA37	Guiding, directing and motivating subordinates		0.81221	0.66532	0.72843	0.82987	0.26977
0.54485		0.42569	0.24472	0.58502				
GWA38	GWA38	Coaching and developing others		1.00000	0.70056	0.64352	0.72475	0.50748
0.58532		0.33877	0.22081	0.56345				
GWA39	GWA39	Providing consultation and advice to others		0.70056	1.00000	0.67980	0.78084	0.39024
0.77358		0.62099	0.44545	0.82041				
GWA42	GWA42	Monitoring and controlling resources		0.64352	0.67980	1.00000	0.74896	0.17747
0.52159		0.41021	0.16310	0.52408				
KN1	KN1	Administration and Management		0.72475	0.78084	0.74896	1.00000	0.32755
0.73220		0.55320	0.26615	0.72244				
KN22	KN22	Therapy and Counseling		0.50748	0.39024	0.17747	0.32755	1.00000
0.50943		0.14418	0.21363	0.39019				
sk2	SK2	Active listening		0.58532	0.77358	0.52159	0.73220	0.50943
1.00000		0.51670	0.31561	0.80449				
sk5	SK5	Mathematics		0.33877	0.62099	0.41021	0.55320	0.14418
0.51670		1.00000	0.64907	0.70376				

sk6	SK6	Science			0.22081	0.44545	0.16310	0.26615	0.21363
0.31561		0.64907	1.00000	0.59055					
sk7	SK7	Critical thinking			0.56345	0.82041	0.52408	0.72244	0.39019
0.80449		0.70376	0.59055	1.00000					
sk8	SK8	Active learning			0.57071	0.81719	0.52462	0.70608	0.37874
0.77840		0.71191	0.61544	0.93913					
sk9	SK9	Learning strategies			0.71101	0.72270	0.50390	0.69678	0.53039
0.73966		0.55474	0.47628	0.81313					
sk10	SK10	Monitoring			0.64091	0.76382	0.56485	0.73584	0.44875
0.76322		0.58434	0.45499	0.84950					
sk11	SK11	Social Perceptiveness			0.64717	0.67862	0.53677	0.69249	0.62789
0.84031		0.31633	0.13670	0.66283					
sk12	SK12	Coordination			0.66189	0.68677	0.60357	0.78416	0.38778
0.75471		0.45693	0.29463	0.72757					
sk13	SK13	Persuasion			0.60317	0.76259	0.57485	0.75101	0.45571
0.81434		0.46506	0.24760	0.75763					
sk14	SK14	Negotiation			0.58911	0.71019	0.64475	0.78265	0.35315
0.74025		0.45622	0.16864	0.70143					
sk15	SK15	Instructing			0.80145	0.69134	0.51421	0.69755	0.51911
0.70524		0.44382	0.37400	0.69723					
sk17	SK17	Problem identification			0.54613	0.77837	0.52398	0.69683	0.40079
0.74378		0.68456	0.55832	0.87077					
sk18	SK18	Information gathering			0.52521	0.82596	0.50462	0.73185	0.35231
0.79813		0.72097	0.53063	0.89261					
sk19	SK19	Information organization			0.51886	0.77892	0.49671	0.69709	0.33251
0.76773		0.68703	0.49098	0.84032					
sk20	SK20	Synthesis/Reorganization			0.53518	0.79920	0.50973	0.70110	0.33533
0.77526		0.68102	0.51050	0.87918					
sk22	SK22	Idea evaluation			0.62030	0.82484	0.57338	0.76526	0.38535
0.76664		0.64901	0.51667	0.89875					
sk24	SK24	Solution appraisal			0.58601	0.80290	0.55999	0.75179	0.39521
0.75750		0.67195	0.52829	0.88646					
sk37	SK37	Visioning			0.58610	0.77020	0.55138	0.76449	0.32700
0.70895		0.63809	0.46952	0.85347					
sk38	SK38	Systems perceptions			0.54515	0.72876	0.53224	0.73663	0.31208
0.68725		0.62427	0.48873	0.83556					
sk39	SK39	Identification of downstream consequences			0.55953	0.78206	0.57630	0.77191	0.31016
0.70233		0.67285	0.51010	0.85532					
sk40	SK40	Identification of key causes			0.59061	0.78809	0.56862	0.77224	0.39624
0.75926		0.63994	0.47468	0.86788					
sk41	SK41	Judgment and decision making			0.55830	0.79772	0.54647	0.77449	0.39039
0.78091		0.65169	0.48092	0.89609					
sk42	SK42	Systems evaluation			0.57264	0.76520	0.57877	0.78552	0.29474
0.69893		0.67101	0.47677	0.82854					
sk43	SK43	Time management			0.69801	0.70375	0.65468	0.84965	0.37248
0.72878		0.49497	0.29679	0.74408					
sk46	SK46	Management of personnel resources			0.74325	0.64537	0.69746	0.83660	0.29025
0.59727		0.42792	0.25806	0.62557					

Correlations

sk13	sk14	sk15	sk17	sk8	sk9	sk10	sk11	sk12
GWA1	GWA1	Getting information needed to do job		0.87401	0.73625	0.77948	0.61946	0.67108
0.70107		0.65094	0.65289	0.80447				
GWA2	GWA2	Identifying objects, actions, and events		0.82431	0.65943	0.71407	0.53575	0.60964
0.63674		0.59420	0.58392	0.76574				
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.57437	0.48572	0.54515	0.31553	0.47384
0.39621		0.34922	0.47817	0.64573				
GWA9	GWA9	Analyzing data or information		0.86061	0.69160	0.74165	0.54470	0.59369
0.64539		0.58915	0.59215	0.79439				
GWA10	GWA10	Making decisions and solving problems		0.85323	0.70887	0.77635	0.60972	0.68982
0.70063		0.67524	0.63338	0.81653				

PRINCIPAL AXES ANALYSIS OF ABSTRACT-LEVEL
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure

Correlations

sk13	sk14	sk15	sk17	sk8	sk9	sk10	sk11	sk12
GWA11	GWA11	Thinking creatively		0.69405	0.60600	0.62445	0.47898	0.50591
0.51861		0.47965	0.51026	0.51466				
GWA12	GWA12	Updating and using job-relevant knowledge		0.81042	0.66413	0.69407	0.48356	0.54416
0.59371		0.51775	0.58224	0.77478				
GWA13	GWA13	Developing objectives and strategies		0.78542	0.72169	0.76035	0.65629	0.69695
0.73113		0.70900	0.65538	0.73320				
GWA15	GWA15	Organizing, planning, and prioritizing work		0.80617	0.73489	0.78106	0.67884	0.74329
0.74970		0.74349	0.66928	0.73899				
GWA26	GWA26	Interpreting the meaning of information for others		0.80699	0.68881	0.70995	0.64276	0.60832
0.67901		0.58491	0.64714	0.74072				
GWA29	GWA29	Establishing and maintaining interpersonal relationships		0.61380	0.64535	0.67425	0.84466	0.71648
0.76954		0.71771	0.67972	0.59939				
GWA30	GWA30	Assisting and caring for others		0.31141	0.41408	0.36019	0.65543	0.41798
0.47024		0.35021	0.48089	0.35951				
GWA31	GWA31	Selling or influencing others		0.51447	0.47143	0.52091	0.67658	0.55637
0.76816		0.74139	0.51791	0.52499				
GWA32	GWA32	Resolving conflicts and negotiating with others		0.50190	0.50554	0.56295	0.72615	0.65218
0.72996		0.81119	0.53908	0.55931				
GWA34	GWA34	Coordinating the work and activities of others		0.59187	0.59903	0.63265	0.58981	0.79081
0.62461		0.67043	0.67915	0.58830				
GWA35	GWA35	Developing and building teams		0.57864	0.62474	0.63530	0.59320	0.73166
0.60158		0.64576	0.66437	0.57043				
GWA36	GWA36	Teaching others		0.62900	0.76124	0.65791	0.65783	0.61764
0.62328		0.54386	0.85528	0.59109				
GWA37	GWA37	Guiding, directing and motivating subordinates		0.58418	0.63853	0.63681	0.55688	0.73220
0.57536		0.64405	0.69743	0.54757				
GWA38	GWA38	Coaching and developing others		0.57071	0.71101	0.64091	0.64717	0.66189
0.60317		0.58911	0.80145	0.54613				
GWA39	GWA39	Providing consultation and advice to others		0.81719	0.72270	0.76382	0.67862	0.68677
0.76259		0.71019	0.69134	0.77837				
GWA42	GWA42	Monitoring and controlling resources		0.52462	0.50390	0.56485	0.53677	0.60357
0.57485		0.64475	0.51421	0.52398				
KN1	KN1	Administration and Management		0.70608	0.69678	0.73584	0.69249	0.78416

0.75101	0.78265	0.69755	0.69683					
KN22	KN22 Therapy and Counseling			0.37874	0.53039	0.44875	0.62789	0.38778
0.45571	0.35315	0.51911	0.40079					
sk2	SK2 Active listening			0.77840	0.73966	0.76322	0.84031	0.75471
0.81434	0.74025	0.70524	0.74378					
sk5	SK5 Mathematics			0.71191	0.55474	0.58434	0.31633	0.45693
0.46506	0.45622	0.44382	0.68456					
sk6	SK6 Science			0.61544	0.47628	0.45499	0.13670	0.29463
0.24760	0.16864	0.37400	0.55832					
sk7	SK7 Critical thinking			0.93913	0.81313	0.84950	0.66283	0.72757
0.75763	0.70143	0.69723	0.87077					
sk8	SK8 Active learning			1.00000	0.84664	0.86144	0.63772	0.69527
0.72701	0.65619	0.69702	0.82148					
sk9	SK9 Learning strategies			0.84664	1.00000	0.84513	0.71921	0.70587
0.72478	0.63796	0.84283	0.72563					
sk10	SK10 Monitoring			0.86144	0.84513	1.00000	0.70615	0.73942
0.73545	0.69045	0.72695	0.78176					
sk11	SK11 Social Perceptiveness			0.63772	0.71921	0.70615	1.00000	0.73105
0.82708	0.75249	0.72269	0.61652					
sk12	SK12 Coordination			0.69527	0.70587	0.73942	0.73105	1.00000
0.74537	0.75180	0.72221	0.66235					
sk13	SK13 Persuasion			0.72701	0.72478	0.73545	0.82708	0.74537
1.00000	0.89346	0.71901	0.71543					
sk14	SK14 Negotiation			0.65619	0.63796	0.69045	0.75249	0.75180
0.89346	1.00000	0.62991	0.66132					
sk15	SK15 Instructing			0.69702	0.84283	0.72695	0.72269	0.72221
0.71901	0.62991	1.00000	0.63600					
sk17	SK17 Problem identification			0.82148	0.72563	0.78176	0.61652	0.66235
0.71543	0.66132	0.63600	1.00000					
sk18	SK18 Information gathering			0.89158	0.73619	0.78067	0.62726	0.64798
0.72907	0.66541	0.61370	0.83883					
sk19	SK19 Information organization			0.86797	0.74527	0.77379	0.59813	0.61640
0.67294	0.60717	0.60641	0.76424					
sk20	SK20 Synthesis/Reorganization			0.90652	0.78651	0.82089	0.61639	0.66294
0.69887	0.63692	0.63075	0.78206					
sk22	SK22 Idea evaluation			0.91960	0.83422	0.85901	0.67546	0.74615
0.76357	0.70459	0.70313	0.82953					
sk24	SK24 Solution appraisal			0.89485	0.82914	0.87098	0.65886	0.72511
0.74312	0.68418	0.69749	0.86864					
sk37	SK37 Visioning			0.86258	0.79499	0.82945	0.62263	0.76136
0.73940	0.70782	0.68848	0.80326					
sk38	SK38 Systems perceptions			0.80482	0.72153	0.78662	0.58436	0.74267
0.69829	0.68049	0.64317	0.82201					
sk39	SK39 Identification of downstream consequences			0.84198	0.75465	0.80929	0.59750	0.73940
0.74371	0.73223	0.65777	0.82759					
sk40	SK40 Identification of key causes			0.85190	0.78906	0.83849	0.68366	0.74375
0.77677	0.73927	0.68186	0.87178					
sk41	SK41 Judgment and decision making			0.86668	0.74555	0.82688	0.66462	0.75224
0.76099	0.72660	0.64610	0.86347					
sk42	SK42 Systems evaluation			0.81281	0.73380	0.80944	0.60034	0.73281
0.72404	0.71215	0.64991	0.82815					
sk43	SK43 Time management			0.74217	0.77563	0.78450	0.73984	0.82418
0.75078	0.74756	0.75610	0.70539					
sk46	SK46 Management of personnel resources			0.62309	0.68887	0.68566	0.63391	0.80040
0.64085	0.69308	0.73979	0.59367					

Correlations

sk37	sk38	sk39	sk40	sk18	sk19	sk20	sk22	sk24
GWA1	GWA1 Getting information needed to do job			0.89800	0.85385	0.85969	0.85152	0.82441
0.79515	0.77322	0.79179	0.80916					
GWA2	GWA2 Identifying objects, actions, and events			0.83513	0.78923	0.78927	0.77829	0.75558
0.72309	0.72695	0.75031	0.73595					
GWA3	GWA3 Monitoring processes, materials, or surroundings			0.54866	0.48014	0.50137	0.55060	0.55433
0.54409	0.63642	0.59202	0.55457					
GWA9	GWA9 Analyzing data or information			0.89111	0.83881	0.84229	0.82418	0.81497
0.75965	0.75506	0.78552	0.78457					
GWA10	GWA10 Making decisions and solving problems			0.85596	0.79985	0.82849	0.85740	0.82894
0.79969	0.78571	0.81587	0.82021					
GWA11	GWA11 Thinking creatively			0.60964	0.63489	0.70057	0.72154	0.64202
0.63659	0.50715	0.57047	0.59967					
GWA12	GWA12 Updating and using job-relevant knowledge			0.80790	0.76121	0.77589	0.75202	0.75882
0.70901	0.69293	0.71705	0.71925					
GWA13	GWA13 Developing objectives and strategies			0.79400	0.75329	0.77871	0.83820	0.80641
0.78434	0.73567	0.80119	0.80531					
GWA15	GWA15 Organizing, planning, and prioritizing work			0.78721	0.75512	0.80598	0.84603	0.79866
0.78457	0.72402	0.77588	0.80221					
GWA26	GWA26 Interpreting the meaning of information for others			0.84593	0.80891	0.80345	0.76760	0.74940
0.68992	0.66667	0.69489	0.71822					
GWA29	GWA29 Establishing and maintaining interpersonal relationships			0.61616	0.60130	0.61740	0.64232	0.62405
0.57630	0.54104	0.56922	0.62883					
GWA30	GWA30 Assisting and caring for others			0.31528	0.29983	0.28942	0.31115	0.30966
0.22554	0.21995	0.22351	0.31419					
GWA31	GWA31 Selling or influencing others			0.53810	0.48704	0.50165	0.56439	0.53577
0.51208	0.46455	0.53017	0.57083					
GWA32	GWA32 Resolving conflicts and negotiating with others			0.54197	0.49917	0.50918	0.56097	0.53906
0.52338	0.52182	0.55443	0.59498					
GWA34	GWA34 Coordinating the work and activities of others			0.57569	0.54434	0.57385	0.64214	0.61633
0.63863	0.63448	0.65043	0.63782					
GWA35	GWA35 Developing and building teams			0.54843	0.53160	0.56358	0.64329	0.61822
0.63506	0.60929	0.62822	0.62750					
GWA36	GWA36 Teaching others			0.59103	0.59098	0.59631	0.65340	0.62633
0.59712	0.56128	0.58378	0.61775					
GWA37	GWA37 Guiding, directing and motivating subordinates			0.54062	0.51909	0.55836	0.64227	0.60658
0.63958	0.61654	0.63886	0.62038					
GWA38	GWA38 Coaching and developing others			0.52521	0.51886	0.53518	0.62030	0.58601
0.58610	0.54515	0.55953	0.59061					
GWA39	GWA39 Providing consultation and advice to others			0.82596	0.77892	0.79920	0.82484	0.80290
0.77020	0.72876	0.78206	0.78809					
GWA42	GWA42 Monitoring and controlling resources			0.50462	0.49671	0.50973	0.57338	0.55999
0.55138	0.53224	0.57630	0.56862					
KN1	KN1 Administration and Management			0.73185	0.69709	0.70110	0.76526	0.75179
0.76449	0.73663	0.77191	0.77224					
KN22	KN22 Therapy and Counseling			0.35231	0.33251	0.33533	0.38535	0.39521
0.32700	0.31208	0.31016	0.39624					
sk2	SK2 Active listening			0.79813	0.76773	0.77526	0.76664	0.75750

0.70895	0.68725	0.70233	0.75926					
sk5	SK5 Mathematics			0.72097	0.68703	0.68102	0.64901	0.67195
0.63809	0.62427	0.67285	0.63994					
sk6	SK6 Science			0.53063	0.49098	0.51050	0.51667	0.52829
0.46952	0.48873	0.51010	0.47468					
sk7	SK7 Critical thinking			0.89261	0.84032	0.87918	0.89875	0.88646
0.85347	0.83556	0.85532	0.86788					
sk8	SK8 Active Learning			0.89158	0.86797	0.90652	0.91960	0.89485
0.86258	0.80482	0.84198	0.85190					
sk9	SK9 Learning strategies			0.73619	0.74527	0.78651	0.83422	0.82914
0.79499	0.72153	0.75465	0.78906					
sk10	SK10 Monitoring			0.78067	0.77379	0.82089	0.85901	0.87098
0.82945	0.78662	0.80929	0.83849					
sk11	SK11 Social Perceptiveness			0.62726	0.59813	0.61639	0.67546	0.65886
0.62263	0.58436	0.59750	0.68366					
sk12	SK12 Coordination			0.64798	0.61640	0.66294	0.74615	0.72511
0.76136	0.74267	0.73940	0.74375					
sk13	SK13 Persuasion			0.72907	0.67294	0.69887	0.76357	0.74312
0.73940	0.69829	0.74371	0.77677					
sk14	SK14 Negotiation			0.66541	0.60717	0.63692	0.70459	0.68418
0.70782	0.68049	0.73223	0.73927					
sk15	SK15 Instructing			0.61370	0.60641	0.63075	0.70313	0.69749
0.68848	0.64317	0.65777	0.68186					
sk17	SK17 Problem identification			0.83883	0.76424	0.78206	0.82953	0.86864
0.80326	0.82201	0.82759	0.87178					
sk18	SK18 Information gathering			1.00000	0.91977	0.89426	0.86682	0.85543
0.80711	0.79383	0.82794	0.83021					
sk19	SK19 Information organization			0.91977	1.00000	0.92155	0.84027	0.82606
0.77673	0.73165	0.76496	0.77882					
sk20	SK20 Synthesis/Reorganization			0.89426	0.92155	1.00000	0.89238	0.86547
0.82864	0.76409	0.80198	0.82273					
sk22	SK22 Idea evaluation			0.86682	0.84027	0.89238	1.00000	0.92674
0.90005	0.83640	0.87518	0.90132					
sk24	SK24 Solution appraisal			0.85543	0.82606	0.86547	0.92674	1.00000
0.89730	0.84563	0.87379	0.91885					
sk37	SK37 Visioning			0.80711	0.77673	0.82864	0.90005	0.89730
1.00000	0.88800	0.89723	0.89771					
sk38	SK38 Systems perceptions			0.79383	0.73165	0.76409	0.83640	0.84563
0.88800	1.00000	0.92306	0.87623					
sk39	SK39 Identification of downstream consequences			0.82794	0.76496	0.80198	0.87518	0.87379
0.89723	0.92306	1.00000	0.90504					
sk40	SK40 Identification of key causes			0.83021	0.77882	0.82273	0.90132	0.91885
0.89771	0.87623	0.90504	1.00000					
sk41	SK41 Judgment and decision making			0.86498	0.80329	0.83273	0.89463	0.89530
0.87684	0.87325	0.89200	0.91399					
sk42	SK42 Systems evaluation			0.80909	0.74690	0.77290	0.85235	0.86235
0.88097	0.90231	0.92115	0.88904					
sk43	SK43 Time management			0.70611	0.69236	0.72228	0.80073	0.79836
0.79918	0.75412	0.76987	0.80743					
sk46	SK46 Management of personnel resources			0.57838	0.55933	0.58776	0.69143	0.67345
0.70109	0.68140	0.70180	0.69041					

Correlations

sk46			sk41	sk42	sk43
	GWA1	GWA1 Getting information needed to do job	0.83499	0.78260	0.69426
0.60620	GWA2	GWA2 Identifying objects, actions, and events	0.78200	0.73841	0.61297
0.56001	GWA3	GWA3 Monitoring processes, materials, or surroundings	0.57958	0.59438	0.41344
0.42054	GWA9	GWA9 Analyzing data or information	0.81768	0.77887	0.62670
0.54971	GWA10	GWA10 Making decisions and solving problems	0.85817	0.81001	0.69380
0.63808	GWA11	GWA11 Thinking creatively	0.57962	0.55893	0.55721
0.50773	GWA12	GWA12 Updating and using job-relevant knowledge	0.74511	0.70999	0.56466
0.48655	GWA13	GWA13 Developing objectives and strategies	0.80008	0.78016	0.74072
0.68940					

PRINCIPAL AXES ANALYSIS OF ABSTRACT-LEVEL
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure

Correlations

sk46			sk41	sk42	sk43
	GWA15	GWA15 Organizing, planning, and prioritizing work	0.78933	0.75732	0.76689
0.71146	GWA26	GWA26 Interpreting the meaning of information for others	0.75145	0.68394	0.62011
0.52455	GWA29	GWA29 Establishing and maintaining interpersonal relationships	0.62695	0.56471	0.70012
0.64084	GWA30	GWA30 Assisting and caring for others	0.34488	0.20592	0.36192
0.28234	GWA31	GWA31 Selling or influencing others	0.55512	0.50877	0.55458
0.49825	GWA32	GWA32 Resolving conflicts and negotiating with others	0.59164	0.55353	0.65505
0.64407	GWA34	GWA34 Coordinating the work and activities of others	0.63503	0.66610	0.77556
0.85299	GWA35	GWA35 Developing and building teams	0.61721	0.64735	0.74178
0.82078	GWA36	GWA36 Teaching others	0.58981	0.57671	0.65190
0.64876	GWA37	GWA37 Guiding, directing and motivating subordinates	0.60485	0.66234	0.79240
0.89055	GWA38	GWA38 Coaching and developing others	0.55830	0.57264	0.69801
0.74325	GWA39	GWA39 Providing consultation and advice to others	0.79772	0.76520	0.70375
0.64537					

0.69746	GWA42	GWA42 Monitoring and controlling resources	0.54647	0.57877	0.65468
0.83660	KN1	KN1 Administration and Management	0.77449	0.78552	0.84965
0.29025	KN22	KN22 Therapy and Counseling	0.39039	0.29474	0.37248
0.59727	sk2	SK2 Active listening	0.78091	0.69893	0.72878
0.42792	sk5	SK5 Mathematics	0.65169	0.67101	0.49497
0.25806	sk6	SK6 Science	0.48092	0.47677	0.29679
0.62557	sk7	SK7 Critical thinking	0.89609	0.82854	0.74408
0.62309	sk8	SK8 Active learning	0.86668	0.81281	0.74217
0.68887	sk9	SK9 Learning strategies	0.74555	0.73380	0.77563
0.68566	sk10	SK10 Monitoring	0.82688	0.80944	0.78450
0.63391	sk11	SK11 Social Perceptiveness	0.66462	0.60034	0.73984
0.80040	sk12	SK12 Coordination	0.75224	0.73281	0.82418
0.64085	sk13	SK13 Persuasion	0.76099	0.72404	0.75078
0.69308	sk14	SK14 Negotiation	0.72660	0.71215	0.74756
0.73979	sk15	SK15 Instructing	0.64610	0.64991	0.75610
0.59367	sk17	SK17 Problem identification	0.86347	0.82815	0.70539
0.57838	sk18	SK18 Information gathering	0.86498	0.80909	0.70611
0.55933	sk19	SK19 Information organization	0.80329	0.74690	0.69236
0.58776	sk20	SK20 Synthesis/Reorganization	0.83273	0.77290	0.72228
0.69143	sk22	SK22 Idea evaluation	0.89463	0.85235	0.80073
0.67345	sk24	SK24 Solution appraisal	0.89530	0.86235	0.79836
0.70109	sk37	SK37 Visioning	0.87684	0.88097	0.79918
0.68140	sk38	SK38 Systems perceptions	0.87325	0.90231	0.75412
0.70180	sk39	SK39 Identification of downstream consequences	0.89200	0.92115	0.76987
0.69041	sk40	SK40 Identification of key causes	0.91399	0.88904	0.80743
0.66456	sk41	SK41 Judgment and decision making	1.00000	0.87633	0.78393
0.73077	sk42	SK42 Systems evaluation	0.87633	1.00000	0.77374
0.86621	sk43	SK43 Time management	0.78393	0.77374	1.00000
1.00000	sk46	SK46 Management of personnel resources	0.66456	0.73077	0.86621

PRINCIPAL AXES ANALYSIS OF ABSTRACT-LEVEL
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Communality Estimates: SMC

	GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29	GWA30	GWA31								
0.92796912	0.88773284	0.74953504	0.93798676	0.93692610	0.75313073	0.86932872	0.90146102	0.88860034	0.89206579	
0.89438844	0.74795422	0.80954218								
	GWA32	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA42	KN1	KN22
sk2	sk5	sk6								
0.85462945	0.90293872	0.89512368	0.88402448	0.91766544	0.90389809	0.90573567	0.75920714	0.88637750	0.69919314	
0.88589624	0.71137414	0.74295986								
	sk7	sk8	sk9	sk10	sk11	sk12	sk13	sk14	sk15	sk17
sk18	sk19	sk20								
0.93744558	0.94590241	0.89414524	0.85271007	0.89304528	0.84395244	0.90788058	0.90059472	0.88340540	0.87628303	
0.93588262	0.90826978	0.91770566								
		sk22	sk24	sk37	sk38	sk39	sk40	sk41	sk42	
sk43		sk46								
0.88649402	0.93896041	0.92739788	0.90787392	0.90684745	0.92739421	0.92291418	0.91743792	0.90442773		
	0.90044653									

Eigenvalues of the Reduced Correlation Matrix: Total = 42.9830619 Average = 0.87720535

	Eigenvalue	Difference	Proportion	Cumulative
1	32.8280768	29.3085983	0.7637	0.7637
2	3.5194785	1.6977219	0.0819	0.8456
3	1.8217566	0.3842939	0.0424	0.8880
4	1.4374626	0.1185853	0.0334	0.9215
5	1.3188774	0.5896552	0.0307	0.9521
6	0.7292221	0.2921864	0.0170	0.9691
7	0.4370357	0.0739032	0.0102	0.9793
8	0.3631325	0.0503691	0.0084	0.9877
9	0.3127634	0.0876680	0.0073	0.9950
10	0.2250954	0.0529870	0.0052	1.0002
11	0.1721083	0.0273200	0.0040	1.0042
12	0.1447883	0.0309059	0.0034	1.0076

13	0.1138825	0.0169766	0.0026	1.0103
14	0.0969058	0.0129521	0.0023	1.0125
15	0.0839537	0.0214566	0.0020	1.0145
16	0.0624971	0.0134063	0.0015	1.0159
17	0.0490909	0.0042208	0.0011	1.0171
18	0.0448700	0.0198670	0.0010	1.0181
19	0.0250030	0.0034130	0.0006	1.0187
20	0.0215900	0.0012769	0.0005	1.0192
21	0.0203131	0.0044793	0.0005	1.0197
22	0.0158338	0.0076348	0.0004	1.0200
23	0.0081991	0.0046101	0.0002	1.0202
24	0.0035890	0.0019863	0.0001	1.0203
25	0.0016027	0.0021857	0.0000	1.0203
26	-0.0005830	0.0028803	-0.0000	1.0203
27	-0.0034633	0.0065893	-0.0001	1.0202
28	-0.0100526	0.0030712	-0.0002	1.0200
29	-0.0131238	0.0017638	-0.0003	1.0197
30	-0.0148876	0.0038036	-0.0003	1.0194
31	-0.0186911	0.0021470	-0.0004	1.0189
32	-0.0208382	0.0028019	-0.0005	1.0184
33	-0.0236400	0.0035525	-0.0005	1.0179
34	-0.0271925	0.0016609	-0.0006	1.0173
35	-0.0288534	0.0021190	-0.0007	1.0166
36	-0.0309724	0.0024799	-0.0007	1.0159
37	-0.0334523	0.0014014	-0.0008	1.0151
38	-0.0348537	0.0004754	-0.0008	1.0143
39	-0.0353291	0.0032830	-0.0008	1.0135
40	-0.0386122	0.0035563	-0.0009	1.0126
41	-0.0421685	0.0024234	-0.0010	1.0116
42	-0.0445919	0.0053716	-0.0010	1.0105
43	-0.0499635	0.0025175	-0.0012	1.0094
44	-0.0524810	0.0024107	-0.0012	1.0082
45	-0.0548917	0.0020806	-0.0013	1.0069
46	-0.0569723	0.0071813	-0.0013	1.0055
47	-0.0641536	0.0148275	-0.0015	1.0041
48	-0.0789811	0.0163367	-0.0018	1.0022
49	-0.0953178		-0.0022	1.0000

5 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF ABSTRACT-LEVEL
VARIMAX ROTATION OF 5 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5
1	0.62116	0.46208	0.46835	0.31519	0.28624
2	-0.67157	0.54398	-0.09493	0.35556	0.34299
3	0.07000	-0.55865	-0.14897	0.18314	0.79201
4	0.38457	0.36263	-0.83031	-0.14598	0.09937
5	-0.10177	0.21672	0.24499	-0.84816	0.40407

Rotated Factor Pattern

Factor4	Factor5		Factor1	Factor2	Factor3
0.30118	GWA1	GWA1 Getting information needed to do job	0.77670	0.28580	0.30110
	0.20166				
0.25870	GWA2	GWA2 Identifying objects, actions, and events	0.80454	0.28052	0.20483
	0.15243				
-0.10474	GWA3	GWA3 Monitoring processes, materials, or surroundings	0.67656	0.29251	0.10359
	0.18287				
0.26996	GWA9	GWA9 Analyzing data or information	0.84267	0.25362	0.24173
	0.13710				
0.30603	GWA10	GWA10 Making decisions and solving problems	0.76531	0.35541	0.28524
	0.15949				
0.28691	GWA11	GWA11 Thinking creatively	0.57857	0.37766	0.11669
	0.10840				
0.16693	GWA12	GWA12 Updating and using job-relevant knowledge	0.84366	0.23345	0.16169
	0.20548				
0.39086	GWA13	GWA13 Developing objectives and strategies	0.59237	0.49326	0.28815
	0.16693				
0.40720	GWA15	GWA15 Organizing, planning, and prioritizing work	0.57950	0.48396	0.31489
	0.16196				
0.36827	GWA26	GWA26 Interpreting the meaning of information for others	0.73492	0.24979	0.16658
	0.30870				
0.57164	GWA29	GWA29 Establishing and maintaining interpersonal relationships	0.26519	0.43400	0.21418
	0.49375				
0.27431	GWA30	GWA30 Assisting and caring for others	0.10148	0.14232	0.00192
	0.77761				
0.69544	GWA31	GWA31 Selling or influencing others	0.23210	0.35278	0.17273
	0.24813				
0.65240	GWA32	GWA32 Resolving conflicts and negotiating with others	0.14828	0.51186	0.24261
	0.23013				
0.25169	GWA34	GWA34 Coordinating the work and activities of others	0.31213	0.80298	0.22519
	0.13823				
0.25653	GWA35	GWA35 Developing and building teams	0.27953	0.81410	0.20001
	0.17481				
0.09369	GWA36	GWA36 Teaching others	0.39187	0.56909	0.14989
	0.55045				
0.14276	GWA37	GWA37 Guiding, directing and motivating subordinates	0.26257	0.85808	0.26697
	0.11617				
0.14034	GWA38	GWA38 Coaching and developing others	0.26216	0.73950	0.14793
	0.45913				
0.42743	GWA39	GWA39 Providing consultation and advice to others	0.64330	0.40682	0.25175
	0.24954				
0.44538	GWA42	GWA42 Monitoring and controlling resources	0.27318	0.64745	0.16612
	0.03347				
0.35378	KN1	KN1 Administration and Management	0.36009	0.61974	0.44376
	0.14453				
	KN22	KN22 Therapy and Counseling	0.15545	0.09702	0.16337

0.05095	0.77228				
	sk2	SK2 Active listening	0.43771	0.20442	0.45493
0.44448	0.46254				
	sk5	SK5 Mathematics	0.72037	0.16247	0.30540
0.06812	-0.04003				
	sk6	SK6 Science	0.76059	0.05021	0.13003
-0.27808	0.09685				
	sk7	SK7 Critical thinking	0.69699	0.22320	0.52412
0.21541	0.23951				
	sk8	SK8 Active learning	0.72456	0.23215	0.49963
0.17555	0.22599				
	sk9	SK9 Learning strategies	0.48007	0.36894	0.51534
0.04443	0.45553				
	sk10	SK10 Monitoring	0.52554	0.34230	0.55251
0.17121	0.30171				
	sk11	SK11 Social Perceptiveness	0.17531	0.29342	0.44702
0.46196	0.60210				
	sk12	SK12 Coordination	0.28236	0.53025	0.53411
0.24137	0.27248				
	sk13	SK13 Persuasion	0.30919	0.28134	0.53997
0.51244	0.36001				
	sk14	SK14 Negotiation	0.22367	0.39095	0.54404
0.55084	0.18325				
	sk15	SK15 Instructing	0.33400	0.52228	0.38769
0.03944	0.53631				
	sk17	SK17 Problem identification	0.64457	0.22983	0.50395
0.19003	0.22622				
	sk18	SK18 Information gathering	0.73129	0.16821	0.45594
0.30706	0.17593				
	sk19	SK19 Information organization	0.69736	0.17037	0.42953
0.27640	0.18585				
	sk20	SK20 Synthesis/Reorganization	0.69768	0.20320	0.47318
0.26034	0.17736				
	sk22	SK22 Idea evaluation	0.63035	0.32001	0.56317
0.21981	0.19636				
	sk24	SK24 Solution appraisal	0.62020	0.28501	0.60204
0.17860	0.20288				
	sk37	SK37 Visioning	0.55531	0.35017	0.64938
0.15135	0.11085				
	sk38	SK38 Systems perceptions	0.55495	0.33906	0.64184
0.10481	0.08637				
	sk39	SK39 Identification of downstream consequences	0.57953	0.34779	0.63591
0.17221	0.06730				
	sk40	SK40 Identification of key causes	0.55327	0.30712	0.64256
0.22462	0.18257				
	sk41	SK41 Judgment and decision making	0.59997	0.26874	0.60184
0.25295	0.17684				
	sk42	SK42 Systems evaluation	0.55919	0.38466	0.62211
0.15807	0.05292				
	sk43	SK43 Time management	0.29736	0.56292	0.59593
0.21835	0.22902				
	sk46	SK46 Management of personnel resources	0.21708	0.76442	0.46325
0.12841	0.13807				

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
14.488888	8.870530	8.343312	4.746803	4.476119

Final Communality Estimates: Total = 40.925652

	GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29	0.90697039	0.85808379	0.59844208	0.92453144	0.91248036	0.58504967	0.86249018	0.85788452	0.86124024	0.86116307
	0.87511207	0.71048132	0.75336235							
	GWA32	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA42	KN1	KN22
sk2	0.82142962	0.87537054	0.87726218	0.81166724	0.91038982	0.86796694	0.88768274	0.72089757	0.85671714	0.65928407
	0.85184229	0.64483666	0.68463607							
	sk7	sk8	sk9	sk10	sk11	sk12	sk13	sk14	sk15	sk17
sk18	0.91407794	0.91040254	0.84163772	0.81897636	0.89258591	0.77865964	0.85852124	0.83586466	0.82383139	0.80953796
	0.89619496	0.81077859	0.85118246							
	sk43	sk22	sk24	sk37	sk38	sk39	sk40	sk41	sk42	
		sk46								
	0.86057145	0.90377781	0.90138304	0.88787306	0.85332923	0.89537218	0.89709494	0.88964695	0.87545922	
		0.88161827								

PRINCIPAL AXES ANALYSIS OF ABSTRACT-IMPORTANCE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Correlations

	GWA1	GWA2	GWA3	GWA9	GWA10
GWA1	1.00000	0.73559	0.23982	0.77649	0.68831
GWA2	0.66873	1.00000	0.44288	0.76066	0.72550
GWA3	0.53434	0.53456	1.00000	0.27587	0.34030
GWA9	0.29879	0.21220	0.21094	1.00000	0.82102
GWA10	0.29879	0.21220	0.21094	0.77649	1.00000
GWA11	0.76295	0.70813	0.67026	0.76066	0.72550
GWA12	0.72510	0.77023	0.75372	0.27587	0.82102
GWA13	0.40051	0.35748	0.08443	0.49520	0.54574

1.00000	0.51736	0.62032	0.64317					
GWA12	GWA12 Updating and using job-relevant knowledge			0.66873	0.68708	0.29879	0.76295	0.72510
0.51736	1.00000	0.65094	0.65917					
GWA13	GWA13 Developing objectives and strategies			0.55343	0.53456	0.21220	0.70813	0.77023
0.62032	0.65094	1.00000	0.83079					
GWA15	GWA15 Organizing, planning, and prioritizing work			0.56225	0.53762	0.21094	0.67026	0.75372
0.64317	0.65917	0.83079	1.00000					
GWA26	GWA26 Interpreting the meaning of information for others			0.61886	0.58841	0.15170	0.73665	0.68921
0.47205	0.73370	0.70436	0.66507					
GWA29	GWA29 Establishing and maintaining interpersonal relationships			0.39691	0.33779	0.05991	0.48486	0.56319
0.46105	0.54845	0.66073	0.67125					
GWA30	GWA30 Assisting and caring for others			0.13580	0.11538	0.06106	0.18623	0.26627
0.16066	0.29582	0.31182	0.30163					
GWA31	GWA31 Selling or influencing others			0.31513	0.29639	-0.02173	0.41962	0.48298
0.45503	0.46501	0.60656	0.58072					
GWA32	GWA32 Resolving conflicts and negotiating with others			0.37146	0.34193	0.08075	0.45746	0.54656
0.38428	0.45108	0.63039	0.63881					
GWA34	GWA34 Coordinating the work and activities of others			0.39640	0.41574	0.30778	0.47970	0.61990
0.43948	0.46630	0.70360	0.70457					
GWA35	GWA35 Developing and building teams			0.36212	0.37022	0.23695	0.48523	0.59674
0.48833	0.47131	0.75635	0.70515					
GWA36	GWA36 Teaching others			0.36325	0.34662	0.19195	0.46600	0.53447
0.43840	0.52460	0.68393	0.61828					
GWA37	GWA37 Guiding, directing and motivating subordinates			0.34682	0.36206	0.25448	0.44190	0.57514
0.44089	0.41683	0.69733	0.66932					
GWA38	GWA38 Coaching and developing others			0.34832	0.32754	0.21427	0.43173	0.54473
0.44720	0.47299	0.70876	0.63465					
GWA39	GWA39 Providing consultation and advice to others			0.61094	0.59377	0.17091	0.75814	0.77416
0.57583	0.73967	0.81534	0.74576					
GWA42	GWA42 Monitoring and controlling resources			0.32476	0.37505	0.15682	0.44931	0.51863
0.39401	0.41452	0.61792	0.63887					
KN1	KN1 Administration and Management			0.46884	0.42891	0.13812	0.59413	0.68110
0.44396	0.53448	0.79704	0.74430					
KN22	KN22 Therapy and Counseling			0.18886	0.16470	0.10342	0.22857	0.29346
0.16002	0.30700	0.36423	0.28562					
SK2	SK2 Active listening			0.50787	0.39668	0.00197	0.51108	0.53324
0.35180	0.55009	0.54172	0.55957					
SK5	SK5 Mathematics			0.44816	0.38837	0.09752	0.49939	0.40398
0.14783	0.43875	0.34579	0.31369					
SK6	SK6 Science			0.39243	0.52182	0.40951	0.49050	0.42033
0.18039	0.49931	0.28599	0.26235					
SK7	SK7 Critical thinking			0.65542	0.62556	0.22216	0.74160	0.76079
0.43641	0.70534	0.68147	0.66530					
SK8	SK8 Active learning			0.63258	0.58876	0.14883	0.71131	0.70484
0.52615	0.69271	0.67336	0.65110					
SK9	SK9 Learning strategies			0.47344	0.41201	0.13950	0.52896	0.57619
0.47916	0.57052	0.64286	0.60116					
SK10	SK10 Monitoring			0.51017	0.42866	0.18946	0.48639	0.52574
0.41952	0.45509	0.50249	0.52275					
SK11	SK11 Social Perceptiveness			0.35309	0.28352	0.00261	0.39896	0.49551
0.38773	0.44953	0.56422	0.58533					
SK12	SK12 Coordination			0.39516	0.35096	0.17199	0.41507	0.57392
0.36710	0.43571	0.60392	0.63581					
SK13	SK13 Persuasion			0.42287	0.35973	0.01360	0.47495	0.55267
0.38626	0.49679	0.63108	0.61194					
SK14	SK14 Negotiation			0.42069	0.36854	0.02291	0.46118	0.57593
0.36611	0.43443	0.63705	0.63861					
SK15	SK15 Instructing			0.36845	0.32998	0.16593	0.41652	0.50719
0.38150	0.48152	0.61121	0.55757					
SK17	SK17 Problem identification			0.53833	0.54372	0.27189	0.56561	0.59294
0.14549	0.55926	0.45966	0.45702					
SK18	SK18 Information gathering			0.69483	0.60039	0.08097	0.71929	0.63767
0.32269	0.64668	0.57044	0.54612					
SK19	SK19 Information organization			0.56750	0.48541	0.02431	0.57904	0.47901
0.34011	0.53221	0.44681	0.46628					
SK20	SK20 Synthesis/Reorganization			0.59105	0.52743	0.02989	0.67879	0.62485
0.53896	0.62324	0.62546	0.62232					
SK22	SK22 Idea evaluation			0.58192	0.52623	0.14071	0.65520	0.70595
0.53955	0.60945	0.70351	0.66608					
SK24	SK24 Solution appraisal			0.59342	0.53009	0.14518	0.63127	0.63540
0.41241	0.59171	0.59302	0.57055					
SK37	SK37 Visioning			0.54461	0.47216	0.16578	0.57707	0.64108
0.46148	0.56767	0.65584	0.61431					
SK38	SK38 Systems perceptions			0.54554	0.52664	0.32417	0.59757	0.65094
0.30703	0.58229	0.60488	0.56870					
SK39	SK39 Identification of downstream consequences			0.55561	0.53307	0.25576	0.64080	0.68921
0.38443	0.61379	0.69230	0.63699					
SK40	SK40 Identification of key causes			0.56732	0.52195	0.21806	0.60477	0.68427
0.37718	0.57932	0.62713	0.60686					
SK41	SK41 Judgment and decision making			0.57850	0.55019	0.19156	0.64172	0.70887
0.35350	0.60382	0.64272	0.61173					
SK42	SK42 Systems evaluation			0.56661	0.54244	0.27934	0.64762	0.68477
0.36272	0.61980	0.66068	0.61209					
SK43	SK43 Time management			0.43517	0.35011	0.07785	0.46413	0.57605
0.41810	0.43520	0.63955	0.66714					
SK46	SK46 Management of personnel resources			0.39567	0.37939	0.23058	0.45836	0.60594
0.42586	0.42693	0.68607	0.68004					

Correlations

GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
GWA1	GWA1 Getting information needed to do job			0.61886	0.39691	0.13580	0.31513	0.37146
0.39640	0.36212	0.36325	0.34682					
GWA2	GWA2 Identifying objects, actions, and events			0.58841	0.33779	0.11538	0.29639	0.34193
0.41574	0.37022	0.34662	0.36206					

PRINCIPAL AXES ANALYSIS OF ABSTRACT-IMPORTANCE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure

Correlations

GWA34	GWA35	GWA36	GWA37	GWA26	GWA29	GWA30	GWA31	GWA32
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GWA3	GWA3	Monitoring processes, materials, or surroundings	0.15170	0.05991	0.06106	-0.02173	0.08075
0.30778		0.23695 0.19195 0.25448					
GWA9	GWA9	Analyzing data or information	0.73665	0.48486	0.18623	0.41962	0.45746
0.47970		0.48523 0.46600 0.44190					
GWA10	GWA10	Making decisions and solving problems	0.68921	0.56319	0.26627	0.48298	0.54656
0.61990		0.59674 0.53447 0.57514					
GWA11	GWA11	Thinking creatively	0.47205	0.46105	0.16066	0.45503	0.38428
0.43948		0.48833 0.43840 0.44089					
GWA12	GWA12	Updating and using job-relevant knowledge	0.73370	0.54845	0.29582	0.46501	0.45108
0.46630		0.47131 0.52460 0.41683					
GWA13	GWA13	Developing objectives and strategies	0.70436	0.66073	0.31182	0.60656	0.63039
0.70360		0.75635 0.68393 0.69733					
GWA15	GWA15	Organizing, planning, and prioritizing work	0.66507	0.67125	0.30163	0.58072	0.63881
0.70457		0.70515 0.61828 0.66932					
GWA26	GWA26	Interpreting the meaning of information for others	1.00000	0.71616	0.46070	0.56086	0.57922
0.51139		0.52434 0.64340 0.44401					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.71616	1.00000	0.67215	0.73798	0.76162
0.63381		0.63933 0.65558 0.54273					
GWA30	GWA30	Assisting and caring for others	0.46070	0.67215	1.00000	0.37907	0.42706
0.32743		0.31133 0.47975 0.22450					
GWA31	GWA31	Selling or influencing others	0.56086	0.73798	0.37907	1.00000	0.73182
0.47929		0.52625 0.46004 0.41733					
GWA32	GWA32	Resolving conflicts and negotiating with others	0.57922	0.76162	0.42706	0.73182	1.00000
0.63136		0.66827 0.49680 0.58707					
GWA34	GWA34	Coordinating the work and activities of others	0.51139	0.63381	0.32743	0.47929	0.63136
1.00000		0.84533 0.63954 0.87654					
GWA35	GWA35	Developing and building teams	0.52434	0.63933	0.31133	0.52625	0.66827
0.84533		1.00000 0.68837 0.87448					
GWA36	GWA36	Teaching others	0.64340	0.65558	0.47975	0.46004	0.49680
0.63954		0.68837 1.00000 0.65912					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.44401	0.54273	0.22450	0.41733	0.58707
0.87654		0.87448 0.65912 1.00000					
GWA38	GWA38	Coaching and developing others	0.55493	0.67809	0.46419	0.48840	0.57166
0.73388		0.81333 0.88333 0.77736					
GWA39	GWA39	Providing consultation and advice to others	0.80818	0.71345	0.37579	0.65843	0.63002
0.60223		0.63079 0.64486 0.55970					
GWA42	GWA42	Monitoring and controlling resources	0.44944	0.62454	0.27699	0.55564	0.64940
0.64065		0.62935 0.45327 0.62614					
KN1	KN1	Administration and Management	0.59735	0.66036	0.29770	0.56064	0.66919
0.79996		0.79046 0.63425 0.81551					
KN22	KN22	Therapy and Counseling	0.39973	0.51983	0.70087	0.27212	0.29661
0.22959		0.29599 0.50425 0.19655					
SK2	SK2	Active listening	0.69417	0.72979	0.53213	0.52798	0.58291
0.47340		0.41321 0.51721 0.37363					
SK5	SK5	Mathematics	0.35359	0.17399	-0.07444	0.17589	0.16724
0.23626		0.18512 0.18678 0.24255					
SK6	SK6	Science	0.31807	0.01985	0.01373	-0.02045	-0.09092
0.13547		0.10383 0.20802 0.12819					
SK7	SK7	Critical thinking	0.67522	0.48704	0.22761	0.40853	0.43450
0.50018		0.48544 0.51833 0.48447					
SK8	SK8	Active learning	0.66257	0.47152	0.20164	0.37963	0.37334
0.46057		0.46990 0.51919 0.46411					
SK9	SK9	Learning strategies	0.59345	0.52263	0.34594	0.35059	0.36190
0.47416		0.50194 0.70927 0.50746					
SK10	SK10	Monitoring	0.45097	0.39035	0.16257	0.24716	0.29542
0.38739		0.40011 0.43870 0.41323					
SK11	SK11	Social Perceptiveness	0.64524	0.82297	0.64559	0.64473	0.68427
0.50231		0.49695 0.59064 0.43154					
SK12	SK12	Coordination	0.51158	0.63157	0.39079	0.44639	0.54952
0.72495		0.63103 0.54195 0.63190					
SK13	SK13	Persuasion	0.58818	0.66341	0.37372	0.71630	0.61249
0.47891		0.47371 0.52773 0.43387					
SK14	SK14	Negotiation	0.49243	0.59508	0.23133	0.66426	0.70426
0.54725		0.53293 0.44131 0.52385					
SK15	SK15	Instruction	0.58591	0.59220	0.45966	0.41495	0.43658
0.57941		0.57287 0.85997 0.59626					
SK17	SK17	Problem identification	0.45044	0.31193	0.13177	0.23936	0.33083
0.34269		0.33505 0.35000 0.32949					
SK18	SK18	Information gathering	0.66573	0.41382	0.18293	0.34580	0.36591
0.35701		0.32670 0.39435 0.32715					
SK19	SK19	Information organization	0.51619	0.28281	0.07965	0.19445	0.21875
0.24398		0.23716 0.31781 0.25518					
SK20	SK20	Synthesis/Reorganization	0.63650	0.43393	0.16040	0.33390	0.33326
0.39805		0.39383 0.44820 0.40078					
SK22	SK22	Idea evaluation	0.58028	0.44812	0.17029	0.40425	0.38582
0.49257		0.49384 0.51319 0.50147					
SK24	SK24	Solution appraisal	0.51966	0.38136	0.12217	0.31274	0.30799
0.39199		0.40247 0.44737 0.41218					
SK37	SK37	Visioning	0.51844	0.42444	0.13344	0.36473	0.36616
0.51222		0.51571 0.49252 0.52675					
SK38	SK38	Systems perceptions	0.52511	0.40086	0.12274	0.31213	0.37776
0.51575		0.49015 0.46626 0.50434					
SK39	SK39	Identification of downstream consequences	0.55146	0.44168	0.13142	0.39919	0.42301
0.53656		0.52291 0.48922 0.54162					
SK40	SK40	Identification of key causes	0.52206	0.43958	0.19667	0.39089	0.39954
0.46104		0.44825 0.46259 0.44981					
SK41	SK41	Judgment and decision making	0.58163	0.47857	0.25139	0.39301	0.43696
0.50130		0.48945 0.47486 0.47083					
SK42	SK42	Systems evaluation	0.54256	0.39879	0.08061	0.34662	0.40455
0.53589		0.52586 0.46737 0.55252					
SK43	SK43	Time management	0.51258	0.57548	0.31075	0.44237	0.52807
0.64441		0.59886 0.55476 0.64551					
SK46	SK46	Management of personnel resources	0.45775	0.54480	0.23422	0.40784	0.55811
0.83847		0.79243 0.62823 0.87225					

Correlations

SK2	SK5	SK6	SK7	GWA38	GWA39	GWA42	KN1	KN22
GWA1	GWA1	Getting information needed to do job		0.34832	0.61094	0.32476	0.46884	0.18886
0.50787		0.44816 0.39243 0.65542						
GWA2	GWA2	Identifying objects, actions, and events		0.32754	0.59377	0.37505	0.42891	0.16470
0.39668		0.38837 0.52182 0.62556						
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.21427	0.17091	0.15682	0.13812	0.10342
0.00197		0.09752 0.40951 0.22216						
GWA9	GWA9	Analyzing data or information		0.43173	0.75814	0.44931	0.59413	0.22857
0.51108		0.49939 0.49050 0.74160						

GWA10	GWA10	Making decisions and solving problems	0.54473	0.77416	0.51863	0.68110	0.29346
0.53324		0.40398 0.42033 0.76079					
GWA11	GWA11	Thinking creatively	0.44720	0.57583	0.39401	0.44396	0.16002
0.35180		0.14783 0.18039 0.43641					
GWA12	GWA12	Updating and using job-relevant knowledge	0.47299	0.73967	0.41452	0.53448	0.30700
0.55009		0.43875 0.49931 0.70534					
GWA13	GWA13	Developing objectives and strategies	0.70876	0.81534	0.61792	0.79704	0.36423
0.54172		0.34579 0.28599 0.68147					
GWA15	GWA15	Organizing, planning, and prioritizing work	0.63465	0.74576	0.63887	0.74430	0.28562
0.55957		0.31369 0.26235 0.66530					
GWA26	GWA26	Interpreting the meaning of information for others	0.55493	0.80818	0.44944	0.59735	0.39973
0.69417		0.35359 0.31807 0.67522					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.67809	0.71345	0.62454	0.66036	0.51983
0.72979		0.17399 0.01985 0.48704					
GWA30	GWA30	Assisting and caring for others	0.46419	0.37579	0.27699	0.29770	0.70087
0.53213		-0.07444 0.01373 0.22761					
GWA31	GWA31	Selling or influencing others	0.48840	0.65843	0.55564	0.56064	0.27212
0.52798		0.17589 -0.02045 0.40853					
GWA32	GWA32	Resolving conflicts and negotiating with others	0.57166	0.63002	0.64940	0.66919	0.29661
0.58291		0.16724 -0.09092 0.43450					
GWA34	GWA34	Coordinating the work and activities of others	0.73388	0.60223	0.64065	0.79996	0.22959
0.47340		0.23626 0.13547 0.50018					
GWA35	GWA35	Developing and building teams	0.81333	0.63079	0.62935	0.79046	0.29599
0.41321		0.18512 0.10383 0.48544					
GWA36	GWA36	Teaching others	0.88333	0.64486	0.45327	0.63425	0.50425
0.51721		0.18678 0.20802 0.51833					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.77736	0.55970	0.62614	0.81551	0.19655
0.37363		0.24255 0.12819 0.48447					
GWA38	GWA38	Coaching and developing others	1.00000	0.63230	0.52409	0.69591	0.51697
0.45567		0.14803 0.13708 0.48617					
GWA39	GWA39	Providing consultation and advice to others	0.63230	1.00000	0.54591	0.72023	0.37147
0.64065		0.38149 0.32806 0.73124					
GWA42	GWA42	Monitoring and controlling resources	0.52409	0.54591	1.00000	0.67118	0.11116
0.37693		0.24599 0.01964 0.31066					
KN1	KN1	Administration and Management	0.69591	0.72023	0.67118	1.00000	0.26558
0.57493		0.36091 0.15565 0.63989					
KN22	KN22	Therapy and Counseling	0.51697	0.37147	0.11116	0.26558	1.00000
0.44260		0.00328 0.14690 0.34021					
SK2	SK2	Active listening	0.45567	0.64065	0.37693	0.57493	0.44260
1.00000		0.31826 0.16030 0.66081					
SK5	SK5	Mathematics	0.14803	0.38149	0.24599	0.36091	0.00328
0.31826		1.00000 0.50007 0.52806					
SK6	SK6	Science	0.13708	0.32806	0.01964	0.15565	0.14690
0.16030		0.50007 1.00000 0.55119					
SK7	SK7	Critical thinking	0.48617	0.73124	0.31066	0.63989	0.34021
0.66081		0.52806 0.55119 1.00000					
SK8	SK8	Active learning	0.47321	0.71233	0.30107	0.59644	0.32951
0.64449		0.51325 0.54439 0.90948					
SK9	SK9	Learning strategies	0.64448	0.62331	0.27763	0.56535	0.48842
0.62294		0.36341 0.42229 0.76021					
SK10	SK10	Monitoring	0.42744	0.49048	0.24714	0.46609	0.31411
0.50812		0.36720 0.34206 0.68780					
SK11	SK11	Social Perceptiveness	0.56416	0.60347	0.45484	0.57624	0.56850
0.81201		0.15854 0.02685 0.54018					
SK12	SK12	Coordination	0.58149	0.56547	0.45048	0.69880	0.33186
0.69130		0.25820 0.15810 0.63783					
SK13	SK13	Persuasion	0.50812	0.67265	0.38353	0.62440	0.40801
0.70290		0.28792 0.14603 0.67408					
SK14	SK14	Negotiation	0.48841	0.62920	0.47660	0.69193	0.27055
0.60105		0.31373 0.08467 0.63558					
SK15	SK15	Instructing	0.78466	0.58531	0.33229	0.59439	0.51346
0.58337		0.23424 0.25819 0.57925					
SK17	SK17	Problem identification	0.33547	0.52628	0.22242	0.46381	0.27085
0.49160		0.49681 0.47184 0.75042					
SK18	SK18	Information gathering	0.34164	0.66322	0.23781	0.53261	0.26611
0.64262		0.56033 0.47374 0.83180					
SK19	SK19	Information organization	0.25667	0.50624	0.17606	0.39639	0.16705
0.49030		0.52371 0.44724 0.70577					
SK20	SK20	Synthesis/Reorganization	0.40160	0.66982	0.29160	0.56539	0.24073
0.60422		0.48256 0.43893 0.80708					
SK22	SK22	Idea evaluation	0.48405	0.69426	0.32066	0.63058	0.29265
0.60403		0.46378 0.46643 0.86778					
SK24	SK24	Solution appraisal	0.41516	0.61715	0.26723	0.54180	0.28999
0.55340		0.49863 0.48645 0.83347					
SK37	SK37	Visioning	0.48886	0.63812	0.29867	0.65830	0.27689
0.57055		0.44865 0.39074 0.82760					
SK38	SK38	Systems perceptions	0.45919	0.60482	0.30932	0.62827	0.24498
0.56743		0.45030 0.44021 0.82086					
SK39	SK39	Identification of downstream consequences	0.48249	0.67522	0.36470	0.68664	0.25214
0.57760		0.51113 0.45532 0.84082					
SK40	SK40	Identification of key causes	0.44532	0.63059	0.31314	0.59634	0.30806
0.60035		0.44309 0.42779 0.83144					
SK41	SK41	Judgment and decision making	0.46353	0.65911	0.32174	0.65318	0.33526
0.64414		0.44437 0.40455 0.86832					
SK42	SK42	Systems evaluation	0.46708	0.65617	0.35492	0.67684	0.21495
0.55608		0.51875 0.43741 0.81424					
SK43	SK43	Time management	0.57061	0.57142	0.46123	0.73584	0.30249
0.62554		0.28265 0.17467 0.65944					
SK46	SK46	Management of personnel resources	0.71130	0.56641	0.56907	0.80702	0.24018
0.48033		0.27520 0.18152 0.57921					

Correlations

SK13	SK14	SK15	SK17	SK8	SK9	SK10	SK11	SK12
GWA1	GWA1	Getting information needed to do job		0.63258	0.47344	0.51017	0.35309	0.39516
0.42287		0.42069 0.36845 0.53833						
GWA2	GWA2	Identifying objects, actions, and events		0.58876	0.41201	0.42866	0.28352	0.35096
0.35973		0.36854 0.32998 0.54372						
GWA3	GWA3	Monitoring processes, materials, or surroundings		0.14883	0.13950	0.18946	0.00261	0.17199
0.01360		0.02291 0.16593 0.27189						
GWA9	GWA9	Analyzing data or information		0.71131	0.52896	0.48639	0.39896	0.41507
0.47495		0.46118 0.41652 0.56561						
GWA10	GWA10	Making decisions and solving problems		0.70484	0.57619	0.52574	0.49551	0.57392

0.55267 0.57593 0.50719 0.59294

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Correlations

SK13	SK14	SK15	SK17	SK8	SK9	SK10	SK11	SK12
GWA11	GWA11 Thinking creatively			0.52615	0.47916	0.41952	0.38773	0.36710
0.38626	0.36611	0.38150	0.14549					
GWA12	GWA12 Updating and using job-relevant knowledge			0.69271	0.57052	0.45509	0.44953	0.43571
0.49679	0.43443	0.48152	0.55926					
GWA13	GWA13 Developing objectives and strategies			0.67336	0.64286	0.50249	0.56422	0.60392
0.63108	0.63705	0.61121	0.45966					
GWA15	GWA15 Organizing, planning, and prioritizing work			0.65110	0.60116	0.52275	0.58533	0.63581
0.61194	0.63861	0.55757	0.45702					
GWA26	GWA26 Interpreting the meaning of information for others			0.66257	0.59345	0.45097	0.64524	0.51158
0.58818	0.49243	0.58591	0.45044					
GWA29	GWA29 Establishing and maintaining interpersonal relationships			0.47152	0.52263	0.39035	0.82297	0.63157
0.66341	0.59508	0.59220	0.31193					
GWA30	GWA30 Assisting and caring for others			0.20164	0.34594	0.16257	0.64559	0.39079
0.37372	0.23133	0.45966	0.13177					
GWA31	GWA31 Selling or influencing others			0.37963	0.35059	0.24716	0.64473	0.44639
0.71630	0.66426	0.41495	0.23936					
GWA32	GWA32 Resolving conflicts and negotiating with others			0.37334	0.36190	0.29542	0.68427	0.54952
0.61249	0.70426	0.43658	0.33083					
GWA34	GWA34 Coordinating the work and activities of others			0.46057	0.47416	0.38739	0.50231	0.72495
0.47891	0.54725	0.57941	0.34269					
GWA35	GWA35 Developing and building teams			0.46990	0.50194	0.40011	0.49695	0.63103
0.47371	0.53293	0.57287	0.33505					
GWA36	GWA36 Teaching others			0.51919	0.70927	0.43870	0.59064	0.54195
0.52773	0.44131	0.85997	0.35000					
GWA37	GWA37 Guiding, directing and motivating subordinates			0.46411	0.50746	0.41323	0.43154	0.63190
0.43387	0.52385	0.59626	0.32949					
GWA38	GWA38 Coaching and developing others			0.47321	0.64448	0.42744	0.56416	0.58149
0.50812	0.48841	0.78466	0.33547					
GWA39	GWA39 Providing consultation and advice to others			0.71233	0.62331	0.49048	0.60347	0.56547
0.67265	0.62920	0.58531	0.52628					
GWA42	GWA42 Monitoring and controlling resources			0.30107	0.27763	0.24714	0.45484	0.45048
0.38353	0.47660	0.33229	0.22242					
KN1	KN1 Administration and Management			0.59644	0.56535	0.46609	0.57624	0.69880
0.62440	0.69193	0.59439	0.46381					
KN22	KN22 Therapy and Counseling			0.32951	0.48842	0.31411	0.56850	0.33186
0.40801	0.27055	0.51346	0.27085					
SK2	SK2 Active listening			0.64449	0.62294	0.50812	0.81201	0.69130
0.70290	0.60105	0.58337	0.49160					
SK5	SK5 Mathematics			0.51325	0.36341	0.36720	0.15854	0.25820
0.28792	0.31373	0.23424	0.49681					
SK6	SK6 Science			0.54439	0.42229	0.34206	0.02685	0.15810
0.14603	0.08467	0.25819	0.47184					
SK7	SK7 Critical thinking			0.90948	0.76021	0.68780	0.54018	0.63783
0.67408	0.63558	0.57925	0.75042					
SK8	SK8 Active learning			1.00000	0.80413	0.70971	0.52952	0.60542
0.64737	0.59588	0.58778	0.65568					
SK9	SK9 Learning strategies			0.80413	1.00000	0.71430	0.61218	0.62495
0.65600	0.55423	0.80326	0.55904					
SK10	SK10 Monitoring			0.70971	0.71430	1.00000	0.47913	0.56605
0.52602	0.48761	0.51875	0.57461					
SK11	SK11 Social Perceptiveness			0.52952	0.61218	0.47913	1.00000	0.67633
0.75749	0.64237	0.64831	0.37318					
SK12	SK12 Coordination			0.60542	0.62495	0.56605	0.67633	1.00000
0.65158	0.65738	0.61614	0.44785					
SK13	SK13 Persuasion			0.64737	0.65600	0.52602	0.75749	0.65158
1.00000	0.85484	0.63814	0.48413					
SK14	SK14 Negotiation			0.59588	0.55423	0.48761	0.64237	0.65738
0.85484	1.00000	0.52514	0.46248					
SK15	SK15 Instructing			0.58778	0.80326	0.51875	0.64831	0.61614
0.63814	0.52514	1.00000	0.41673					
SK17	SK17 Problem identification			0.65568	0.55904	0.57461	0.37318	0.44785
0.48413	0.46248	0.41673	1.00000					
SK18	SK18 Information gathering			0.81153	0.63647	0.57435	0.47120	0.49223
0.57462	0.53069	0.45773	0.70585					
SK19	SK19 Information organization			0.73048	0.61278	0.60333	0.33398	0.39461
0.43392	0.38839	0.37168	0.58389					
SK20	SK20 Synthesis/Reorganization			0.84556	0.71670	0.65176	0.46838	0.54010
0.58232	0.54213	0.49058	0.56174					
SK22	SK22 Idea evaluation			0.87291	0.78111	0.71975	0.52576	0.64370
0.66581	0.62807	0.57497	0.67911					
SK24	SK24 Solution appraisal			0.81525	0.74897	0.76647	0.45124	0.55327
0.58218	0.53218	0.52855	0.75737					
SK37	SK37 Visioning			0.81502	0.74433	0.68758	0.49251	0.67624
0.65031	0.63713	0.58515	0.65611					
SK38	SK38 Systems perceptions			0.76769	0.67839	0.65486	0.46066	0.66197
0.59482	0.58517	0.53406	0.72235					
SK39	SK39 Identification of downstream consequences			0.80151	0.71039	0.67301	0.48074	0.65506
0.66543	0.66529	0.53360	0.69719					
SK40	SK40 Identification of key causes			0.77597	0.70735	0.70385	0.53447	0.63803
0.66376	0.63042	0.54241	0.75914					
SK41	SK41 Judgment and decision making			0.78890	0.67361	0.63840	0.54692	0.65975
0.65616	0.63508	0.53357	0.72420					
SK42	SK42 Systems evaluation			0.77392	0.68103	0.64880	0.45010	0.62971
0.61676	0.61996	0.54165	0.71053					
SK43	SK43 Time management			0.65361	0.69356	0.62493	0.65132	0.74917
0.67199	0.64945	0.64367	0.49857					
SK46	SK46 Management of personnel resources			0.55734	0.62514	0.52641	0.53108	0.74716
0.54596	0.60924	0.66405	0.43249					

Correlations

SK37	SK38	SK39	SK40	SK18	SK19	SK20	SK22	SK24
GWA1	GWA1 Getting information needed to do job			0.69483	0.56750	0.59105	0.58192	0.59342
0.54461	0.54554	0.55561	0.56732					

GWA2	GWA2	Identifying objects, actions, and events	0.60039	0.48541	0.52743	0.52623	0.53009
0.47216		0.52664 0.53307 0.52195					
GWA3	GWA3	Monitoring processes, materials, or surroundings	0.08097	0.02431	0.02989	0.14071	0.14518
0.16578		0.32417 0.25576 0.21806					
GWA9	GWA9	Analyzing data or information	0.71929	0.57904	0.67879	0.65520	0.63127
0.57707		0.59757 0.64080 0.60477					
GWA10	GWA10	Making decisions and solving problems	0.63767	0.47901	0.62485	0.70595	0.63540
0.64108		0.65094 0.68921 0.68427					
GWA11	GWA11	Thinking creatively	0.32269	0.34011	0.53896	0.53955	0.41241
0.46148		0.30703 0.38443 0.37718					
GWA12	GWA12	Updating and using job-relevant knowledge	0.64668	0.53221	0.62324	0.60945	0.59171
0.56767		0.58229 0.61379 0.57932					
GWA13	GWA13	Developing objectives and strategies	0.57044	0.44681	0.62546	0.70351	0.59302
0.65584		0.60488 0.69230 0.62713					
GWA15	GWA15	Organizing, planning, and prioritizing work	0.54612	0.46628	0.62232	0.66608	0.57055
0.61431		0.56870 0.63699 0.60686					
GWA26	GWA26	Interpreting the meaning of information for others	0.66573	0.51619	0.63650	0.58028	0.51966
0.51844		0.52511 0.55146 0.52206					
GWA29	GWA29	Establishing and maintaining interpersonal relationships	0.41382	0.28281	0.43393	0.44812	0.38136
0.42444		0.40086 0.44168 0.43958					
GWA30	GWA30	Assisting and caring for others	0.18293	0.07965	0.16040	0.17029	0.12217
0.13344		0.12274 0.13142 0.19667					
GWA31	GWA31	Selling or influencing others	0.34580	0.19445	0.33390	0.40425	0.31274
0.36473		0.31213 0.39919 0.39089					
GWA32	GWA32	Resolving conflicts and negotiating with others	0.36591	0.21875	0.33326	0.38582	0.30799
0.36616		0.37776 0.42301 0.39954					
GWA34	GWA34	Coordinating the work and activities of others	0.35701	0.24398	0.39805	0.49257	0.39199
0.51222		0.51575 0.53656 0.46104					
GWA35	GWA35	Developing and building teams	0.32670	0.23716	0.39383	0.49384	0.40247
0.51571		0.49015 0.52291 0.44825					
GWA36	GWA36	Teaching others	0.39435	0.31781	0.44820	0.51319	0.44737
0.49252		0.46626 0.48922 0.46259					
GWA37	GWA37	Guiding, directing and motivating subordinates	0.32715	0.25518	0.40078	0.50147	0.41218
0.52675		0.50434 0.54162 0.44981					
GWA38	GWA38	Coaching and developing others	0.34164	0.25667	0.40160	0.48405	0.41516
0.48886		0.45919 0.48249 0.44532					
GWA39	GWA39	Providing consultation and advice to others	0.66322	0.50624	0.66982	0.69426	0.61715
0.63812		0.60482 0.67522 0.63059					
GWA42	GWA42	Monitoring and controlling resources	0.23781	0.17606	0.29160	0.32066	0.26723
0.29867		0.30932 0.36470 0.31314					
KN1	KN1	Administration and Management	0.53261	0.39639	0.56539	0.63058	0.54180
0.65830		0.62827 0.68664 0.59634					
KN22	KN22	Therapy and Counseling	0.26611	0.16705	0.24073	0.29265	0.28999
0.27689		0.24498 0.25214 0.30806					
SK2	SK2	Active listening	0.64262	0.49030	0.60422	0.60403	0.55340
0.57055		0.56743 0.57760 0.60035					
SK5	SK5	Mathematics	0.56033	0.52371	0.48256	0.46378	0.49863
0.44865		0.45030 0.51113 0.44309					
SK6	SK6	Science	0.47374	0.44724	0.43893	0.46643	0.48645
0.39074		0.44021 0.45532 0.42779					
SK7	SK7	Critical thinking	0.83180	0.70577	0.80708	0.86778	0.83347
0.82760		0.82086 0.84082 0.83144					
SK8	SK8	Active learning	0.81153	0.73048	0.84556	0.87291	0.81525
0.81502		0.76769 0.80151 0.77597					
SK9	SK9	Learning strategies	0.63647	0.61278	0.71670	0.78111	0.74897
0.74433		0.67839 0.71039 0.70735					
SK10	SK10	Monitoring	0.57435	0.60333	0.65176	0.71975	0.76647
0.68758		0.65486 0.67301 0.70385					
SK11	SK11	Social Perceptiveness	0.47120	0.33398	0.46838	0.52576	0.45124
0.49251		0.46066 0.48074 0.53447					
SK12	SK12	Coordination	0.49223	0.39461	0.54010	0.64370	0.55327
0.67624		0.66197 0.65506 0.63803					
SK13	SK13	Persuasion	0.57462	0.43392	0.58232	0.66581	0.58218
0.65031		0.59482 0.66543 0.66376					
SK14	SK14	Negotiation	0.53069	0.38839	0.54213	0.62807	0.53218
0.63713		0.58517 0.66529 0.63042					
SK15	SK15	Instructing	0.45773	0.37168	0.49058	0.57497	0.52855
0.58515		0.53406 0.55360 0.54241					
SK17	SK17	Problem identification	0.70585	0.58389	0.56174	0.67911	0.75737
0.65611		0.72235 0.69719 0.75914					
SK18	SK18	Information gathering	1.00000	0.81818	0.79209	0.75907	0.74298
0.69031		0.71147 0.72972 0.70804					
SK19	SK19	Information organization	0.81818	1.00000	0.81686	0.69962	0.70555
0.61182		0.59627 0.62618 0.60034					
SK20	SK20	Synthesis/Reorganization	0.79209	0.81686	1.00000	0.82028	0.76366
0.74436		0.67121 0.72441 0.68625					
SK22	SK22	Idea evaluation	0.75907	0.69962	0.82028	1.00000	0.85941
0.85200		0.78566 0.84051 0.84739					
SK24	SK24	Solution appraisal	0.74298	0.70555	0.76366	0.85941	1.00000
0.81661		0.76485 0.79544 0.84130					
SK37	SK37	Visioning	0.69031	0.61182	0.74436	0.85200	0.81661
1.00000		0.86248 0.87294 0.83144					
SK38	SK38	Systems perceptions	0.71147	0.59627	0.67121	0.78566	0.76485
0.86248		1.00000 0.89810 0.83498					
SK39	SK39	Identification of downstream consequences	0.72972	0.62618	0.72441	0.84051	0.79544
0.87294		0.89810 1.00000 0.86497					
SK40	SK40	Identification of key causes	0.70804	0.60034	0.68625	0.84739	0.84130
0.83144		0.83498 0.86497 1.00000					
SK41	SK41	Judgment and decision making	0.75425	0.60813	0.69621	0.82256	0.77980
0.81684		0.82735 0.84676 0.85241					
SK42	SK42	Systems evaluation	0.72132	0.59823	0.68080	0.80104	0.77737
0.85015		0.88643 0.89904 0.83124					
SK43	SK43	Time management	0.54350	0.45855	0.60036	0.70736	0.66016
0.71413		0.66388 0.69112 0.70345					
SK46	SK46	Management of personnel resources	0.43498	0.34855	0.48183	0.61418	0.53539
0.64662		0.62484 0.65603 0.58965					

Correlations

SK46				SK41	SK42	SK43
0.39567	GWA1	GWA1 Getting information needed to do job		0.57850	0.56661	0.43517

0.37939	GWA2	GWA2 Identifying objects, actions, and events	0.55019	0.54244	0.35011
0.23058	GWA3	GWA3 Monitoring processes, materials, or surroundings	0.19156	0.27934	0.07785
0.45836	GWA9	GWA9 Analyzing data or information	0.64172	0.64762	0.46413
0.60594	GWA10	GWA10 Making decisions and solving problems	0.70887	0.68477	0.57605
0.42586	GWA11	GWA11 Thinking creatively	0.35350	0.36272	0.41810
0.42693	GWA12	GWA12 Updating and using job-relevant knowledge	0.60382	0.61980	0.43520
0.68607	GWA13	GWA13 Developing objectives and strategies	0.64272	0.66068	0.63955

PRINCIPAL AXES ANALYSIS OF ABSTRACT-IMPORTANCE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure

Correlations

			SK41	SK42	SK43
SK46					
	GWA15	GWA15 Organizing, planning, and prioritizing work	0.61173	0.61209	0.66714
0.68004	GWA26	GWA26 Interpreting the meaning of information for others	0.58163	0.54256	0.51258
0.45775	GWA29	GWA29 Establishing and maintaining interpersonal relationships	0.47857	0.39879	0.57548
0.54480	GWA30	GWA30 Assisting and caring for others	0.25139	0.08061	0.31075
0.23422	GWA31	GWA31 Selling or influencing others	0.39301	0.34662	0.44237
0.40784	GWA32	GWA32 Resolving conflicts and negotiating with others	0.43696	0.40455	0.52807
0.55811	GWA34	GWA34 Coordinating the work and activities of others	0.50130	0.53589	0.64441
0.83847	GWA35	GWA35 Developing and building teams	0.48945	0.52586	0.59886
0.79243	GWA36	GWA36 Teaching others	0.47486	0.46737	0.55476
0.62823	GWA37	GWA37 Guiding, directing and motivating subordinates	0.47083	0.55252	0.64551
0.87225	GWA38	GWA38 Coaching and developing others	0.46353	0.46708	0.57061
0.71130	GWA39	GWA39 Providing consultation and advice to others	0.65911	0.65617	0.57142
0.56641	GWA42	GWA42 Monitoring and controlling resources	0.32174	0.35492	0.46123
0.56907	KN1	KN1 Administration and Management	0.65318	0.67684	0.73584
0.80702	KN22	KN22 Therapy and Counseling	0.33526	0.21495	0.30249
0.24018	SK2	SK2 Active listening	0.64414	0.55608	0.62554
0.48033	SK5	SK5 Mathematics	0.44437	0.51875	0.28265
0.27520	SK6	SK6 Science	0.40455	0.43741	0.17467
0.18152	SK7	SK7 Critical thinking	0.86832	0.81424	0.65944
0.57921	SK8	SK8 Active learning	0.78890	0.77392	0.65361
0.55734	SK9	SK9 Learning strategies	0.67361	0.68103	0.69356
0.62514	SK10	SK10 Monitoring	0.63840	0.64880	0.62493
0.52641	SK11	SK11 Social Perceptiveness	0.54692	0.45010	0.65132
0.53108	SK12	SK12 Coordination	0.65975	0.62971	0.74917
0.74716	SK13	SK13 Persuasion	0.65616	0.61676	0.67199
0.54596	SK14	SK14 Negotiation	0.63508	0.61996	0.64945
0.60924	SK15	SK15 Instructing	0.53357	0.54165	0.64367
0.66405	SK17	SK17 Problem identification	0.72420	0.71053	0.49857
0.43249	SK18	SK18 Information gathering	0.75425	0.72132	0.54350
0.43498	SK19	SK19 Information organization	0.60813	0.59823	0.45855
0.34855	SK20	SK20 Synthesis/Reorganization	0.69621	0.68080	0.60036
0.48183	SK22	SK22 Idea evaluation	0.82256	0.80104	0.70736
0.61418	SK24	SK24 Solution appraisal	0.77980	0.77737	0.66016
0.53539	SK37	SK37 Visioning	0.81684	0.85015	0.71413
0.64662	SK38	SK38 Systems perceptions	0.82735	0.88643	0.66388
0.62484	SK39	SK39 Identification of downstream consequences	0.84676	0.89904	0.69112
0.65603	SK40	SK40 Identification of key causes	0.85241	0.83124	0.70345
0.58965	SK41	SK41 Judgment and decision making	1.00000	0.81770	0.68364
0.59546	SK42	SK42 Systems evaluation	0.81770	1.00000	0.67994
0.66492	SK43	SK43 Time management	0.68364	0.67994	1.00000
0.77217	SK46	SK46 Management of personnel resources	0.59546	0.66492	0.77217
1.00000					

PRINCIPAL AXES ANALYSIS OF ABSTRACT-IMPORTANCE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Communality Estimates: SMC

	GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29	0.73147022 0.88306769	0.74563235 0.74190958	0.53785711 0.78787035	0.84776428	0.83353858	0.68946011	0.75975382	0.85945520	0.80872181	0.82546127
SK2	GWA32	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA42	KN1	KN22
	0.81705074 0.81980570	0.87232603 0.54048523	0.87471156 0.67204872	0.88651601	0.90169063	0.89924841	0.84646031	0.69196215	0.86559977	0.68343056
SK18	SK7	SK8	SK9	SK10	SK11	SK12	SK13	SK14	SK15	SK17
	0.92315548 0.87250334	0.90350183 0.80303006	0.87128248 0.85833793	0.70791296	0.86662320	0.80106196	0.87878027	0.85663727	0.87204006	0.76295137
SK43	SK22	SK24	SK37	SK38	SK39	SK40	SK41	SK42		
	0.89329978 0.79116690	0.86450611 0.88097779		0.87891106	0.88814063	0.90539508	0.87072119	0.85306809	0.87908356	

Eigenvalues of the Reduced Correlation Matrix: Total = 40.1063866 Average = 0.81849769

	Eigenvalue	Difference	Proportion	Cumulative
1	26.3714587	21.7010479	0.6575	0.6575
2	4.6704107	2.4194849	0.1165	0.7740
3	2.2509258	0.2102225	0.0561	0.8301
4	2.0407033	0.4363963	0.0509	0.8810
5	1.6043071	0.5573763	0.0400	0.9210
6	1.0469307	0.3974164	0.0261	0.9471
7	0.6495143	0.0855662	0.0162	0.9633
8	0.5639481	0.1804270	0.0141	0.9774
9	0.3835212	0.0377553	0.0096	0.9869
10	0.3457658	0.0160009	0.0086	0.9955
11	0.3297650	0.0727081	0.0082	1.0038
12	0.2570569	0.0524288	0.0064	1.0102
13	0.2046281	0.0520513	0.0051	1.0153
14	0.1525768	0.0303614	0.0038	1.0191
15	0.1222154	0.0311484	0.0030	1.0221
16	0.0910669	0.0120881	0.0023	1.0244
17	0.0789788	0.0135569	0.0020	1.0264
18	0.0654219	0.0121151	0.0016	1.0280
19	0.0533067	0.0078658	0.0013	1.0293
20	0.0454410	0.0108696	0.0011	1.0305
21	0.0345714	0.0164863	0.0009	1.0313
22	0.0180851	0.0059359	0.0005	1.0318
23	0.0121492	0.0076873	0.0003	1.0321
24	0.0044619	0.0014698	0.0001	1.0322
25	0.0029921	0.0044746	0.0001	1.0323
26	-0.0014825	0.0071198	-0.0000	1.0322
27	-0.0086023	0.0071125	-0.0002	1.0320
28	-0.0157148	0.0058605	-0.0004	1.0316
29	-0.0215753	0.0009342	-0.0005	1.0311
30	-0.0225095	0.0054750	-0.0006	1.0305
31	-0.0279845	0.0034831	-0.0007	1.0298
32	-0.0314676	0.0008806	-0.0008	1.0290
33	-0.0323482	0.0049787	-0.0008	1.0282
34	-0.0373269	0.0012057	-0.0009	1.0273
35	-0.0385326	0.0040918	-0.0010	1.0263
36	-0.0426244	0.0047099	-0.0011	1.0253
37	-0.0473342	0.0015626	-0.0012	1.0241
38	-0.0488968	0.0022385	-0.0012	1.0229
39	-0.0511353	0.0064201	-0.0013	1.0216
40	-0.0575555	0.0062224	-0.0014	1.0202
41	-0.0637779	0.0025261	-0.0016	1.0186
42	-0.0663039	0.0051261	-0.0017	1.0169
43	-0.0714300	0.0012258	-0.0018	1.0151
44	-0.0726558	0.0115555	-0.0018	1.0133
45	-0.0842112	0.0117327	-0.0021	1.0112
46	-0.0959439	0.0076454	-0.0024	1.0088
47	-0.1035893	0.0082520	-0.0026	1.0063
48	-0.1118413	0.0271313	-0.0028	1.0035
49	-0.1389726		-0.0035	1.0000

7 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF ABSTRACT-IMPORTANCE
VARIMAX ROTATION OF 7 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5	6
7						
0.03337	1	0.66578	0.48057	0.38242	0.29780	0.27446
-0.06734	2	-0.58002	0.56333	-0.25943	0.37885	0.35870
0.38188	3	-0.17962	0.54548	0.24021	-0.63766	-0.23657
	4	-0.42643	-0.28913	0.81280	0.15174	0.18634
						0.12004
						0.04691
						0.06386
						0.11672

0.05046		5	-0.05014	0.05730	0.00861	0.57000	-0.71383	0.13470
0.37620		6	0.02870	-0.09534	-0.03768	0.10312	0.27159	-0.71004
0.63255		7	-0.05355	0.24121	0.25810	0.05118	-0.34928	-0.66587
-0.55166								

Rotated Factor Pattern

Factor5	Factor6	Factor7	Factor1	Factor2	Factor3	Factor4
GWA1	GWA1 Getting information needed to do job		0.42999	0.16595	0.64855	0.07468
0.12941	0.02743	0.05966				
GWA2	GWA2 Identifying objects, actions, and events		0.35563	0.17639	0.68213	0.04348
0.10192	0.02818	0.30249				
GWA3	GWA3 Monitoring processes, materials, or surroundings		0.10059	0.19038	0.22486	0.03642
-0.13026	-0.04432	0.63429				
GWA9	GWA9 Analyzing data or information		0.41634	0.25052	0.73821	0.08256
0.17453	0.12821	0.10828				
GWA10	GWA10 Making decisions and solving problems		0.44762	0.38691	0.54384	0.12967
0.26916	0.15039	0.23739				
GWA11	GWA11 Thinking creatively		0.20981	0.33566	0.30436	0.07741
0.20518	0.59323	-0.08180				
GWA12	GWA12 Updating and using job-relevant knowledge		0.38683	0.21537	0.64602	0.23350
0.17635	0.16844	0.15297				
GWA13	GWA13 Developing objectives and strategies		0.38267	0.56424	0.37983	0.19541
0.30154	0.30577	0.07159				
GWA15	GWA15 Organizing, planning, and prioritizing work		0.36558	0.55061	0.38604	0.15748
0.32993	0.25898	0.02335				
GWA26	GWA26 Interpreting the meaning of information for others		0.30111	0.28016	0.60005	0.42684
0.26560	0.10694	-0.06667				
GWA29	GWA29 Establishing and maintaining interpersonal relationships		0.13202	0.45462	0.27133	0.56193
0.50396	0.03624	-0.09999				
GWA30	GWA30 Assisting and caring for others		-0.04127	0.15616	0.09819	0.79480
0.22284	-0.08323	0.00840				
GWA31	GWA31 Selling or influencing others		0.11093	0.31634	0.20666	0.24463
0.70655	0.18993	-0.05811				
GWA32	GWA32 Resolving conflicts and negotiating with others		0.10514	0.51862	0.22651	0.24749
0.62732	-0.04898	-0.03926				
GWA34	GWA34 Coordinating the work and activities of others		0.22472	0.84349	0.18076	0.15427
0.17767	-0.02247	0.11050				
GWA35	GWA35 Developing and building teams		0.19667	0.82806	0.16006	0.18082
0.18786	0.13411	0.10160				
GWA36	GWA36 Teaching others		0.24759	0.57979	0.17555	0.57737
-0.00772	0.25756	0.04334				
GWA37	GWA37 Guiding, directing and motivating subordinates		0.25464	0.89915	0.11040	0.08478
0.06864	0.06172	0.06707				
GWA38	GWA38 Coaching and developing others		0.20449	0.71037	0.11228	0.49627
0.04360	0.21960	0.09307				
GWA39	GWA39 Providing consultation and advice to others		0.39236	0.37834	0.51303	0.27894
0.36802	0.22797	0.02693				
GWA42	GWA42 Monitoring and controlling resources		0.01928	0.63270	0.30024	0.04539
0.38115	0.01099	0.00433				
KN1	KN1 Administration and Management		0.40405	0.72493	0.22769	0.12165
0.30432	-0.00123	-0.03804				
KN22	KN22 Therapy and Counseling		0.17135	0.06297	0.04052	0.76440
0.08183	0.05800	0.11735				
SK2	SK2 Active listening		0.47038	0.20564	0.27360	0.49740
0.38445	-0.12856	-0.21073				
SK5	SK5 Mathematics		0.47415	0.10000	0.42665	-0.10448
-0.01873	-0.11100	-0.06203				
SK6	SK6 Science		0.45788	-0.06163	0.45847	0.05395
-0.28485	0.08578	0.30635				
SK7	SK7 Critical thinking		0.78734	0.20923	0.40829	0.19750
0.15547	0.07259	0.05960				
SK8	SK8 Active learning		0.76779	0.19967	0.39958	0.19915
0.09027	0.21063	-0.06120				
SK9	SK9 Learning strategies		0.68688	0.29978	0.14339	0.45664
-0.02390	0.27319	-0.05531				
SK10	SK10 Monitoring		0.70130	0.21227	0.14446	0.19614
0.02932	0.14862	-0.01120				
SK11	SK11 Social Perceptiveness		0.33147	0.29140	0.09264	0.62108
0.49489	-0.01484	-0.14727				
SK12	SK12 Coordination		0.53106	0.53276	0.02263	0.29198
0.27134	-0.08754	-0.01783				
SK13	SK13 Persuasion		0.55249	0.22664	0.06337	0.34493
0.57825	0.12239	-0.06525				
SK14	SK14 Negotiation		0.51618	0.36124	0.05523	0.12207
0.61048	0.05122	-0.05158				
SK15	SK15 Instructing		0.43075	0.47051	0.05212	0.59338
-0.00113	0.19071	0.01703				
SK17	SK17 Problem identification		0.70863	0.10216	0.32069	0.12593
0.08272	-0.17830	0.19711				
SK18	SK18 Information gathering		0.70343	0.08643	0.54274	0.15700
0.10757	-0.07438	-0.16913				
SK19	SK19 Information organization		0.67346	0.05254	0.46431	0.07607
-0.06692	0.04131	-0.30376				
SK20	SK20 Synthesis/Reorganization		0.69890	0.17985	0.43502	0.12363
0.06848	0.22416	-0.27036				
SK22	SK22 Idea evaluation		0.81355	0.25154	0.25960	0.12743
0.14952	0.23758	-0.02471				
SK24	SK24 Solution appraisal		0.83139	0.16120	0.27347	0.12568
0.06179	0.13004	0.00446				
SK37	SK37 Visioning		0.83313	0.30420	0.13419	0.09321
0.15022	0.14768	0.04819				
SK38	SK38 Systems perceptions		0.81724	0.29189	0.19083	0.08662
0.12947	-0.05869	0.20525				
SK39	SK39 Identification of downstream consequences		0.82061	0.31467	0.21604	0.05898
0.19830	0.04249	0.14302				
SK40	SK40 Identification of key causes		0.82797	0.20277	0.18061	0.14598
0.22722	0.04301	0.15544				
SK41	SK41 Judgment and decision making		0.77773	0.23792	0.25449	0.17685
0.23202	-0.03793	0.10577				
SK42	SK42 Systems evaluation		0.79668	0.33802	0.23833	0.02322
0.15414	-0.00399	0.16066				

SK43	SK43 Time management	0.60756	0.51661	0.02213	0.22466
0.23609	0.02735 -0.09902				
SK46	SK46 Management of personnel resources	0.45337	0.79696	0.03783	0.12510
0.10869	0.01162 0.04786				

Variance Explained by Each Factor

Factor7	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
1.227609	13.711252	8.465602	5.693919	4.505390	3.758282	1.272197

Final Communality Estimates: Total = 38.634251

GWA1	GWA2	GWA3	GWA9	GWA10	GWA11	GWA12	GWA13	GWA15	GWA26
GWA29	GWA30	GWA31							
0.65968647	0.72746150	0.51950917	0.84648692	0.81405483	0.65602616	0.75075486	0.83679745	0.78712270	0.79784067
0.87877682	0.72409583	0.75358880							
GWA32	GWA34	GWA35	GWA36	GWA37	GWA38	GWA39	GWA42	KN1	KN22
SK2	SK5	SK6							
0.79005571	0.86273232	0.84628841	0.82991151	0.90571063	0.86411625	0.82622577	0.63830238	0.84948085	0.64311023
0.79454030	0.44428929	0.60890156							
SK7	SK8	SK9	SK10	SK11	SK12	SK13	SK14	SK15	SK17
SK18	SK19	SK20							
0.90238385	0.88495662	0.86902402	0.61928775	0.85593949	0.73322721	0.83321707	0.79286676	0.79840360	0.70877359
0.86721658	0.77613253	0.85336016							
SK22	SK24	SK37	SK38	SK39	SK40	SK41	SK42		
SK43	SK46								
0.75327148	0.88818337	0.82851833	0.86003725	0.85933764	0.88415601	0.85822809	0.82396765	0.85588275	
	0.87201152								

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Correlations

GWA16	GWA17	GWA18	GWA19	GWA4	GWA5	GWA14
GWA4	GWA4 Inspecting equipment, structures or materials			1.00000	0.35670	0.08426
0.19333	0.23335	0.49726	0.12679			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.35670	1.00000	0.63524
0.22242	-0.31040	-0.08991	0.58493			
GWA14	GWA14 Scheduling work and activities			0.08426	0.63524	1.00000
0.27924	-0.50112	-0.34039	0.49333			
GWA16	GWA16 Performing general physical activities			0.19333	-0.22242	-0.27924
1.00000	0.63645	0.38669	-0.50086			
GWA17	GWA17 Handling and moving objects			0.23335	-0.31040	-0.50112
0.63645	1.00000	0.59053	-0.44644			
GWA18	GWA18 Controlling machines and processes			0.49726	-0.08991	-0.34039
0.38669	0.59053	1.00000	-0.25716			
GWA19	GWA19 Interacting with computers			0.12679	0.58493	0.49333
0.50086	-0.44644	-0.25716	1.00000			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			0.14714	-0.01290	-0.08315
0.40891	0.18007	0.23168	-0.23650			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.54646	0.50997	0.23390
0.05716	0.03685	0.19201	0.38007			
GWA22	GWA22 Implementing ideas, programs, systems or products			0.33435	0.75093	0.61316
0.23494	-0.26324	-0.08178	0.59615			
GWA23	GWA23 Repairing and maintaining mechanical equipment			0.54901	-0.10584	-0.27929
0.45726	0.49741	0.64205	-0.28659			
GWA24	GWA24 Repairing and maintaining electronic equipment			0.54551	0.13230	-0.04261
0.10703	0.18651	0.32802	0.18499			
GWA25	GWA25 Documenting/recording information			0.17388	0.65642	0.60006
0.45475	-0.52868	-0.27274	0.74146			
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.14026	0.70817	0.78059
0.37285	-0.58703	-0.31987	0.69207			
GWA28	GWA28 Communicating with persons outside the organizations			-0.08009	0.57127	0.70494
0.39578	-0.61865	-0.51662	0.57863			
GWA40	GWA40 Performing administrative activities			0.05590	0.58417	0.78360
0.42423	-0.56422	-0.38166	0.60295			
GWA41	GWA41 Staffing organizational units			0.03828	0.45157	0.72921
0.21142	-0.36541	-0.24896	0.30970			
KN2	KN2 Clerical			-0.14353	0.23258	0.41789
0.40739	-0.41381	-0.38953	0.52252			
KN3	KN3 Economics and Accounting			-0.10653	0.48828	0.59439
0.36529	-0.49734	-0.44313	0.43989			
KN4	KN4 Sales and Marketing			-0.11210	0.29481	0.41955
0.25330	-0.35750	-0.35630	0.24235			
KN5	KN5 Customer and Personal Service			-0.17292	0.15452	0.39259
0.12473	-0.26822	-0.40905	0.21253			
KN6	KN6 Personnel and Human Resources			0.02354	0.44908	0.70547
0.23893	-0.41639	-0.32728	0.34386			
KN7	KN7 Production and Processing			0.39855	0.07677	-0.15085
0.05717	0.32264	0.43281	-0.08096			
KN8	KN8 Food Production			0.01958	0.13273	0.12619
0.03142	-0.05674	-0.04342	0.02500			
KN9	KN9 Computers and Electronics			0.23922	0.42323	0.31056
0.38943	-0.31559	-0.13996	0.72769			
KN10	KN10 Engineering and Technology			0.64531	0.26850	-0.05713
0.21106	0.24684	0.48680	0.10763			
KN11	KN11 Design			0.45840	0.30068	-0.00742
0.04237	0.16007	0.20987	0.16911			
KN12	KN12 Building and Construction			0.33014	0.06058	-0.12829
0.40678	0.32292	0.28156	-0.21203			
KN13	KN13 Mechanical			0.59317	-0.06577	-0.31645
0.50006	0.55851	0.65968	-0.30673			

KN14	KN14 Mathematics			0.22566	0.65622	0.46247	-
0.34807	-0.35848	-0.15602	0.67045				
KN16	KN16 Chemistry			0.35073	0.25782	0.07585	
0.08133	0.13793	0.32429	0.10679				
KN17	KN17 Biology			0.08634	0.29199	0.24409	-
0.00024	-0.09445	-0.01468	0.21293				
KN20	KN20 Geography			-0.00753	0.35200	0.22186	-
0.04250	-0.25307	-0.22631	0.21480				
KN21	KN21 Medicine and Dentistry			0.04245	0.14634	0.18456	
0.05390	-0.01694	-0.02789	0.10966				
KN23	KN23 Education and Training			0.01117	0.46876	0.62688	-
0.20998	-0.35909	-0.31659	0.43273				
KN29	KN29 Public Safety and Security			0.35601	0.28280	0.17272	
0.22532	-0.00549	0.07425	0.09420				
KN31	KN31 Telecommunications			0.14568	0.26729	0.28204	-
0.14205	-0.26083	-0.17780	0.35981				
KN32	KN32 Communications and Media			-0.06126	0.43832	0.56045	-
0.42736	-0.50750	-0.37146	0.52626				
KN33	KN33 Transportation			0.11621	0.15053	0.09249	
0.15501	-0.02488	-0.03224	-0.04783				
sk3	SK3 Writing			0.06005	0.63233	0.66763	-
0.51605	-0.62610	-0.42016	0.71512				
sk4	SK4 Speaking			-0.01659	0.58938	0.72567	-
0.40478	-0.63376	-0.46749	0.60529				
sk27	SK27 Equipment selection			0.58054	0.45121	0.18453	
0.11705	0.22932	0.39931	0.24619				
sk28	SK28 Installation			0.55863	0.00156	-0.19561	
0.36083	0.43477	0.46111	-0.08718				
sk29	SK29 Programming			0.19471	0.42868	0.29736	-
0.32248	-0.27017	-0.13992	0.71892				
sk30	SK30 Testing			0.71363	0.32876	0.03670	
0.03354	0.14786	0.41405	0.29033				
sk31	SK31 Operation monitoring			0.62473	0.02762	-0.20202	
0.19196	0.35329	0.69757	-0.01969				
sk32	SK32 Operation and control			0.47222	-0.05275	-0.22734	
0.25020	0.43702	0.71124	-0.10614				
sk33	SK33 Product inspection			0.58968	0.32796	0.13024	-
0.01982	0.16622	0.28839	0.18446				
sk34	SK34 Equipment maintenance			0.59785	-0.11504	-0.29136	
0.44143	0.51393	0.62612	-0.25757				
sk35	SK35 Troubleshooting			0.70430	0.11292	-0.08266	
0.28226	0.32093	0.48158	0.02886				
sk36	SK36 Repairing			0.53128	-0.14039	-0.30203	
0.44875	0.49820	0.53619	-0.28267				
sk44	SK44 Management of financial resources			-0.01986	0.55757	0.70865	-
0.34369	-0.48968	-0.42225	0.42580				

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure

Correlations

				GWA4	GWA5	GWA14	
GWA16	GWA17	GWA18	GWA19				
sk45	SK45 Management of material resources			0.24986	0.59076	0.69285	-
0.16362	-0.30096	-0.19891	0.39851				

Correlations

				GWA20	GWA21	GWA22	
GWA23	GWA24	GWA25	GWA27				
GWA4	GWA4 Inspecting equipment, structures or materials			0.14714	0.54646	0.33435	
0.54901	0.54551	0.17388	0.14026				
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			-0.01290	0.50997	0.75093	-
0.10584	0.13230	0.65642	0.70817				
GWA14	GWA14 Scheduling work and activities			-0.08315	0.23390	0.61316	-
0.27929	-0.04261	0.60006	0.78059				
GWA16	GWA16 Performing general physical activities			0.40891	-0.05716	-0.23494	
0.45726	0.10703	-0.45475	-0.37285				
GWA17	GWA17 Handling and moving objects			0.18007	0.03685	-0.26324	
0.49741	0.18651	-0.52868	-0.58703				
GWA18	GWA18 Controlling machines and processes			0.23168	0.19201	-0.08178	
0.64205	0.32802	-0.27274	-0.31987				
GWA19	GWA19 Interacting with computers			-0.23650	0.38007	0.59615	-
0.28659	0.18499	0.74146	0.69207				
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			1.00000	-0.06319	-0.18085	
0.34336	0.07503	-0.16796	-0.09052				
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			-0.06319	1.00000	0.53327	
0.15164	0.30936	0.27898	0.31482				
GWA22	GWA22 Implementing ideas, programs, systems or products			-0.18085	0.53327	1.00000	-
0.08638	0.20231	0.62571	0.66287				
GWA23	GWA23 Repairing and maintaining mechanical equipment			0.34336	0.15164	-0.08638	
1.00000	0.48056	-0.26208	-0.30498				
GWA24	GWA24 Repairing and maintaining electronic equipment			0.07503	0.30936	0.20231	
0.48056	1.00000	0.10139	0.03115				
GWA25	GWA25 Documenting/recording information			-0.16796	0.27898	0.62571	-
0.26208	0.10139	1.00000	0.79582				
GWA27	GWA27 Communicating with supervisors, peers or subordinates			-0.09052	0.31482	0.66287	-
0.30498	0.03115	0.79582	1.00000				
GWA28	GWA28 Communicating with persons outside the organizations			-0.09935	0.15196	0.53786	-
0.43514	-0.07904	0.68690	0.75837				
GWA40	GWA40 Performing administrative activities			-0.14254	0.12332	0.52846	-
0.29901	-0.00949	0.77123	0.78189				
GWA41	GWA41 Staffing organizational units			-0.06187	0.08472	0.42125	-
0.19033	-0.07712	0.37658	0.56282				
KN2	KN2 Clerical			-0.16022	-0.07607	0.19413	-
0.30230	-0.03102	0.62298	0.48435				
KN3	KN3 Economics and Accounting			-0.07966	0.06976	0.35042	-
0.30921	-0.12359	0.49677	0.57031				
KN4	KN4 Sales and Marketing			-0.01438	0.07073	0.20313	-
0.24498	-0.08630	0.23148	0.33834				
KN5	KN5 Customer and Personal Service			-0.04604	-0.08537	0.12722	-
0.28188	-0.02791	0.24155	0.27965				
KN6	KN6 Personnel and Human Resources			-0.04539	0.06155	0.40505	-

0.24178	-0.08278	0.43728	0.60901			
KN7	KN7	Production and Processing		-0.08795	0.34722	0.09321
0.29267	0.10284	-0.10534	-0.14269			
KN8	KN8	Food Production		0.06190	0.02099	0.08806
0.06132	-0.10456	0.11546	0.08744			
KN9	KN9	Computers and Electronics		-0.10809	0.36474	0.43310
0.07042	0.54860	0.54941	0.49698			
KN10	KN10	Engineering and Technology		0.17982	0.62428	0.24664
0.52852	0.47325	0.03557	0.05088			
KN11	KN11	Design		-0.05115	0.76488	0.31619
0.22614	0.32938	0.02375	0.05096			
KN12	KN12	Building and Construction		0.15909	0.36731	0.08348
0.34668	0.12985	-0.23952	-0.14982			
KN13	KN13	Mechanical		0.34786	0.26451	-0.05903
0.83264	0.46278	-0.31713	-0.33774			
KN14	KN14	Mathematics		-0.12708	0.45012	0.56626
0.14241	0.11548	0.65161	0.63278			
KN16	KN16	Chemistry		-0.01651	0.21495	0.26562
0.15156	0.10387	0.21834	0.13751			
KN17	KN17	Biology		-0.05166	0.07467	0.33025
0.16485	-0.05430	0.35895	0.29939			
KN20	KN20	Geography		0.36470	0.08448	0.14493
0.11099	-0.03153	0.28553	0.29053			
KN21	KN21	Medicine and Dentistry		-0.02106	-0.02874	0.21884
0.12090	0.01320	0.24866	0.21332			
KN23	KN23	Education and Training		-0.03282	0.17779	0.51156
0.24688	0.00020	0.49317	0.61527			
KN29	KN29	Public Safety and Security		0.37431	0.13897	0.16879
0.16267	0.16311	0.23388	0.25402			
KN31	KN31	Telecommunications		0.11862	0.13425	0.19500
0.07943	0.40640	0.31824	0.35729			
KN32	KN32	Communications and Media		-0.10159	0.16977	0.44162
0.33939	-0.02122	0.52065	0.63325			
KN33	KN33	Transportation		0.63684	-0.02797	-0.05700
0.10644	0.01710	0.06816	0.10389			
sk3	SK3	Writing		-0.17619	0.26677	0.63446
0.36984	-0.01259	0.85529	0.82572			
sk4	SK4	Speaking		-0.09111	0.18906	0.57372
0.39283	-0.03732	0.73467	0.82910			
sk27	SK27	Equipment selection		0.00082	0.62779	0.49633
0.34115	0.35107	0.18901	0.21164			
sk28	SK28	Installation		0.07775	0.35732	0.11238
0.64835	0.59766	-0.19569	-0.20840			
sk29	SK29	Programming		-0.17802	0.45095	0.49592
0.17324	0.15625	0.49164	0.47085			
sk30	SK30	Testing		-0.01020	0.51793	0.41470
0.45948	0.57531	0.25409	0.15876			
sk31	SK31	Operation monitoring		0.25262	0.24336	0.03229
0.62329	0.46582	-0.02429	-0.12311			
sk32	SK32	Operation and control		0.32635	0.14673	-0.04646
0.57111	0.34801	-0.13685	-0.19807			
sk33	SK33	Product inspection		-0.14368	0.51132	0.39754
0.31823	0.31645	0.18252	0.12769			
sk34	SK34	Equipment maintenance		0.28153	0.15403	-0.07018
0.83102	0.53150	-0.25984	-0.32492			
sk35	SK35	Troubleshooting		0.23394	0.39958	0.14727
0.68816	0.63639	-0.02788	-0.06581			
sk36	SK36	Repairing		0.25470	0.15026	-0.07123
0.81880	0.55772	-0.30204	-0.35376			
sk44	SK44	Management of financial resources		-0.10280	0.17273	0.48138
0.32157	-0.09521	0.50970	0.62138			
sk45	SK45	Management of material resources		-0.02295	0.39113	0.55039
0.12267	0.04630	0.45352	0.57989			

Correlations

				GWA28	GWA40	GWA41
KN2	KN3	KN4	KN5			
GWA4	GWA4	Inspecting equipment, structures or materials		-0.08009	0.05590	0.03828
0.14353	-0.10653	-0.11210	-0.17292			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.57127	0.58417	0.45157
0.23258	0.48828	0.29481	0.15452			
GWA14	GWA14	Scheduling work and activities		0.70494	0.78360	0.72921
0.41789	0.59439	0.41955	0.39259			
GWA16	GWA16	Performing general physical activities		-0.39578	-0.42423	-0.21142
0.40739	-0.36529	-0.25330	-0.12473			
GWA17	GWA17	Handling and moving objects		-0.61865	-0.56422	-0.36541
0.41381	-0.49734	-0.35750	-0.26822			
GWA18	GWA18	Controlling machines and processes		-0.51662	-0.38166	-0.24896
0.38953	-0.44313	-0.35630	-0.40905			
GWA19	GWA19	Interacting with computers		0.57863	0.60295	0.30970
0.52252	0.43989	0.24235	0.21253			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		-0.09935	-0.14254	-0.06187
0.16022	-0.07966	-0.01438	-0.04604			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.15196	0.12332	0.08472
0.07607	0.06976	0.07073	-0.08537			
GWA22	GWA22	Implementing ideas, programs, systems or products		0.53786	0.52846	0.42125
0.19413	0.35042	0.20313	0.12722			
GWA23	GWA23	Repairing and maintaining mechanical equipment		-0.43514	-0.29901	-0.19033
0.30230	-0.30921	-0.24498	-0.28188			
GWA24	GWA24	Repairing and maintaining electronic equipment		-0.07904	-0.00949	-0.07712
0.03102	-0.12359	-0.08630	-0.02791			
GWA25	GWA25	Documenting/recording information		0.68690	0.77123	0.37658
0.62298	0.49677	0.23148	0.24155			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		0.75837	0.78189	0.56282
0.48435	0.57031	0.33834	0.27965			
GWA28	GWA28	Communicating with persons outside the organizations		1.00000	0.72215	0.44290
0.50337	0.59613	0.53510	0.53482			
GWA40	GWA40	Performing administrative activities		0.72215	1.00000	0.67059
0.63064	0.69788	0.43320	0.39227			
GWA41	GWA41	Staffing organizational units		0.44290	0.67059	1.00000
0.25264	0.51454	0.39217	0.28511			
KN2	KN2	Clerical		0.50337	0.63064	0.25264
1.00000	0.50974	0.27652	0.40661			
KN3	KN3	Economics and Accounting		0.59613	0.69788	0.51454
0.50974	1.00000	0.58714	0.39103			
KN4	KN4	Sales and Marketing		0.53510	0.43320	0.39217

0.27652	0.58714	1.00000	0.51333			
KN5	KN5 Customer and Personal Service			0.53482	0.39227	0.28511
0.40661	0.39103	0.51333	1.00000			
KN6	KN6 Personnel and Human Resources			0.48784	0.64645	0.79663
0.37968	0.60282	0.40711	0.38662			
KN7	KN7 Production and Processing			-0.35297	-0.15855	-0.04157
0.20883	-0.05361	-0.02929	-0.29876			
KN8	KN8 Food Production			0.12373	0.12119	0.14655
0.02094	0.12628	0.14450	0.02976			
KN9	KN9 Computers and Electronics			0.39995	0.40316	0.13554
0.45875	0.32770	0.18478	0.15592			
KN10	KN10 Engineering and Technology			-0.18279	-0.15448	-0.12224
0.21975	-0.10223	-0.14560	-0.28644			
KN11	KN11 Design			-0.06376	-0.10085	-0.07065
0.15793	0.00246	0.02304	-0.12431			
KN12	KN12 Building and Construction			-0.23360	-0.25321	-0.08982
0.30134	-0.07246	-0.10250	-0.23578			
KN13	KN13 Mechanical			-0.49928	-0.38346	-0.23502
0.37165	-0.30470	-0.25568	-0.32994			
KN14	KN14 Mathematics			0.48157	0.52371	0.28662
0.39728	0.58269	0.27030	0.11596			
KN16	KN16 Chemistry			0.07305	0.02854	-0.02901
0.03348	-0.11278	-0.11660	-0.05498			
KN17	KN17 Biology			0.35527	0.19405	0.08609
0.10671	0.03044	0.01566	0.16237			
KN20	KN20 Geography			0.33699	0.21273	0.12748
0.22522	0.28527	0.26217	0.20225			
KN21	KN21 Medicine and Dentistry			0.29529	0.16502	0.04636
0.15370	-0.00871	0.00794	0.35429			
KN23	KN23 Education and Training			0.59966	0.50733	0.45662
0.35268	0.41488	0.34364	0.41192			
KN29	KN29 Public Safety and Security			0.18047	0.16263	0.09995
0.11248	0.13782	0.05647	0.16442			
KN31	KN31 Telecommunications			0.35382	0.28421	0.12609
0.31902	0.25354	0.20407	0.24966			
KN32	KN32 Communications and Media			0.63942	0.52065	0.38954
0.45174	0.43726	0.43238	0.28563			
KN33	KN33 Transportation			0.09561	0.05822	0.02671
0.10733	0.14333	0.14087	0.14757			
sk3	SK3 Writing			0.77832	0.74087	0.44486
0.57313	0.53508	0.32304	0.27122			
sk4	SK4 Speaking			0.84278	0.71758	0.47593
0.54345	0.57610	0.43358	0.45746			
sk27	SK27 Equipment selection			-0.00466	0.04913	0.10557
0.12480	-0.03605	-0.07957	-0.18198			
sk28	SK28 Installation			-0.34740	-0.24416	-0.14117
0.30236	-0.25536	-0.17732	-0.22956			
sk29	SK29 Programming			0.34982	0.32003	0.13403
0.22477	0.21352	0.09600	0.02513			
sk30	SK30 Testing			-0.03878	0.02354	-0.03584
0.09589	-0.10412	-0.14817	-0.20923			
sk31	SK31 Operation monitoring			-0.37725	-0.17945	-0.15370
0.19944	-0.32917	-0.31673	-0.33304			
sk32	SK32 Operation and control			-0.42171	-0.22519	-0.16578
0.22056	-0.34708	-0.31228	-0.31171			

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure

Correlations

				GWA28	GWA40	GWA41
KN2	KN3	KN4	KN5			
sk33	SK33 Product inspection			-0.05731	0.10586	0.10800
0.03891	0.05839	-0.01854	-0.20639			
sk34	SK34 Equipment maintenance			-0.48773	-0.30071	-0.18239
0.32158	-0.37548	-0.29977	-0.29650			
sk35	SK35 Troubleshooting			-0.25185	-0.10865	-0.09099
0.20058	-0.18585	-0.18689	-0.22770			
sk36	SK36 Repairing			-0.45167	-0.31787	-0.20427
0.34463	-0.33620	-0.25278	-0.28179			
sk44	SK44 Management of financial resources			0.62591	0.72077	0.66450
0.39408	0.78015	0.54736	0.38785			
sk45	SK45 Management of material resources			0.48853	0.59579	0.60775
0.27687	0.51938	0.41990	0.30505			

Correlations

				KN6	KN7	KN8
KN9	KN10	KN11	KN12			
GWA4	GWA4 Inspecting equipment, structures or materials			0.02354	0.39855	0.01958
0.23922	0.64531	0.45840	0.33014			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.44908	0.07677	0.13273
0.42323	0.26850	0.30068	0.06058			
GWA14	GWA14 Scheduling work and activities			0.70547	-0.15085	0.12619
0.31056	-0.05713	-0.00742	-0.12829			
GWA16	GWA16 Performing general physical activities			-0.23893	0.05717	0.03142
0.38943	0.21106	0.04237	0.40678			
GWA17	GWA17 Handling and moving objects			-0.41639	0.32264	-0.05674
0.31559	0.24684	0.16007	0.32292			
GWA18	GWA18 Controlling machines and processes			-0.32728	0.43281	-0.04342
0.13996	0.48680	0.20987	0.28156			
GWA19	GWA19 Interacting with computers			0.34386	-0.08096	0.02500
0.72769	0.10763	0.16911	-0.21203			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			-0.04539	-0.08795	0.06190
0.10809	0.17982	-0.05115	0.15909			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.06155	0.34722	0.02099
0.36474	0.62428	0.76488	0.36731			
GWA22	GWA22 Implementing ideas, programs, systems or products			0.40505	0.09321	0.08806
0.43310	0.24664	0.31619	0.08348			
GWA23	GWA23 Repairing and maintaining mechanical equipment			-0.24178	0.29267	-0.06132
0.07042	0.52852	0.22614	0.34668			
GWA24	GWA24 Repairing and maintaining electronic equipment			-0.08278	0.10284	-0.10456
0.54860	0.47325	0.32938	0.12985			

GWA25	GWA25 Documenting/recording information			0.43728	-0.10534	0.11546
0.54941	0.03557	0.02375	-0.23952			
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.60901	-0.14269	0.08744
0.49698	0.05088	0.05096	-0.14982			
GWA28	GWA28 Communicating with persons outside the organizations			0.48784	-0.35297	0.12373
0.39995	-0.18279	-0.06376	-0.23360			
GWA40	GWA40 Performing administrative activities			0.64645	-0.15855	0.12119
0.40316	-0.15448	-0.10085	-0.25321			
GWA41	GWA41 Staffing organizational units			0.79663	-0.04157	0.14655
0.13554	-0.12224	-0.07065	-0.08982			
KN2	KN2 Clerical			0.37968	-0.20883	0.02094
0.45875	-0.21975	-0.15793	-0.30134			
KN3	KN3 Economics and Accounting			0.60282	-0.05361	0.12628
0.32770	-0.10223	0.00246	-0.07246			
KN4	KN4 Sales and Marketing			0.40711	-0.02929	0.14450
0.18478	-0.14560	0.02304	-0.10250			
KN5	KN5 Customer and Personal Service			0.38662	-0.29876	0.02976
0.15592	-0.28644	-0.12431	-0.23578			
KN6	KN6 Personnel and Human Resources			1.00000	-0.01114	0.14466
0.22747	-0.08364	-0.02121	-0.06693			
KN7	KN7 Production and Processing			-0.01114	1.00000	0.16788
0.05978	0.44057	0.42136	0.27078			
KN8	KN8 Food Production			0.14466	0.16788	1.00000
0.08180	-0.05862	-0.10300	-0.04959			
KN9	KN9 Computers and Electronics			0.22747	-0.05978	-0.08180
1.00000	0.28349	0.29583	-0.10775			
KN10	KN10 Engineering and Technology			-0.08364	0.44057	-0.05862
0.28349	1.00000	0.69630	0.53123			
KN11	KN11 Design			-0.02121	0.42136	-0.10300
0.29583	0.69630	1.00000	0.56115			
KN12	KN12 Building and Construction			-0.06693	0.27078	-0.04959
0.10775	0.53123	0.56115	1.00000			
KN13	KN13 Mechanical			-0.22455	0.43649	-0.07393
0.05194	0.70595	0.42223	0.54305			
KN14	KN14 Mathematics			0.39721	0.10362	0.06694
0.55113	0.33379	0.35576	0.06176			
KN16	KN16 Chemistry			-0.02866	0.18605	0.24525
0.02144	0.30176	0.09056	0.03946			
KN17	KN17 Biology			0.10406	-0.13366	0.41390
0.04963	-0.02680	-0.10504	-0.13056			
KN20	KN20 Geography			0.17832	-0.18947	0.05271
0.23182	0.07082	0.08371	0.00849			
KN21	KN21 Medicine and Dentistry			0.10578	-0.20378	0.08721
0.08244	-0.09995	-0.13027	-0.16075			
KN23	KN23 Education and Training			0.57946	-0.13085	0.12879
0.35552	-0.00808	0.03477	-0.11085			
KN29	KN29 Public Safety and Security			0.21860	0.01749	0.07144
0.18096	0.31343	0.13749	0.21387			
KN31	KN31 Telecommunications			0.21287	-0.18611	-0.04315
0.60041	0.17208	0.14272	-0.06671			
KN32	KN32 Communications and Media			0.42353	-0.14482	0.03331
0.47133	-0.08284	0.03661	-0.19159			
KN33	KN33 Transportation			0.11706	-0.04821	0.09878
0.05188	0.12141	-0.01981	0.07191			
sk3	SK3 Writing			0.50271	-0.17943	0.12199
0.54286	-0.03190	0.01632	-0.23212			
sk4	SK4 Speaking			0.57948	-0.26226	0.10076
0.47337	-0.07403	-0.01079	-0.20128			
sk27	SK27 Equipment selection			0.06500	0.35989	0.06635
0.26326	0.61475	0.51689	0.35614			
sk28	SK28 Installation			-0.17809	0.30312	-0.07341
0.14330	0.57125	0.45188	0.47368			
sk29	SK29 Programming			0.18633	0.01222	0.04473
0.57776	0.23153	0.26319	-0.04558			
sk30	SK30 Testing			-0.03850	0.34389	0.04104
0.41590	0.66474	0.46247	0.23560			
sk31	SK31 Operation monitoring			-0.18755	0.38406	-0.03735
0.15129	0.56288	0.21478	0.13525			
sk32	SK32 Operation and control			-0.20506	0.34478	-0.07361
0.05234	0.46927	0.15106	0.15393			
sk33	SK33 Product inspection			0.09717	0.49998	0.10762
0.25304	0.50919	0.50503	0.31237			
sk34	SK34 Equipment maintenance			-0.22924	0.33136	-0.05125
0.02926	0.48989	0.21307	0.29807			
sk35	SK35 Troubleshooting			-0.11623	0.30497	-0.04999
0.27606	0.67122	0.41107	0.32645			
sk36	SK36 Repairing			-0.25253	0.25586	-0.07322
0.01027	0.49079	0.25050	0.37154			
sk44	SK44 Management of financial resources			0.68788	-0.05770	0.16248
0.29986	-0.08842	0.04355	-0.06856			
sk45	SK45 Management of material resources			0.59546	0.11369	0.16045
0.29305	0.18269	0.23850	0.07921			

Correlations

				KN13	KN14	KN16
KN17	KN20	KN21	KN23			
GWA4	GWA4 Inspecting equipment, structures or materials			0.59317	0.22566	0.35073
0.08634	-0.00753	0.04245	0.01117			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			-0.06577	0.65622	0.25782
0.29199	0.35200	0.14634	0.46876			
GWA14	GWA14 Scheduling work and activities			-0.31645	0.46247	0.07585
0.24409	0.22186	0.18456	0.62688			
GWA16	GWA16 Performing general physical activities			0.50006	-0.34807	0.08133
0.00024	-0.04250	0.05390	-0.20998			
GWA17	GWA17 Handling and moving objects			0.55851	-0.35848	0.13793
0.09445	-0.25307	-0.01694	-0.35909			
GWA18	GWA18 Controlling machines and processes			0.65968	-0.15602	0.32429
0.01468	-0.22631	-0.02789	-0.31659			
GWA19	GWA19 Interacting with computers			-0.30673	0.67045	0.10679
0.21293	0.21480	0.10966	0.43273			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			0.34786	-0.12708	-0.01651
0.05166	0.36470	-0.02106	-0.03282			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.26451	0.45012	0.21495
0.07467	0.08448	-0.02874	0.17779			
GWA22	GWA22 Implementing ideas, programs, systems or products			-0.05903	0.56626	0.26562
0.33025	0.14493	0.21884	0.51156			

GWA23	GWA23	Repairing and maintaining mechanical equipment		0.83264	-0.14241	0.15156	-
0.16485	-0.11099	-0.12090	-0.24688				
GWA24	GWA24	Repairing and maintaining electronic equipment		0.46278	0.11548	0.10387	-
0.05430	-0.03153	0.01320	0.00020				
GWA25	GWA25	Documenting/recording information		-0.31713	0.65161	0.21834	
0.35895	0.28553	0.24866	0.49317				
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.33774	0.63278	0.13751	
0.29939	0.29053	0.21332	0.61527				
GWA28	GWA28	Communicating with persons outside the organizations		-0.49928	0.48157	0.07305	
0.35527	0.33699	0.29529	0.59966				
GWA40	GWA40	Performing administrative activities		-0.38346	0.52371	0.02854	
0.19405	0.21273	0.16502	0.50733				
GWA41	GWA41	Staffing organizational units		-0.23502	0.28662	-0.02901	
0.08609	0.12748	0.04636	0.45662				
KN2	KN2	Clerical		-0.37165	0.39728	-0.03348	
0.10671	0.22522	0.15370	0.35268				
KN3	KN3	Economics and Accounting		-0.30470	0.58269	-0.11278	
0.03044	0.28527	-0.00871	0.41488				
KN4	KN4	Sales and Marketing		-0.25568	0.27030	-0.11660	
0.01566	0.26217	0.00794	0.34364				
KN5	KN5	Customer and Personal Service		-0.32994	0.11596	-0.05498	
0.16237	0.20225	0.35429	0.41192				
KN6	KN6	Personnel and Human Resources		-0.22455	0.39721	-0.02866	
0.10406	0.17832	0.10578	0.57946				
KN7	KN7	Production and Processing		0.43649	0.10362	0.18605	-
0.13366	-0.18947	-0.20378	-0.13085				
KN8	KN8	Food Production		-0.07393	0.06694	0.24525	
0.41390	0.05271	0.08721	0.12879				
KN9	KN9	Computers and Electronics		-0.05194	0.55113	0.02144	
0.04963	0.23182	0.08244	0.35552				
KN10	KN10	Engineering and Technology		0.70595	0.33379	0.30176	-
0.02680	0.07082	-0.09995	-0.00808				
KN11	KN11	Design		0.42223	0.35576	0.09056	-
0.10504	0.08371	-0.13027	0.03477				
KN12	KN12	Building and Construction		0.54305	0.06176	0.03946	-
0.13056	0.00849	-0.16075	-0.11085				
KN13	KN13	Mechanical		1.00000	-0.07595	0.16833	-
0.18317	-0.07994	-0.13633	-0.23297				
KN14	KN14	Mathematics		-0.07595	1.00000	0.21968	
0.22536	0.27135	0.07752	0.45544				
KN16	KN16	Chemistry		0.16833	0.21968	1.00000	
0.63416	0.00301	0.42249	0.13822				
KN17	KN17	Biology		-0.18317	0.22536	0.63416	
1.00000	0.06965	0.67855	0.31974				
KN20	KN20	Geography		-0.07994	0.27135	0.00301	
0.06965	1.00000	-0.00313	0.24950				
KN21	KN21	Medicine and Dentistry		-0.13633	0.07752	0.42249	
0.67855	-0.00313	1.00000	0.34440				
KN23	KN23	Education and Training		-0.23297	0.45544	0.13822	
0.31974	0.24950	0.34440	1.00000				
KN29	KN29	Public Safety and Security		0.26546	0.19887	0.24241	
0.14628	0.39417	0.23251	0.26323				
KN31	KN31	Telecommunications		-0.02629	0.27312	-0.03598	
0.01270	0.39087	0.08049	0.29224				
KN32	KN32	Communications and Media		-0.36906	0.38864	0.00350	
0.13081	0.37083	0.11947	0.53181				
KN33	KN33	Transportation		0.14887	0.09442	-0.03566	-
0.01796	0.57221	0.02245	0.09827				
sk3	SK3	Writing		-0.41433	0.63116	0.15932	
0.36956	0.29029	0.26995	0.61753				
sk4	SK4	Speaking		-0.41184	0.56129	0.09604	
0.33798	0.33928	0.33949	0.71587				
sk27	SK27	Equipment selection		0.43828	0.36031	0.40749	
0.25493	-0.02064	0.13826	0.16709				

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
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Correlations

				KN13	KN14	KN16
KN17	KN20	KN21	KN23			
sk28	SK28	Installation		0.69795	-0.01088	0.10797
0.14024	-0.15900	-0.11348	-0.14750			
sk29	SK29	Programming		-0.12619	0.56091	0.11432
0.18753	0.09675	0.04531	0.32372			
sk30	SK30	Testing		0.53011	0.36576	0.41752
0.18461	-0.05826	0.10927	0.12494			
sk31	SK31	Operation monitoring		0.66741	0.02910	0.30605
0.01113	-0.07852	0.01170	-0.15650			
sk32	SK32	Operation and control		0.62402	-0.07233	0.23115
0.05902	-0.06387	0.01752	-0.20212			
sk33	SK33	Product inspection		0.42292	0.31512	0.30173
0.05797	-0.09695	-0.02485	0.10547			
sk34	SK34	Equipment maintenance		0.78578	-0.17515	0.15597
0.14727	-0.16397	-0.10486	-0.25345			
sk35	SK35	Troubleshooting		0.72784	0.11191	0.19888
0.08694	-0.04350	-0.07357	-0.06100			
sk36	SK36	Repairing		0.78708	-0.17597	0.10308
0.18136	-0.15620	-0.14368	-0.26133			
sk44	SK44	Management of financial resources		-0.31633	0.49507	-0.02624
0.15790	0.19751	0.11995	0.51686			
sk45	SK45	Management of material resources		-0.05812	0.47527	0.14597
0.23306	0.20363	0.16252	0.52878			

Correlations

				KN29	KN31	KN32
KN33	sk3	sk4	sk27			
GWA4	GWA4	Inspecting equipment, structures or materials		0.35601	0.14568	-0.06126
0.11621	0.06005	-0.01659	0.58054			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.28280	0.26729	0.43832
0.15053	0.63233	0.58938	0.45121			

GWA14	GWA14	Scheduling work and activities	0.17272	0.28204	0.56045	
0.09249		0.66763 0.72567 0.18453				
GWA16	GWA16	Performing general physical activities	0.22532	-0.14205	-0.42736	
0.15501		-0.51605 -0.40478 0.11705				
GWA17	GWA17	Handling and moving objects	-0.00549	-0.26083	-0.50750	-
0.02488		-0.62610 -0.63376 0.22932				
GWA18	GWA18	Controlling machines and processes	0.07425	-0.17780	-0.37146	-
0.03224		-0.42016 -0.46749 0.39931				
GWA19	GWA19	Interacting with computers	0.09420	0.35981	0.52626	-
0.04783		0.71512 0.60529 0.24619				
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment	0.37431	0.11862	-0.10159	-
0.63684		-0.17619 -0.09111 0.00082				
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.13897	0.13425	0.16977	-
0.02797		0.26677 0.18906 0.62779				
GWA22	GWA22	Implementing ideas, programs, systems or products	0.16879	0.19500	0.44162	-
0.05700		0.63446 0.57372 0.49633				
GWA23	GWA23	Repairing and maintaining mechanical equipment	0.16267	-0.07943	-0.33939	-
0.10644		-0.36984 -0.39283 0.34115				
GWA24	GWA24	Repairing and maintaining electronic equipment	0.16311	0.40640	-0.02122	-
0.01710		-0.01259 -0.03732 0.35107				
GWA25	GWA25	Documenting/recording information	0.23388	0.31824	0.52065	-
0.06816		0.85529 0.73467 0.18901				
GWA27	GWA27	Communicating with supervisors, peers or subordinates	0.25402	0.35729	0.63325	-
0.10389		0.82572 0.82910 0.21164				
GWA28	GWA28	Communicating with persons outside the organizations	0.18047	0.35382	0.63942	-
0.09561		0.77832 0.84278 -0.00466				
GWA40	GWA40	Performing administrative activities	0.16263	0.28421	0.52065	-
0.05822		0.74087 0.71758 0.04913				
GWA41	GWA41	Staffing organizational units	0.09995	0.12609	0.38954	-
0.02671		0.44486 0.47593 0.10557				
KN2	KN2	Clerical	0.11248	0.31902	0.45174	-
0.10733		0.57313 0.54345 -0.12480				
KN3	KN3	Economics and Accounting	0.13782	0.25354	0.43726	-
0.14333		0.53508 0.57610 -0.03605				
KN4	KN4	Sales and Marketing	0.05647	0.20407	0.43238	-
0.14087		0.32304 0.43358 -0.07957				
KN5	KN5	Customer and Personal Service	0.16442	0.24966	0.28563	-
0.14757		0.27122 0.45746 -0.18198				
KN6	KN6	Personnel and Human Resources	0.21860	0.21287	0.42353	-
0.11706		0.50271 0.57948 0.06500				
KN7	KN7	Production and Processing	0.01749	-0.18611	-0.14482	-
0.04821		-0.17943 -0.26226 0.35989				
KN8	KN8	Food Production	0.07144	-0.04315	0.03331	-
0.09878		0.12199 0.10076 0.06635				
KN9	KN9	Computers and Electronics	0.18096	0.60041	0.47133	-
0.05188		0.54286 0.47337 0.26326				
KN10	KN10	Engineering and Technology	0.31343	0.17208	-0.08284	-
0.12141		-0.03190 -0.07403 0.61475				
KN11	KN11	Design	0.13749	0.14272	0.03661	-
0.01981		0.01632 -0.01079 0.51689				
KN12	KN12	Building and Construction	0.21387	-0.06671	-0.19159	-
0.07191		-0.23212 -0.20128 0.35614				
KN13	KN13	Mechanical	0.26546	-0.02629	-0.36906	-
0.14887		-0.41433 -0.41184 0.43828				
KN14	KN14	Mathematics	0.19887	0.27312	0.38864	-
0.09442		0.63116 0.56129 0.36031				
KN16	KN16	Chemistry	0.24241	-0.03598	0.00350	-
0.03566		0.15932 0.09604 0.40749				
KN17	KN17	Biology	0.14628	0.01270	0.13081	-
0.01796		0.36956 0.33798 0.25493				
KN20	KN20	Geography	0.39417	0.39087	0.37083	-
0.57221		0.29029 0.33928 -0.02064				
KN21	KN21	Medicine and Dentistry	0.23251	0.08049	0.11947	-
0.02245		0.26995 0.33949 0.13826				
KN23	KN23	Education and Training	0.26323	0.29224	0.53181	-
0.09827		0.61753 0.71587 0.16709				
KN29	KN29	Public Safety and Security	1.00000	0.32990	0.15903	-
0.48684		0.16678 0.25575 0.15249				
KN31	KN31	Telecommunications	0.32990	1.00000	0.48026	-
0.30001		0.32456 0.40566 0.10419				
KN32	KN32	Communications and Media	0.15903	0.48026	1.00000	-
0.13257		0.66131 0.66469 0.01977				
KN33	KN33	Transportation	0.48684	0.30001	0.13257	-
1.00000		0.03708 0.13469 -0.03214				
sk3	SK3	Writing	0.16678	0.32456	0.66131	-
0.03708		1.00000 0.85356 0.17046				
sk4	SK4	Speaking	0.25575	0.40566	0.66469	-
0.13469		0.85356 1.00000 0.09926				
sk27	SK27	Equipment selection	0.15249	0.10419	0.01977	-
0.03214		0.17046 0.09926 1.00000				
sk28	SK28	Installation	0.07330	0.06373	-0.27838	-
0.06959		-0.26582 -0.28294 0.50287				
sk29	SK29	Programming	0.02158	0.23881	0.29598	-
0.10431		0.50515 0.39629 0.36795				
sk30	SK30	Testing	0.26117	0.19612	-0.02211	-
0.04149		0.17729 0.07565 0.65387				
sk31	SK31	Operation monitoring	0.23153	0.08758	-0.22051	-
0.11692		-0.16397 -0.23752 0.45237				
sk32	SK32	Operation and control	0.17888	0.05003	-0.23929	-
0.12788		-0.25625 -0.30130 0.40513				
sk33	SK33	Product inspection	0.13406	0.03872	0.02848	-
0.13793		0.16781 0.05239 0.58882				
sk34	SK34	Equipment maintenance	0.12785	-0.02822	-0.40057	-
0.06052		-0.38256 -0.41767 0.37998				
sk35	SK35	Troubleshooting	0.25630	0.20572	-0.19440	-
0.08689		-0.10695 -0.14902 0.53360				
sk36	SK36	Repairing	0.07383	-0.00424	-0.40369	-
0.01948		-0.38253 -0.40991 0.35997				
sk44	SK44	Management of financial resources	0.09885	0.22522	0.45368	-
0.06598		0.61365 0.63679 0.10844				
sk45	SK45	Management of material resources	0.21744	0.23978	0.38789	-
0.11022		0.54715 0.56792 0.42277				

Correlations

sk31	sk32	sk33	sk34	sk28	sk29	sk30
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GWA4	GWA4	Inspecting equipment, structures or materials	0.55863	0.19471	0.71363	
0.62473	0.47222	0.58968	0.59785			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information	0.00156	0.42868	0.32876	
0.02762	-0.05275	0.32796	-0.11504			
GWA14	GWA14	Scheduling work and activities	-0.19561	0.29736	0.03670	-
0.20202	-0.22734	0.13024	-0.29136			
GWA16	GWA16	Performing general physical activities	0.36083	-0.32248	0.03354	
0.19196	0.25020	-0.01982	0.44143			
GWA17	GWA17	Handling and moving objects	0.43477	-0.27017	0.14786	
0.35329	0.43702	0.16622	0.51393			
GWA18	GWA18	Controlling machines and processes	0.46111	-0.13992	0.41405	
0.69757	0.71124	0.28839	0.62612			
GWA19	GWA19	Interacting with computers	-0.08718	0.71892	0.29033	-
0.01969	-0.10614	0.18446	-0.25757			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment	0.07775	-0.17802	-0.01020	
0.25262	0.32635	-0.14368	0.28153			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.35732	0.45095	0.51793	
0.24336	0.14673	0.51132	0.15403			
GWA22	GWA22	Implementing ideas, programs, systems or products	0.11238	0.49592	0.41470	
0.03229	-0.04646	0.39754	-0.07018			
GWA23	GWA23	Repairing and maintaining mechanical equipment	0.64835	-0.17324	0.45948	
0.62329	0.57111	0.31823	0.83102			
GWA24	GWA24	Repairing and maintaining electronic equipment	0.59766	0.15625	0.57531	
0.46582	0.34801	0.31645	0.53150			
GWA25	GWA25	Documenting/recording information	-0.19569	0.49164	0.25409	-
0.02429	-0.13685	0.18252	-0.25984			
GWA27	GWA27	Communicating with supervisors, peers or subordinates	-0.20840	0.47085	0.15876	-
0.12311	-0.19807	0.12769	-0.32492			
GWA28	GWA28	Communicating with persons outside the organizations	-0.34740	0.34982	-0.03878	-
0.37725	-0.42171	-0.05731	-0.48773			
GWA40	GWA40	Performing administrative activities	-0.24416	0.32003	0.02354	-
0.17945	-0.22519	0.10586	-0.30071			
GWA41	GWA41	Staffing organizational units	-0.14117	0.13403	-0.03584	-
0.15370	-0.16578	0.10800	-0.18239			
KN2	KN2	Clerical	-0.30236	0.22477	-0.09589	-
0.19944	-0.22056	-0.03891	-0.32158			
KN3	KN3	Economics and Accounting	-0.25536	0.21352	-0.10412	-
0.32917	-0.34708	0.05839	-0.37548			
KN4	KN4	Sales and Marketing	-0.17732	0.09600	-0.14817	-
0.31673	-0.31228	-0.01854	-0.29977			
KN5	KN5	Customer and Personal Service	-0.22956	0.02513	-0.20923	-
0.33304	-0.31171	-0.20639	-0.29650			
KN6	KN6	Personnel and Human Resources	-0.17809	0.18633	-0.03850	-
0.18755	-0.20506	0.09717	-0.22924			
KN7	KN7	Production and Processing	0.30312	0.01222	0.34389	
0.38406	0.34478	0.49998	0.33136			
KN8	KN8	Food Production	-0.07341	0.04473	0.04104	-
0.03735	-0.07361	0.10762	-0.05125			
KN9	KN9	Computers and Electronics	0.14330	0.57776	0.41590	
0.15129	0.05234	0.25304	-0.02926			
KN10	KN10	Engineering and Technology	0.57125	0.23153	0.66474	
0.56288	0.46927	0.50919	0.48989			
KN11	KN11	Design	0.45188	0.26319	0.46247	
0.21478	0.15106	0.50503	0.21307			
KN12	KN12	Building and Construction	0.47368	-0.04558	0.23560	
0.13525	0.15393	0.31237	0.29807			
KN13	KN13	Mechanical	0.69795	-0.12619	0.53011	
0.66741	0.62402	0.42292	0.78578			
KN14	KN14	Mathematics	-0.01088	0.56091	0.36576	
0.02910	-0.07233	0.31512	-0.17515			
KN16	KN16	Chemistry	0.10797	0.11432	0.41752	
0.30605	0.23115	0.30173	0.15597			
KN17	KN17	Biology	-0.14024	0.18753	0.18461	-
0.01113	-0.05902	0.05797	-0.14727			
KN20	KN20	Geography	-0.15900	0.09675	-0.05826	-
0.07852	-0.06387	-0.09695	-0.16397			
KN21	KN21	Medicine and Dentistry	-0.11348	0.04531	0.10927	
0.01170	0.01752	-0.02485	-0.10486			
KN23	KN23	Education and Training	-0.14750	0.32372	0.12494	-
0.15650	-0.20212	0.10547	-0.25345			
KN29	KN29	Public Safety and Security	0.07330	0.02158	0.26117	
0.23153	0.17888	0.13406	0.12785			
KN31	KN31	Telecommunications	0.06373	0.23881	0.19612	
0.08758	0.05003	0.03872	-0.02822			

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Correlations

				sk28	sk29	sk30
sk31	sk32	sk33	sk34			
KN32	KN32	Communications and Media		-0.27838	0.29598	-0.02211
0.22051	-0.23929	0.02848	-0.40057			
KN33	KN33	Transportation		-0.06959	-0.10431	-0.04149
0.11692	0.12788	-0.13793	0.06052			
sk3	SK3	Writing		-0.26582	0.50515	0.17729
0.16397	-0.25625	0.16781	-0.38256			
sk4	SK4	Speaking		-0.28294	0.39629	0.07565
0.23752	-0.30130	0.05239	-0.41767			
sk27	SK27	Equipment selection		0.50287	0.36795	0.65387
0.45237	0.40513	0.58882	0.37998			
sk28	SK28	Installation		1.00000	0.09589	0.59406
0.51435	0.45590	0.45713	0.72537			
sk29	SK29	Programming		0.09589	1.00000	0.39811
0.10157	0.02731	0.23313	-0.09202			
sk30	SK30	Testing		0.59406	0.39811	1.00000
0.64211	0.46879	0.65162	0.51641			
sk31	SK31	Operation monitoring		0.51435	0.10157	0.64211
1.00000	0.86455	0.41012	0.72793			
sk32	SK32	Operation and control		0.45590	0.02731	0.46879
0.86455	1.00000	0.33634	0.66699			
sk33	SK33	Product inspection		0.45713	0.23313	0.65162
0.41012	0.33634	1.00000	0.37246			

sk34	SK34	Equipment maintenance			0.72537	-0.09202	0.51641	
0.72793		0.66699	0.37246	1.00000				
sk35	SK35	Troubleshooting			0.75125	0.19768	0.74626	
0.71921		0.60926	0.52486	0.79273				
sk36	SK36	Repairing			0.77425	-0.09356	0.49015	
0.59960		0.55659	0.35486	0.88797				
sk44	SK44	Management of financial resources			-0.18460	0.30393	-0.03544	-
0.27772		-0.27572	0.12578	-0.31859				
sk45	SK45	Management of material resources			0.06637	0.34191	0.23125	-
0.02341		-0.03233	0.34880	-0.06555				

Correlations

sk44	sk45		sk35	sk36
-0.01986	GWA4	GWA4 Inspecting equipment, structures or materials	0.70430	0.53128
	0.24986			
0.55757	GWA5	GWA5 Estimating the characteristics of materials, products, events or information	0.11292	-0.14039
	0.59076			
0.70865	GWA14	GWA14 Scheduling work and activities	-0.08266	-0.30203
	0.69285			
-0.34369	GWA16	GWA16 Performing general physical activities	0.28226	0.44875
	-0.16362			
-0.48968	GWA17	GWA17 Handling and moving objects	0.32093	0.49820
	-0.30096			
-0.42225	GWA18	GWA18 Controlling machines and processes	0.48158	0.53619
	-0.19891			
0.42580	GWA19	GWA19 Interacting with computers	0.02886	-0.28267
	0.39851			
-0.10280	GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.23394	0.25470
	-0.02295			
0.17273	GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.39958	0.15026
	0.39113			
0.48138	GWA22	GWA22 Implementing ideas, programs, systems or products	0.14727	-0.07123
	0.55039			
-0.32157	GWA23	GWA23 Repairing and maintaining mechanical equipment	0.68816	0.81880
	-0.12267			
-0.09521	GWA24	GWA24 Repairing and maintaining electronic equipment	0.63639	0.55772
	0.04630			
0.50970	GWA25	GWA25 Documenting/recording information	-0.02788	-0.30204
	0.45352			
0.62138	GWA27	GWA27 Communicating with supervisors, peers or subordinates	-0.06581	-0.35376
	0.57989			
0.62591	GWA28	GWA28 Communicating with persons outside the organizations	-0.25185	-0.45167
	0.48853			
0.72077	GWA40	GWA40 Performing administrative activities	-0.10865	-0.31787
	0.59579			
0.66450	GWA41	GWA41 Staffing organizational units	-0.09099	-0.20427
	0.60775			
0.39408	KN2	KN2 Clerical	-0.20058	-0.34463
	0.27687			
0.78015	KN3	KN3 Economics and Accounting	-0.18585	-0.33620
	0.51938			
0.54736	KN4	KN4 Sales and Marketing	-0.18689	-0.25278
	0.41990			
0.38785	KN5	KN5 Customer and Personal Service	-0.22770	-0.28179
	0.30505			
0.68788	KN6	KN6 Personnel and Human Resources	-0.11623	-0.25253
	0.59546			
-0.05770	KN7	KN7 Production and Processing	0.30497	0.25586
	0.11369			
0.16248	KN8	KN8 Food Production	-0.04999	-0.07322
	0.16045			
0.29986	KN9	KN9 Computers and Electronics	0.27606	-0.01027
	0.29305			
-0.08842	KN10	KN10 Engineering and Technology	0.67122	0.49079
	0.18269			
0.04355	KN11	KN11 Design	0.41107	0.25050
	0.23850			
-0.06856	KN12	KN12 Building and Construction	0.32645	0.37154
	0.07921			
-0.31633	KN13	KN13 Mechanical	0.72784	0.78708
	-0.05812			
0.49507	KN14	KN14 Mathematics	0.11191	-0.17597
	0.47527			
-0.02624	KN16	KN16 Chemistry	0.19888	0.10308
	0.14597			
0.15790	KN17	KN17 Biology	-0.08694	-0.18136
	0.23306			
0.19751	KN20	KN20 Geography	-0.04350	-0.15620
	0.20363			
0.11995	KN21	KN21 Medicine and Dentistry	-0.07357	-0.14368
	0.16252			
0.51686	KN23	KN23 Education and Training	-0.06100	-0.26133
	0.52878			
0.09885	KN29	KN29 Public Safety and Security	0.25630	0.07383
	0.21744			
0.22522	KN31	KN31 Telecommunications	0.20572	-0.00424
	0.23978			
0.45368	KN32	KN32 Communications and Media	-0.19440	-0.40369
	0.38789			
0.06598	KN33	KN33 Transportation	0.08689	0.01948
	0.11022			
0.61365	sk3	SK3 Writing	-0.10695	-0.38253
	0.54715			
0.63679	sk4	SK4 Speaking	-0.14902	-0.40991
	0.56792			
0.10844	sk27	SK27 Equipment selection	0.53360	0.35997
	0.42277			
-0.18460	sk28	SK28 Installation	0.75125	0.77425
	0.06637			
0.30393	sk29	SK29 Programming	0.19768	-0.09356
	0.34191			
-0.03544	sk30	SK30 Testing	0.74626	0.49015
	0.23125			
-0.27772	sk31	SK31 Operation monitoring	0.71921	0.59960
	-0.02341			

-0.27572	sk32	SK32	Operation and control	0.60926	0.55659
	-0.03233				
0.12578	sk33	SK33	Product inspection	0.52486	0.35486
	0.34880				
-0.31859	sk34	SK34	Equipment maintenance	0.79273	0.88797
	-0.06555				
-0.13430	sk35	SK35	Troubleshooting	1.00000	0.77821
	0.14181				
-0.28957	sk36	SK36	Repairing	0.77821	1.00000
	-0.07220				
1.00000	sk44	SK44	Management of financial resources	-0.13430	-0.28957
	0.76330				
0.76330	sk45	SK45	Management of material resources	0.14181	-0.07220
	1.00000				

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Initial Factor Method: Principal Factors

Prior Communality Estimates: SMC

GWA4	GWA5	GWA14	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22
GWA23	GWA24	GWA25	GWA27						
0.75960223	0.77485172	0.83046630	0.69009344	0.73115961	0.76696607	0.82900899	0.64585578	0.78443668	0.75492633
0.83160303	0.75903258	0.87705471	0.86951933						
GWA28	GWA40	GWA41	KN2	KN3	KN4	KN5	KN6	KN7	KN8
KN9	KN10	KN11	KN12						
0.85614884	0.87497489	0.78587755	0.69932424	0.81486391	0.59062295	0.63437981	0.77902595	0.63051469	0.41208402
0.83262188	0.82726280	0.80118292	0.63077623						
KN13	KN14	KN16	KN17	KN20	KN21	KN23	KN29	KN31	KN32
KN33	sk3	sk4	sk27						
0.88664775	0.75740333	0.62086697	0.77308722	0.57314989	0.66656146	0.65266717	0.56926965	0.61679328	0.68740946
0.64815782	0.89691307	0.87864229	0.71907466						
sk36	sk28	sk29	sk30	sk31	sk32	sk33	sk34	sk35	
	sk44	sk45							
	0.76630411	0.68391340	0.82814972	0.87636153	0.83114317	0.66728053	0.88850053	0.86522987	
0.87584330	0.84504486	0.79077111							

Eigenvalues of the Reduced Correlation Matrix: Total = 39.9394236 Average = 0.75357403

	Eigenvalue	Difference	Proportion	Cumulative
1	15.0844864	4.7334969	0.3777	0.3777
2	10.3509895	7.4475588	0.2592	0.6369
3	2.9034307	0.4555177	0.0727	0.7095
4	2.4479131	0.0890121	0.0613	0.7708
5	2.3589009	0.5583791	0.0591	0.8299
6	1.8005218	0.5035997	0.0451	0.8750
7	1.2969221	0.4604371	0.0325	0.9075
8	0.8364850	0.1362523	0.0209	0.9284
9	0.7002327	0.0839714	0.0175	0.9459
10	0.6162613	0.0686228	0.0154	0.9614
11	0.5476385	0.0573123	0.0137	0.9751
12	0.4903262	0.0596009	0.0123	0.9873
13	0.4307253	0.0814804	0.0108	0.9981
14	0.3492449	0.0151797	0.0087	1.0069
15	0.3340652	0.0279681	0.0084	1.0152
16	0.3060971	0.0827382	0.0077	1.0229
17	0.2233588	0.0255614	0.0056	1.0285
18	0.1977974	0.0286952	0.0050	1.0334
19	0.1691023	0.0445070	0.0042	1.0377
20	0.1245953	0.0282868	0.0031	1.0408
21	0.0963085	0.0150432	0.0024	1.0432
22	0.0812653	0.0205134	0.0020	1.0452
23	0.0607519	0.0130901	0.0015	1.0468
24	0.0476618	0.0052372	0.0012	1.0480
25	0.0424246	0.0309441	0.0011	1.0490
26	0.0114806	0.0053277	0.0003	1.0493
27	0.0061529	0.0090565	0.0002	1.0495
28	-0.0029036	0.0050560	-0.0001	1.0494
29	-0.0079596	0.0150437	-0.0002	1.0492
30	-0.0230033	0.0033136	-0.0006	1.0486
31	-0.0263168	0.0069554	-0.0007	1.0480
32	-0.0332722	0.0020107	-0.0008	1.0471
33	-0.0352830	0.0050083	-0.0009	1.0462
34	-0.0402913	0.0033460	-0.0010	1.0452
35	-0.0436373	0.0082090	-0.0011	1.0441
36	-0.0518463	0.0024003	-0.0013	1.0428
37	-0.0542466	0.0055297	-0.0014	1.0415
38	-0.0597763	0.0012595	-0.0015	1.0400
39	-0.0610358	0.0056167	-0.0015	1.0385
40	-0.0666525	0.0051898	-0.0017	1.0368
41	-0.0718424	0.0031506	-0.0018	1.0350
42	-0.0749930	0.0042443	-0.0019	1.0331
43	-0.0792373	0.0053153	-0.0020	1.0311
44	-0.0845526	0.0028316	-0.0021	1.0290
45	-0.0873842	0.0174283	-0.0022	1.0268
46	-0.1048125	0.0089667	-0.0026	1.0242
47	-0.1137791	0.0017466	-0.0028	1.0214
48	-0.1155257	0.0063466	-0.0029	1.0185
49	-0.1218723	0.0090631	-0.0031	1.0154
50	-0.1309354	0.0099882	-0.0033	1.0121
51	-0.1409237	0.0275539	-0.0035	1.0086
52	-0.1684776	0.0066787	-0.0042	1.0044
53	-0.1751563		-0.0044	1.0000

8 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

7	8		1	2	3	4	5	6
0.11402	-0.04592	1	-0.43427	0.68395	0.55121	-0.02390	0.14214	0.06256
0.05067	0.06050	2	0.77003	0.23960	0.29301	0.47133	0.15749	0.10301
0.20968	-0.11594	3	0.15565	0.27268	-0.36723	-0.29464	-0.01480	0.78875
0.19792	-0.09805	4	0.04044	-0.22357	0.09455	-0.32561	0.88458	0.04650
0.16464	0.26404	5	-0.13299	0.46113	-0.65955	0.29215	0.30586	-0.24280
0.03941	-0.00410	6	-0.41713	-0.34098	0.04010	0.67325	0.14177	0.48290
0.64850	-0.64000	7	0.02869	-0.00969	-0.15986	0.20730	0.17759	-0.26244
0.67238	0.70132	8	0.01034	-0.14650	0.06599	-0.05334	0.16468	-0.01316

Rotated Factor Pattern

Factor3	Factor4		Factor1	Factor2
0.10725	GWA4	GWA4 Inspecting equipment, structures or materials	0.71305	0.11009
0.40465	0.33704			
0.26025	GWA5	GWA5 Estimating the characteristics of materials, products, events or information	0.05280	0.58083
-0.61031	0.36212			
-0.48878	GWA14	GWA14 Scheduling work and activities	-0.10207	0.84079
-0.21972	0.02684			
0.80761	GWA16	GWA16 Performing general physical activities	0.31027	-0.18070
-0.24134	0.12157			
0.28799	GWA17	GWA17 Handling and moving objects	0.41263	-0.40644
0.40936	0.14633			
-0.27113	GWA18	GWA18 Controlling machines and processes	0.63717	-0.29083
0.27991	0.09483			
0.70880	GWA19	GWA19 Interacting with computers	-0.03010	0.32845
0.55505	0.12285			
0.46037	GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.22532	-0.02865
0.44094	-0.07652			
0.09592	GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.26025	0.15798
0.07574	0.73919			
0.09800	GWA22	GWA22 Implementing ideas, programs, systems or products	0.11065	0.54170
-0.11066	0.37798			
-0.08040	GWA23	GWA23 Repairing and maintaining mechanical equipment	0.79651	-0.13999
0.80254	0.06482			
0.12498	GWA24	GWA24 Repairing and maintaining electronic equipment	0.68812	-0.08160
0.13675	0.11334			
-0.31306	GWA25	GWA25 Documenting/recording information	-0.04064	0.48067
-0.29089	-0.02302			
0.58389	GWA27	GWA27 Communicating with supervisors, peers or subordinates	-0.10770	0.67641
	0.07810			
	GWA28	GWA28 Communicating with persons outside the organizations	-0.32957	0.58685
	0.00482			
	GWA40	GWA40 Performing administrative activities	-0.08814	0.77163
	-0.16642			
	GWA41	GWA41 Staffing organizational units	-0.03869	0.84786
	-0.07527			
	KN2	KN2 Clerical	-0.16999	0.32055
	-0.27843			
	KN3	KN3 Economics and Accounting	-0.24044	0.66520
	0.02697			
	KN4	KN4 Sales and Marketing	-0.23084	0.48736
	0.04254			
	KN5	KN5 Customer and Personal Service	-0.22547	0.36516
	-0.16758			
	KN6	KN6 Personnel and Human Resources	-0.08160	0.81425
	-0.04700			
	KN7	KN7 Production and Processing	0.33530	-0.01847
	0.35012			
	KN8	KN8 Food Production	-0.05740	0.16889
	-0.00898			
	KN9	KN9 Computers and Electronics	0.22876	0.14153
	0.12529			
	KN10	KN10 Engineering and Technology	0.58904	-0.07091
	0.60937			
	KN11	KN11 Design	0.26344	-0.02344
	0.82137			
	KN12	KN12 Building and Construction	0.24837	-0.01707
	0.61982			
	KN13	KN13 Mechanical	0.77954	-0.18036
	0.29529			
	KN14	KN14 Mathematics	0.01252	0.39582
	0.35112			
	KN16	KN16 Chemistry	0.23347	-0.00407

0.07483	0.12904				
0.11638	KN17	KN17	Biology	-0.07730	0.12627
0.22637	0.00193				
0.06494	KN20	KN20	Geography	-0.14398	0.15439
0.28823	0.09105				
0.06574	KN21	KN21	Medicine and Dentistry	-0.01353	0.09168
0.47382	-0.12550				
0.50967	KN23	KN23	Education and Training	-0.09988	0.56600
-0.01822	0.07350				
0.66721	KN29	KN29	Public Safety and Security	0.21816	0.16372
0.52347	0.10919				
0.13276	KN31	KN31	Telecommunications	0.14549	0.13655
-0.11919	0.00719				
0.62578	KN32	KN32	Communications and Media	-0.23817	0.42151
0.33289	0.03517				
0.10755	KN33	KN33	Transportation	0.04560	0.07587
-0.01355	-0.04050				
0.14184	sk3	SK3	Writing	-0.17314	0.56027
-0.23333	0.03271				
0.06989	sk4	SK4	Speaking	-0.22076	0.62262
-0.03170	0.01606				
0.00284	sk27	SK27	Equipment selection	0.51106	0.17603
-0.00375	0.51761				
0.00562	sk28	SK28	Installation	0.75084	-0.08690
-0.09244	0.34067				
-0.08486	sk29	SK29	Programming	0.07226	0.17456
-0.13735	0.27533				
-0.03384	sk30	SK30	Testing	0.70383	0.00919
0.26632	0.34350				
-0.03862	sk31	SK31	Operation monitoring	0.82258	-0.18091
-0.06329	-0.03596				
0.25695	sk32	SK32	Operation and control	0.73705	-0.19199
0.27822	-0.07545				
0.42181	sk33	SK33	Product inspection	0.50074	0.18646
0.54719	0.42104				
0.07633	sk34	SK34	Equipment maintenance	0.88802	-0.14130
-0.09275	0.00814				
0.01846	sk35	SK35	Troubleshooting	0.87825	-0.02935
0.26064	0.21858				
-0.07569	sk36	SK36	Repairing	0.84012	-0.14436
0.10594	0.08701				
-0.00324	sk44	SK44	Management of financial resources	-0.16747	0.81558
	0.07195				
	sk45	SK45	Management of material resources	0.09414	0.75895
	0.25120				

Rotated Factor Pattern

Factor7	Factor8			Factor5	Factor6
	GWA4	GWA4	Inspecting equipment, structures or materials	0.14652	0.08824
-0.09979	0.06581				
	GWA5	GWA5	Estimating the characteristics of materials, products, events or information	0.20118	0.16253
-0.14992	0.01069				
	GWA14	GWA14	Scheduling work and activities	0.11793	0.04963
-0.03170	-0.12198				
	GWA16	GWA16	Performing general physical activities	0.13767	0.24484
0.00284	-0.20693				
	GWA17	GWA17	Handling and moving objects	0.10016	-0.03487
-0.00375	0.06261				
	GWA18	GWA18	Controlling machines and processes	0.13103	0.01497
-0.29010	0.19761				
	GWA19	GWA19	Interacting with computers	0.07567	-0.05954
-0.00562	-0.02448				
	GWA20	GWA20	Operating vehicles, mechanized devices, or equipment	-0.03035	0.70946
-0.09244	-0.06930				
	GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment	0.06151	-0.03176
-0.08486	0.03033				
	GWA22	GWA22	Implementing ideas, programs, systems or products	0.25941	-0.09254
-0.13735	-0.12396				
	GWA23	GWA23	Repairing and maintaining mechanical equipment	-0.06811	0.11379
-0.03384	-0.00434				
	GWA24	GWA24	Repairing and maintaining electronic equipment	-0.04748	-0.00871
0.26632	-0.22877				
	GWA25	GWA25	Documenting/recording information	0.24765	0.06817
-0.08977	0.01689				
	GWA27	GWA27	Communicating with supervisors, peers or subordinates	0.16216	0.12551
-0.13524	-0.12649				
	GWA28	GWA28	Communicating with persons outside the organizations	0.23374	0.13227
0.17851	-0.20738				
	GWA40	GWA40	Performing administrative activities	0.05306	0.01131
0.03862	0.03421				
	GWA41	GWA41	Staffing organizational units	-0.04389	-0.03630
-0.06329	0.01219				
	KN2	KN2	Clerical	0.02652	0.08372
0.25695	0.10008				
	KN3	KN3	Economics and Accounting	-0.12852	0.12352
0.27822	0.24457				
	KN4	KN4	Sales and Marketing	-0.07052	0.11869
0.42181	0.14655				
	KN5	KN5	Customer and Personal Service	0.17460	0.12216
0.54719	-0.13496				
	KN6	KN6	Personnel and Human Resources	-0.00963	0.06897
0.07633	0.06718				
-0.09275	0.58390				
	KN7	KN7	Production and Processing	-0.03549	-0.13411
0.01846	KN8	KN8	Food Production	0.33264	0.05092
0.26064	0.27715				
	KN9	KN9	Computers and Electronics	-0.06262	0.05609
-0.07569	-0.10781				
	KN10	KN10	Engineering and Technology	0.00847	0.18818
0.10594	0.10515				
-0.00324	KN11	KN11	Design	-0.10535	0.00777
	0.08289				
	KN12	KN12	Building and Construction	-0.10045	0.13072
	-0.02477				
	KN13	KN13	Mechanical	-0.07032	0.18539

-0.01072	0.09449				
	KN14	KN14	Mathematics	0.10603	0.09163
0.00642	0.18676				
	KN16	KN16	Chemistry	0.69641	0.00735
-0.12420	0.16653				
	KN17	KN17	Biology	0.86715	-0.00218
-0.02402	-0.02577				
	KN20	KN20	Geography	-0.01794	0.66589
0.06402	-0.03713				
	KN21	KN21	Medicine and Dentistry	0.73906	0.03186
0.15710	-0.17627				
	KN23	KN23	Education and Training	0.28301	0.11857
0.13624	-0.14736				
	KN29	KN29	Public Safety and Security	0.22462	0.59503
0.07413	-0.01517				
	KN31	KN31	Telecommunications	-0.06483	0.36498
0.31764	-0.19841				
	KN32	KN32	Communications and Media	0.02266	0.18495
0.09741	-0.07296				

PRINCIPAL AXES ANALYSIS OF CONCRETE-LEVEL
VARIMAX ROTATION OF 8 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Rotated Factor Pattern

Factor7	Factor8		Factor5	Factor6
	KN33	KN33 Transportation	-0.02483	0.80519
0.05133	0.06172			
	sk3	SK3 Writing	0.23424	0.03966
-0.05507	-0.06763			
	sk4	SK4 Speaking	0.24090	0.16345
0.10626	-0.17349			
	sk27	SK27 Equipment selection	0.27871	-0.07237
-0.15361	0.04630			
	sk28	SK28 Installation	-0.08723	-0.12592
0.12780	-0.13404			
	sk29	SK29 Programming	0.07560	-0.12569
-0.08619	-0.05405			
	sk30	SK30 Testing	0.23620	-0.07452
-0.05070	0.04875			
	sk31	SK31 Operation monitoring	0.08885	0.12672
-0.25018	0.20854			
	sk32	SK32 Operation and control	0.05429	0.16217
-0.25783	0.20672			
	sk33	SK33 Product inspection	0.10385	-0.19690
-0.02914	0.28139			
	sk34	SK34 Equipment maintenance	-0.05708	0.01768
-0.03481	-0.01182			
	sk35	SK35 Troubleshooting	-0.04072	0.06576
0.03138	-0.05272			
	sk36	SK36 Repairing	-0.11647	-0.02055
0.07134	-0.11371			
	sk44	SK44 Management of financial resources	0.00200	-0.00089
0.18432	0.11777			
	sk45	SK45 Management of material resources	0.13839	0.04041
0.10300	0.08577			

Variance Explained by Each Factor

Factor8	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
1.2393743	9.4127602	8.7178199	6.9510462	3.8952797	2.7979959	2.6288518	1.4365217

Final Communality Estimates: Total = 37.079650

GWA4	GWA5	GWA14	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22	
GWA23	GWA24	GWA25	GWA27							
0.68920434	0.72449755	0.81804310	0.63790936	0.61095774	0.68844067	0.78601000	0.63328768	0.73494502	0.72620925	
0.75050000	0.69695543	0.80994254	0.85964905							
KN9	GWA40	GWA41	KN2	KN3	KN4	KN5	KN6	KN7	KN8	
KN10	KN11	KN12								
0.81197479	0.83091160	0.73368550	0.57069492	0.74553376	0.52028267	0.58103539	0.69666979	0.61638821	0.22875596	
0.81875585	0.79121511	0.79255989	0.57196661							
KN33	KN13	KN14	KN16	KN17	KN20	KN21	KN23	KN29	KN31	KN32
KN33	sk3	sk4	sk4	sk27						
0.86038403	0.67559602	0.60497868	0.78866656	0.55331204	0.63154051	0.55324068	0.50088254	0.54204203	0.54492616	
0.66519651	0.85416417	0.83681177	0.68636673							
sk36	sk28	sk44	sk29	sk45	sk30	sk31	sk32	sk33	sk34	sk35
0.75935071	0.53497291	0.79056683	0.85225874	0.72443298	0.61248188	0.86797394	0.83459808			
0.83393777	0.78500900	0.70897664								

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GWA16	GWA17	GWA18	GWA19	GWA4	GWA5	GWA14
GWA4	GWA4	Inspecting equipment, structures or materials		1.00000	0.21424	-0.12566
0.31608	0.37698	0.45656	-0.19377			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.21424	1.00000	0.45231
0.12851	-0.22864	-0.14142	0.22413			
GWA14	GWA14	Scheduling work and activities		-0.12566	0.45231	1.00000
0.31790	-0.57415	-0.44439	0.37385			
GWA16	GWA16	Performing general physical activities		0.31608	-0.12851	-0.31790
1.00000	0.60731	0.43672	-0.55394			
GWA17	GWA17	Handling and moving objects		0.37698	-0.22864	-0.57415
0.60731	1.00000	0.70393	-0.43569			
GWA18	GWA18	Controlling machines and processes		0.45656	-0.14142	-0.44439
0.43672	0.70393	1.00000	-0.35525			
GWA19	GWA19	Interacting with computers		-0.19377	0.22413	0.37385
0.55394	-0.43569	-0.35525	1.00000			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		0.16938	0.02480	-0.10972
0.37589	0.12199	0.14111	-0.24302			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.33847	0.38534	0.09743
0.05281	0.06928	0.09258	0.18807			
GWA22	GWA22	Implementing ideas, programs, systems or products		0.14552	0.44885	0.36145
0.18876	-0.11771	-0.09986	0.23368			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.58812	-0.08494	-0.32936
0.46118	0.48697	0.57403	-0.34321			
GWA24	GWA24	Repairing and maintaining electronic equipment		0.47363	0.03018	-0.13321
0.09147	0.23942	0.25892	0.07124			
GWA25	GWA25	Documenting/recording information		-0.07197	0.25161	0.42773
0.43654	-0.50170	-0.33451	0.56735			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.11051	0.42650	0.68315
0.33893	-0.60517	-0.43244	0.50699			
GWA28	GWA28	Communicating with persons outside the organizations		-0.34125	0.26336	0.62635
0.41590	-0.64919	-0.62226	0.44881			
GWA40	GWA40	Performing administrative activities		-0.10092	0.34434	0.64939
0.42787	-0.53832	-0.40050	0.55483			
GWA41	GWA41	Staffing organizational units		-0.05531	0.36207	0.67942
0.22906	-0.38754	-0.29216	0.23214			
KN2	KN2	Clerical		-0.27975	0.00245	0.30418
0.40161	-0.38091	-0.34420	0.55450			
KN3	KN3	Economics and Accounting		-0.26172	0.32850	0.51826
0.42530	-0.56227	-0.47676	0.41446			
KN4	KN4	Sales and Marketing		-0.20696	0.23241	0.37485
0.23082	-0.35040	-0.33256	0.20830			
KN5	KN5	Customer and Personal Service		-0.27615	0.02650	0.33711
0.07228	-0.19546	-0.33108	0.16905			
KN6	KN6	Personnel and Human Resources		-0.08390	0.32076	0.67152
0.29477	-0.48201	-0.38259	0.25489			
KN7	KN7	Production and Processing		0.34962	0.03416	-0.24999
0.12694	0.38239	0.45758	-0.18347			
KN8	KN8	Food Production		0.02435	0.10335	0.11036
0.06093	-0.05847	-0.03638	-0.06377			
KN9	KN9	Computers and Electronics		0.01862	0.13694	0.18141
0.43850	-0.25283	-0.19155	0.71691			
KN10	KN10	Engineering and Technology		0.56550	0.13336	-0.19200
0.25316	0.29875	0.44939	-0.06824			
KN11	KN11	Design		0.29840	0.22278	-0.11216
0.04322	0.18265	0.13423	0.02771			
KN12	KN12	Building and Construction		0.26674	0.03898	-0.21430
0.42714	0.33558	0.24475	-0.28630			
KN13	KN13	Mechanical		0.60217	-0.07774	-0.40146
0.52959	0.58906	0.64519	-0.41324			
KN14	KN14	Mathematics		-0.04969	0.38220	0.31830
0.42108	-0.43587	-0.24981	0.54935			
KN16	KN16	Chemistry		0.19894	0.11484	-0.02075
0.09591	0.12616	0.26490	-0.04150			
KN17	KN17	Biology		-0.06598	0.10776	0.18398
0.02688	-0.09548	-0.08132	0.04008			
KN20	KN20	Geography		-0.10571	0.22433	0.16945
0.06580	-0.27470	-0.30115	0.14145			
KN21	KN21	Medicine and Dentistry		-0.07623	0.01168	0.18080
0.06121	-0.04609	-0.08998	0.06008			
KN23	KN23	Education and Training		-0.17182	0.24892	0.59603
0.25503	-0.46776	-0.42148	0.31813			
KN29	KN29	Public Safety and Security		0.26287	0.16838	0.11018
0.17751	-0.07029	-0.02598	0.02472			
KN31	KN31	Telecommunications		-0.07795	0.16233	0.29528
0.26724	-0.32484	-0.28616	0.36188			
KN32	KN32	Communications and Media		-0.23733	0.20649	0.47279
0.47471	-0.52354	-0.41455	0.50936			
KN33	KN33	Transportation		0.08614	0.13529	0.06610
0.12610	-0.04494	-0.07997	-0.08739			
SK3	SK3	Writing		-0.17203	0.29711	0.53296
0.59014	-0.67660	-0.53625	0.57556			
SK4	SK4	Speaking		-0.27011	0.29007	0.66739
0.43600	-0.69485	-0.61001	0.45867			
SK27	SK27	Equipment selection		0.51513	0.15666	-0.22704
0.36663	0.52942	0.48412	-0.25665			
SK28	SK28	Installation		0.51764	-0.03135	-0.30888
0.41314	0.49193	0.42634	-0.24415			
SK29	SK29	Programming		0.02040	0.21912	0.16731
0.33427	-0.22160	-0.19106	0.57967			
SK30	SK30	Testing		0.61629	0.13557	-0.14106
0.05815	0.19156	0.31278	0.03119			
SK31	SK31	Operation monitoring		0.56236	-0.05011	-0.31965
0.23988	0.41484	0.64068	-0.17435			
SK32	SK32	Operation and control		0.41891	-0.12294	-0.38497
0.32913	0.56669	0.73987	-0.27145			

SK33	SK33	Product inspection		0.48685	0.15258	-0.11391	-
0.01063		0.23806	0.25868	-0.03035			
SK34	SK34	Equipment maintenance		0.60564	-0.09600	-0.35102	-
0.44617		0.51475	0.55994	-0.36017			
SK35	SK35	Troubleshooting		0.68934	0.07151	-0.18751	-
0.27811		0.31935	0.37035	-0.13778			
SK36	SK36	Repairing		0.57610	-0.07915	-0.32705	-
0.42368		0.48252	0.45400	-0.34598			
SK44	SK44	Management of financial resources		-0.16880	0.42631	0.62922	-
0.41045		-0.54012	-0.48656	0.31561			

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				GWA4	GWA5	GWA14	
GWA16	GWA17	GWA18	GWA19				
SK45	SK45	Management of material resources		0.14133	0.47428	0.56900	-
0.14953		-0.27058	-0.26265	0.17411			

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				GWA20	GWA21	GWA22	
GWA23	GWA24	GWA25	GWA27				
GWA4	GWA4	Inspecting equipment, structures or materials		0.16938	0.33847	0.14552	-
0.58812		0.47363	-0.07197	-0.11051			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.02480	0.38534	0.44885	-
0.08494		0.03018	0.25161	0.42650			
GWA14	GWA14	Scheduling work and activities		-0.10972	0.09743	0.36145	-
0.32936		-0.13321	0.42773	0.68315			
GWA16	GWA16	Performing general physical activities		0.37589	-0.05281	-0.18876	-
0.46118		0.09147	-0.43654	-0.33893			
GWA17	GWA17	Handling and moving objects		0.12199	0.06928	-0.11771	-
0.48697		0.23942	-0.50170	-0.60517			
GWA18	GWA18	Controlling machines and processes		0.14111	0.09258	-0.09986	-
0.57403		0.25892	-0.33451	-0.43244			
GWA19	GWA19	Interacting with computers		-0.24302	0.18807	0.23368	-
0.34321		0.07124	0.56735	0.50699			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		1.00000	-0.09112	-0.20158	-
0.33317		0.08379	-0.10058	-0.02466			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		-0.09112	1.00000	0.45163	-
0.06431		0.19099	0.02352	0.10901			
GWA22	GWA22	Implementing ideas, programs, systems or products		-0.20158	0.45163	1.00000	-
0.09140		0.12799	0.12548	0.28764			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.33317	0.06431	-0.09140	-
1.00000		0.44674	-0.24859	-0.31147			
GWA24	GWA24	Repairing and maintaining electronic equipment		0.08379	0.19099	0.12799	-
0.44674		1.00000	0.01939	-0.04019			
GWA25	GWA25	Documenting/recording information		-0.10058	0.02352	0.12548	-
0.24859		0.01939	1.00000	0.57692			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.02466	0.10901	0.28764	-
0.31147		-0.04019	0.57692	1.00000			
GWA28	GWA28	Communicating with persons outside the organizations		-0.06719	-0.03257	0.18967	-
0.45284		-0.15263	0.54943	0.59225			
GWA40	GWA40	Performing administrative activities		-0.11633	-0.01093	0.20697	-
0.28026		-0.04641	0.78136	0.66035			
GWA41	GWA41	Staffing organizational units		-0.07696	0.01904	0.27767	-
0.20018		-0.12287	0.23836	0.49432			
KN2	KN2	Clerical		-0.13534	-0.18217	-0.08173	-
0.27643		-0.07002	0.68340	0.39203			
KN3	KN3	Economics and Accounting		-0.10751	-0.03279	0.11950	-
0.33474		-0.18048	0.41849	0.44920			
KN4	KN4	Sales and Marketing		-0.01001	0.02647	0.10478	-
0.21986		-0.12123	0.17962	0.25314			
KN5	KN5	Customer and Personal Service		-0.01756	-0.16617	-0.02702	-
0.26014		-0.07729	0.20747	0.21343			
KN6	KN6	Personnel and Human Resources		-0.06358	-0.02398	0.23912	-
0.26101		-0.13419	0.30317	0.54447			
KN7	KN7	Production and Processing		-0.07848	0.24192	0.04196	-
0.24398		0.03173	-0.19310	-0.27091			
KN8	KN8	Food Production		0.06740	-0.03677	0.03598	-
0.03739		-0.10126	0.07592	0.05120			
KN9	KN9	Computers and Electronics		-0.14610	0.20965	0.18910	-
0.13885		0.48513	0.42269	0.34136			
KN10	KN10	Engineering and Technology		0.14786	0.50372	0.12898	-
0.52163		0.46278	-0.14568	-0.10664			
KN11	KN11	Design		-0.07683	0.73657	0.26124	-
0.13653		0.23762	-0.18388	-0.12363			
KN12	KN12	Building and Construction		0.12360	0.29882	0.09553	-
0.27832		0.09305	-0.39979	-0.25703			
KN13	KN13	Mechanical		0.30898	0.15321	-0.05313	-
0.80643		0.43243	-0.38991	-0.39267			
KN14	KN14	Mathematics		-0.16058	0.27048	0.20657	-
0.21559		0.01092	0.52324	0.42338			
KN16	KN16	Chemistry		-0.02207	0.08746	0.09344	-
0.09491		0.04586	0.07547	0.00347			
KN17	KN17	Biology		-0.06338	-0.02042	0.14024	-
0.17844		-0.09924	0.21921	0.16543			
KN20	KN20	Geography		0.38828	-0.00265	-0.05986	-
0.13528		-0.08322	0.21898	0.23388			
KN21	KN21	Medicine and Dentistry		-0.04279	-0.10060	0.07475	-
0.14804		-0.02539	0.21967	0.20700			
KN23	KN23	Education and Training		-0.07842	0.05943	0.28657	-
0.28227		-0.06546	0.32217	0.53175			
KN29	KN29	Public Safety and Security		0.36355	0.03834	-0.00185	-
0.08796		0.12436	0.18661	0.26019			
KN31	KN31	Telecommunications		0.11372	0.00363	0.02560	-
0.16913		0.26821	0.32447	0.39090			
KN32	KN32	Communications and Media		-0.08755	0.08397	0.20076	-
0.34413		-0.06523	0.40552	0.54231			
KN33	KN33	Transportation		0.63836	-0.10549	-0.16164	-
0.09319		0.00958	0.08922	0.14592			
SK3	SK3	Writing		-0.17250	0.08878	0.25352	-

0.38809	-0.09248	0.75619	0.65865				
SK4	SK4 Speaking			-0.06424	0.01064	0.20380	-
0.43664	-0.14124	0.56067	0.72960				
SK27	SK27 Equipment selection			0.07890	0.40663	0.21826	
0.47101	0.33560	-0.34324	-0.27612				
SK28	SK28 Installation			0.09261	0.23098	0.12431	
0.61986	0.54121	-0.33860	-0.32480				
SK29	SK29 Programming			-0.16230	0.33403	0.30733	-
0.18006	0.10747	0.26921	0.28860				
SK30	SK30 Testing			0.01986	0.33217	0.23174	
0.45678	0.57992	0.05051	-0.05382				
SK31	SK31 Operation monitoring			0.25346	0.08976	-0.05545	
0.58781	0.42569	-0.08873	-0.17939				
SK32	SK32 Operation and control			0.28474	0.03133	-0.14177	
0.53775	0.27243	-0.25982	-0.31975				
SK33	SK33 Product inspection			-0.16316	0.33761	0.20359	
0.21983	0.16596	-0.05440	-0.15599				
SK34	SK34 Equipment maintenance			0.33683	0.02925	-0.05665	
0.82569	0.51525	-0.25422	-0.30771				
SK35	SK35 Troubleshooting			0.24712	0.23518	0.07270	
0.69728	0.63891	-0.10854	-0.12957				
SK36	SK36 Repairing			0.24738	0.08194	-0.01246	
0.80090	0.56513	-0.29409	-0.33281				
SK44	SK44 Management of financial resources			-0.12548	0.09151	0.29706	-
0.33674	-0.15406	0.35765	0.51454				
SK45	SK45 Management of material resources			-0.02231	0.28979	0.37926	-
0.13780	-0.01546	0.21720	0.43855				

Correlations

				GWA28	GWA40	GWA41	
KN2	KN3	KN4	KN5				
GWA4	GWA4 Inspecting equipment, structures or materials			-0.34125	-0.10092	-0.05531	-
0.27975	-0.26172	-0.20696	-0.27615				
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.26336	0.34434	0.36207	
0.00245	0.32850	0.23241	0.02650				
GWA14	GWA14 Scheduling work and activities			0.62635	0.64939	0.67942	
0.30418	0.51826	0.37485	0.33711				
GWA16	GWA16 Performing general physical activities			-0.41590	-0.42787	-0.22906	-
0.40161	-0.42530	-0.23082	-0.07228				
GWA17	GWA17 Handling and moving objects			-0.64919	-0.53832	-0.38754	-
0.38091	-0.56227	-0.35040	-0.19546				
GWA18	GWA18 Controlling machines and processes			-0.62226	-0.40050	-0.29216	-
0.34420	-0.47676	-0.33256	-0.33108				
GWA19	GWA19 Interacting with computers			0.44881	0.55483	0.23214	
0.55450	0.41446	0.20830	0.16905				
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			-0.06719	-0.11633	-0.07696	-
0.13534	-0.10751	-0.01001	-0.01756				
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			-0.03257	-0.01093	0.01904	-
0.18217	-0.03279	0.02647	-0.16617				
GWA22	GWA22 Implementing ideas, programs, systems or products			0.18967	0.20697	0.27767	-
0.08173	0.11950	0.10478	-0.02702				
GWA23	GWA23 Repairing and maintaining mechanical equipment			-0.45284	-0.28026	-0.20018	-
0.27643	-0.33474	-0.21986	-0.26014				
GWA24	GWA24 Repairing and maintaining electronic equipment			-0.15263	-0.04641	-0.12287	-
0.07002	-0.18048	-0.12123	-0.07729				
GWA25	GWA25 Documenting/recording information			0.54943	0.78136	0.23836	
0.68340	0.41849	0.17962	0.20747				
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.59225	0.66035	0.49432	
0.39203	0.44920	0.25314	0.21343				
GWA28	GWA28 Communicating with persons outside the organizations			1.00000	0.63192	0.34727	
0.45069	0.54572	0.53852	0.57298				
GWA40	GWA40 Performing administrative activities			0.63192	1.00000	0.51584	
0.66916	0.62242	0.35378	0.33726				
GWA41	GWA41 Staffing organizational units			0.34727	0.51584	1.00000	
0.15097	0.45019	0.33466	0.19198				
KN2	KN2 Clerical			0.45069	0.66916	0.15097	
1.00000	0.44471	0.18645	0.32343				
KN3	KN3 Economics and Accounting			0.54572	0.62242	0.45019	
0.44471	1.00000	0.52220	0.29342				
KN4	KN4 Sales and Marketing			0.53852	0.35378	0.33466	
0.18645	0.52220	1.00000	0.45189				
KN5	KN5 Customer and Personal Service			0.57298	0.33726	0.19198	
0.32343	0.29342	0.45189	1.00000				
KN6	KN6 Personnel and Human Resources			0.39942	0.51505	0.80526	
0.23720	0.49276	0.29551	0.21542				
KN7	KN7 Production and Processing			-0.47142	-0.21958	-0.07884	-
0.25401	-0.15245	-0.10754	-0.32613				
KN8	KN8 Food Production			0.05994	0.06371	0.12851	-
0.02801	0.05012	0.07337	0.01607				
KN9	KN9 Computers and Electronics			0.26497	0.32562	0.04736	
0.43259	0.22605	0.05390	0.03434				
KN10	KN10 Engineering and Technology			-0.38204	-0.24753	-0.16886	-
0.31249	-0.24596	-0.22281	-0.37396				
KN11	KN11 Design			-0.19206	-0.21940	-0.10480	-
0.27472	-0.09889	-0.04449	-0.20497				
KN12	KN12 Building and Construction			-0.32249	-0.35595	-0.11612	-
0.38282	-0.15777	-0.13701	-0.27165				
KN13	KN13 Mechanical			-0.58301	-0.41388	-0.24379	-
0.39615	-0.38650	-0.27204	-0.33576				
KN14	KN14 Mathematics			0.33591	0.48284	0.21734	
0.35288	0.57101	0.24478	0.05635				
KN16	KN16 Chemistry			-0.06932	-0.04389	-0.07115	-
0.10609	-0.19555	-0.13491	-0.08831				
KN17	KN17 Biology			0.22188	0.11120	0.03606	
0.02141	-0.05835	-0.03286	0.09242				
KN20	KN20 Geography			0.31313	0.18447	0.05982	
0.16948	0.20112	0.19133	0.17157				
KN21	KN21 Medicine and Dentistry			0.27600	0.15493	0.01276	
0.12390	-0.05201	-0.03345	0.28278				
KN23	KN23 Education and Training			0.52771	0.39493	0.39736	
0.21304	0.29511	0.26831	0.33217				
KN29	KN29 Public Safety and Security			0.15538	0.13294	0.05774	
0.03346	0.03644	-0.01101	0.11584				
KN31	KN31 Telecommunications			0.42628	0.34735	0.12516	
0.37111	0.28505	0.22205	0.22871				
KN32	KN32 Communications and Media			0.55496	0.43880	0.32254	

0.38641	0.36223	0.36557	0.20291			
KN33	KN33 Transportation			0.10195	0.09112	0.00429
0.07342	0.05927	0.07313	0.13351			
SK3	SK3 Writing			0.63445	0.65583	0.32107
0.53897	0.46418	0.23218	0.14584			
SK4	SK4 Speaking			0.81255	0.59674	0.38158
0.42861	0.49438	0.41044	0.42711			
SK27	SK27 Equipment selection			-0.46640	-0.39796	-0.15279
0.43149	-0.36634	-0.25381	-0.36746			
SK28	SK28 Installation			-0.44074	-0.34345	-0.18333
0.34713	-0.31740	-0.20829	-0.27807			
SK29	SK29 Programming			0.16358	0.16684	0.05428
0.13590	0.10934	0.00823	-0.06697			
SK30	SK30 Testing			-0.22006	-0.10874	-0.13186
0.18665	-0.21931	-0.20707	-0.29682			
SK31	SK31 Operation monitoring			-0.47961	-0.23175	-0.21682
0.19755	-0.38531	-0.33465	-0.33909			
SK32	SK32 Operation and control			-0.57220	-0.33855	-0.25535
0.23072	-0.43885	-0.35387	-0.33787			

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KN2	KN3	KN4	KN5	GWA28	GWA40	GWA41
SK33	SK33 Product inspection			-0.29187	-0.09458	-0.02446
0.11552	-0.09593	-0.13941	-0.32797			
SK34	SK34 Equipment maintenance			-0.50137	-0.30548	-0.20239
0.28491	-0.37748	-0.26948	-0.26525			
SK35	SK35 Troubleshooting			-0.33068	-0.17080	-0.12910
0.23544	-0.24265	-0.20383	-0.26711			
SK36	SK36 Repairing			-0.44711	-0.31576	-0.20164
0.31373	-0.32520	-0.21940	-0.28003			
SK44	SK44 Management of financial resources			0.54298	0.57163	0.59457
0.27262	0.75534	0.46252	0.24168			
SK45	SK45 Management of material resources			0.32791	0.37666	0.47592
0.08726	0.34691	0.28716	0.14266			

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KN9	KN10	KN11	KN12	KN6	KN7	KN8
GWA4	GWA4 Inspecting equipment, structures or materials			-0.08390	0.34962	0.02435
0.01862	0.56550	0.29840	0.26674			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			0.32076	0.03416	0.10335
0.13694	0.13336	0.22278	0.03898			
GWA14	GWA14 Scheduling work and activities			0.67152	-0.24999	0.11036
0.18141	-0.19200	-0.11216	-0.21430			
GWA16	GWA16 Performing general physical activities			-0.29477	0.12694	0.06093
0.43850	0.25316	0.04322	0.42714			
GWA17	GWA17 Handling and moving objects			-0.48201	0.38239	-0.05847
0.25283	0.29875	0.18265	0.33558			
GWA18	GWA18 Controlling machines and processes			-0.38259	0.45758	-0.03638
0.19155	0.44939	0.13423	0.24475			
GWA19	GWA19 Interacting with computers			0.25489	-0.18347	-0.06377
0.71691	-0.06824	0.02771	-0.28630			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			-0.06358	-0.07848	0.06740
0.14610	0.14786	-0.07683	0.12360			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			-0.02398	0.24192	-0.03677
0.20965	0.50372	0.73657	0.29882			
GWA22	GWA22 Implementing ideas, programs, systems or products			0.23912	0.04196	0.03598
0.18910	0.12898	0.26124	0.09553			
GWA23	GWA23 Repairing and maintaining mechanical equipment			-0.26101	0.24398	-0.03739
0.13885	0.52163	0.13653	0.27832			
GWA24	GWA24 Repairing and maintaining electronic equipment			-0.13419	0.03173	-0.10126
0.48513	0.46278	0.23762	0.09305			
GWA25	GWA25 Documenting/recording information			0.30317	-0.19310	0.07592
0.42269	-0.14568	-0.18388	-0.39979			
GWA27	GWA27 Communicating with supervisors, peers or subordinates			0.54447	-0.27091	0.05120
0.34136	-0.10664	-0.12363	-0.25703			
GWA28	GWA28 Communicating with persons outside the organizations			0.39942	-0.47142	0.05994
0.26497	-0.38204	-0.19206	-0.32249			
GWA40	GWA40 Performing administrative activities			0.51505	-0.21958	0.06371
0.32562	-0.24753	-0.21940	-0.35595			
GWA41	GWA41 Staffing organizational units			0.80526	-0.07884	0.12851
0.04736	-0.16886	-0.10480	-0.11612			
KN2	KN2 Clerical			0.23720	-0.25401	-0.02801
0.43259	-0.31249	-0.27472	-0.38282			
KN3	KN3 Economics and Accounting			0.49276	-0.15245	0.05012
0.22605	-0.24596	-0.09889	-0.15777			
KN4	KN4 Sales and Marketing			0.29551	-0.10754	0.07337
0.05390	-0.22281	-0.04449	-0.13701			
KN5	KN5 Customer and Personal Service			0.21542	-0.32613	0.01607
0.03434	-0.37396	-0.20497	-0.27165			
KN6	KN6 Personnel and Human Resources			1.00000	-0.09119	0.09943
0.10367	-0.17229	-0.10986	-0.13419			
KN7	KN7 Production and Processing			-0.09119	1.00000	0.11329
0.16184	0.37055	0.32012	0.16303			
KN8	KN8 Food Production			0.09943	0.11329	1.00000
0.14629	-0.09748	-0.13321	-0.08368			
KN9	KN9 Computers and Electronics			0.10367	-0.16184	-0.14629
1.00000	0.16282	0.15676	-0.20490			
KN10	KN10 Engineering and Technology			-0.17229	0.37055	-0.09748
0.16282	1.00000	0.60403	0.45520			
KN11	KN11 Design			-0.10986	0.32012	-0.13321
0.15676	0.60403	1.00000	0.49125			
KN12	KN12 Building and Construction			-0.13419	0.16303	-0.08368
0.20490	0.45520	0.49125	1.00000			
KN13	KN13 Mechanical			-0.27651	0.39457	-0.08476
0.15843	0.67969	0.30370	0.47007			
KN14	KN14 Mathematics			0.28427	0.01678	0.03112
0.40223	0.13270	0.19710	-0.07162			

KN16	KN16	Chemistry			-0.07872	0.13413	0.21044	-
0.07289		0.18954	-0.01193	-0.03418				
KN17	KN17	Biology			0.04060	-0.17926	0.41123	-
0.06594		-0.13219	-0.17292	-0.16745				
KN20	KN20	Geography			0.09844	-0.23885	-0.00754	-
0.11352		-0.06185	-0.03056	-0.06640				
KN21	KN21	Medicine and Dentistry			0.06496	-0.24204	0.06562	-
0.02794		-0.14999	-0.17951	-0.17363				
KN23	KN23	Education and Training			0.50385	-0.23099	0.06789	-
0.21492		-0.14040	-0.07167	-0.18663				
KN29	KN29	Public Safety and Security			0.14073	-0.05948	0.03286	-
0.08369		0.20546	0.02325	0.08380				
KN31	KN31	Telecommunications			0.17454	-0.28665	-0.08175	-
0.50926		-0.03192	-0.02746	-0.19090				
KN32	KN32	Communications and Media			0.32841	-0.22653	-0.03986	-
0.40229		-0.18724	-0.05827	-0.27257				
KN33	KN33	Transportation			0.07189	-0.07388	0.03801	-
0.02291		0.02413	-0.11180	-0.01250				
SK3	SK3	Writing			0.41762	-0.28187	0.05204	-
0.43303		-0.18674	-0.11932	-0.35166				
SK4	SK4	Speaking			0.50041	-0.41021	0.05123	-
0.31151		-0.25882	-0.15917	-0.30321				
SK27	SK27	Equipment selection			-0.19307	0.33451	-0.00613	-
0.04601		0.56855	0.45385	0.43235				
SK28	SK28	Installation			-0.23243	0.22595	-0.08488	-
0.03227		0.54756	0.36161	0.47305				
SK29	SK29	Programming			0.09657	-0.06020	-0.00716	-
0.50248		0.11255	0.16538	-0.09920				
SK30	SK30	Testing			-0.11323	0.23218	0.02194	-
0.29824		0.59211	0.32616	0.14056				
SK31	SK31	Operation monitoring			-0.22165	0.35498	-0.04222	-
0.08879		0.51254	0.11864	0.08248				
SK32	SK32	Operation and control			-0.28545	0.37447	-0.07850	-
0.05027		0.40029	0.08702	0.15076				
SK33	SK33	Product inspection			-0.03278	0.42556	0.07480	-
0.07457		0.31112	0.38836	0.22830				
SK34	SK34	Equipment maintenance			-0.22683	0.27214	-0.03184	-
0.07208		0.47849	0.12655	0.23807				
SK35	SK35	Troubleshooting			-0.13074	0.19224	-0.03719	-
0.18138		0.60072	0.27803	0.26088				
SK36	SK36	Repairing			-0.24343	0.16930	-0.06408	-
0.03138		0.49268	0.19905	0.34801				
SK44	SK44	Management of financial resources			0.61043	-0.14989	0.10654	-
0.17226		-0.20329	-0.01111	-0.10702				
SK45	SK45	Management of material resources			0.49597	0.02269	0.11640	-
0.09393		0.06101	0.15219	0.04058				

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KN17	KN20	KN21	KN23	KN13	KN14	KN16	
GWA4	GWA4	Inspecting equipment, structures or materials		0.60217	-0.04969	0.19894	-
0.06598		-0.10571	-0.07623	-0.17182			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		-0.07774	0.38220	0.11484	-
0.10776		0.22433	0.01168	0.24892			
GWA14	GWA14	Scheduling work and activities		-0.40146	0.31830	-0.02075	-
0.18398		0.16945	0.18080	0.59603			
GWA16	GWA16	Performing general physical activities		0.52959	-0.42108	0.09591	-
0.02688		-0.06580	0.06121	-0.25503			
GWA17	GWA17	Handling and moving objects		0.58906	-0.43587	0.12616	-
0.09548		-0.27470	-0.04609	-0.46776			
GWA18	GWA18	Controlling machines and processes		0.64519	-0.24981	0.26490	-
0.08132		-0.30115	-0.08998	-0.42148			
GWA19	GWA19	Interacting with computers		-0.41324	0.54935	-0.04150	-
0.04008		0.14145	0.06008	0.31813			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		0.30898	-0.16058	-0.02207	-
0.06338		0.38828	-0.04279	-0.07842			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.15321	0.27048	0.08746	-
0.02042		-0.00265	-0.10060	0.05943			
GWA22	GWA22	Implementing ideas, programs, systems or products		-0.05313	0.20657	0.09344	-
0.14024		-0.05986	0.07475	0.28657			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.80643	-0.21559	0.09491	-
0.17844		-0.13528	-0.14804	-0.28227			
GWA24	GWA24	Repairing and maintaining electronic equipment		0.43243	0.01092	0.04586	-
0.09924		-0.08322	-0.02539	-0.06546			
GWA25	GWA25	Documenting/recording information		-0.38991	0.52324	0.07547	-
0.21921		0.21898	0.21967	0.32217			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		-0.39267	0.42338	0.00347	-
0.16543		0.23388	0.20700	0.53175			
GWA28	GWA28	Communicating with persons outside the organizations		-0.58301	0.33591	-0.06932	-
0.22188		0.31313	0.27600	0.52771			
GWA40	GWA40	Performing administrative activities		-0.41388	0.48284	-0.04389	-
0.11120		0.18447	0.15493	0.39493			
GWA41	GWA41	Staffing organizational units		-0.24379	0.21734	-0.07115	-
0.03606		0.05982	0.01276	0.39736			
KN2	KN2	Clerical		-0.39615	0.35288	-0.10609	-
0.02141		0.16948	0.12390	0.21304			
KN3	KN3	Economics and Accounting		-0.38650	0.57101	-0.19555	-
0.05835		0.20112	-0.05201	0.29511			
KN4	KN4	Sales and Marketing		-0.27204	0.24478	-0.13491	-
0.03286		0.19133	-0.03345	0.26831			
KN5	KN5	Customer and Personal Service		-0.33576	0.05635	-0.08831	-
0.09242		0.17157	0.28278	0.33217			
KN6	KN6	Personnel and Human Resources		-0.27651	0.28427	-0.07872	-
0.04060		0.09844	0.06496	0.50385			
KN7	KN7	Production and Processing		0.39457	0.01678	0.13413	-
0.17926		-0.23885	-0.24204	-0.23099			
KN8	KN8	Food Production		-0.08476	0.03112	0.21044	-
0.41123		-0.00754	0.06562	0.06789			
KN9	KN9	Computers and Electronics		-0.15843	0.40223	-0.07289	-
0.06594		0.11352	0.02794	0.21492			
KN10	KN10	Engineering and Technology		0.67969	0.13270	0.18954	-
0.13219		-0.06185	-0.14999	-0.14040			
KN11	KN11	Design		0.30370	0.19710	-0.01193	-
0.17292		-0.03056	-0.17951	-0.07167			
KN12	KN12	Building and Construction		0.47007	-0.07162	-0.03418	-
0.16745		-0.06640	-0.17363	-0.18663			

KN13	KN13	Mechanical			1.00000	-0.22493	0.08689	-
0.22564		-0.16293	-0.18215	-0.31655				
KN14	KN14	Mathematics			-0.22493	1.00000	0.10489	
0.08374		0.17687	0.00781	0.29376				
KN16	KN16	Chemistry			0.08689	0.10489	1.00000	
0.56146		-0.07995	0.37295	0.04285				
KN17	KN17	Biology			-0.22564	0.08374	0.56146	
1.00000		-0.00784	0.63775	0.23399				
KN20	KN20	Geography			-0.16293	0.17687	-0.07995	-
0.00784		1.00000	-0.02665	0.14506				
KN21	KN21	Medicine and Dentistry			-0.18215	0.00781	0.37295	
0.63775		-0.02665	1.00000	0.29313				
KN23	KN23	Education and Training			-0.31655	0.29376	0.04285	
0.23399		0.14506	0.29313	1.00000				
KN29	KN29	Public Safety and Security			0.13974	0.09517	0.16916	
0.07313		0.34318	0.19482	0.19643				
KN31	KN31	Telecommunications			-0.20270	0.17702	-0.16421	-
0.10322		0.38101	0.02092	0.20908				
KN32	KN32	Communications and Media			-0.43109	0.29266	-0.07493	
0.01882		0.30435	0.05312	0.43362				
KN33	KN33	Transportation			0.08158	0.02211	-0.10224	-
0.09007		0.58488	-0.01169	0.02108				
SK3	SK3	Writing			-0.49933	0.49631	0.03735	
0.21634		0.22900	0.19722	0.48214				
SK4	SK4	Speaking			-0.52522	0.37068	-0.06253	
0.20262		0.32973	0.28387	0.64397				
SK27	SK27	Equipment selection			0.59560	-0.12047	0.27733	
0.06813		-0.19683	0.01862	-0.14155				

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KN17	KN20	KN21	KN23	KN13	KN14	KN16	
SK28	SK28	Installation		0.66733	-0.18479	0.01065	-
0.19654		-0.21842	-0.15999	-0.23875			
SK29	SK29	Programming		-0.18127	0.40490	0.03618	
0.07234		0.02410	-0.01534	0.20316			
SK30	SK30	Testing		0.48562	0.12810	0.28657	
0.03712		-0.13590	0.00779	-0.02366			
SK31	SK31	Operation monitoring		0.63269	-0.10217	0.21411	-
0.08912		-0.10916	-0.02029	-0.24007			
SK32	SK32	Operation and control		0.61406	-0.25532	0.15818	-
0.13203		-0.13414	-0.03864	-0.34356			
SK33	SK33	Product inspection		0.30228	0.03849	0.10903	-
0.10084		-0.24042	-0.16926	-0.12754			
SK34	SK34	Equipment maintenance		0.77303	-0.26243	0.09195	-
0.16806		-0.13733	-0.12669	-0.29182			
SK35	SK35	Troubleshooting		0.67873	-0.07136	0.07331	-
0.17171		-0.09678	-0.14070	-0.15622			
SK36	SK36	Repairing		0.73766	-0.25764	0.01917	-
0.20599		-0.16344	-0.17474	-0.29530			
SK44	SK44	Management of financial resources		-0.36517	0.42224	-0.10469	-
0.06850		0.13109	0.03688	0.40210			
SK45	SK45	Management of material resources		-0.11806	0.22840	0.03743	-
0.13689		0.11659	0.08144	0.38800			

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KN33	SK3	SK4	SK27	KN29	KN31	KN32	
GWA4	GWA4	Inspecting equipment, structures or materials		0.26287	-0.07795	-0.23733	
0.08614		-0.17203	-0.27011	0.51513			
GWA5	GWA5	Estimating the characteristics of materials, products, events or information		0.16838	0.16233	0.20649	
0.13529		0.29711	0.29007	0.15666			
GWA14	GWA14	Scheduling work and activities		0.11018	0.29528	0.47279	
0.06610		0.53296	0.66739	-0.22704			
GWA16	GWA16	Performing general physical activities		0.17751	-0.26724	-0.47471	
0.12610		-0.59014	-0.43600	0.36663			
GWA17	GWA17	Handling and moving objects		-0.07029	-0.32484	-0.52354	-
0.04494		-0.67660	-0.69485	0.52942			
GWA18	GWA18	Controlling machines and processes		-0.02598	-0.28616	-0.41455	-
0.07997		-0.53625	-0.61001	0.48412			
GWA19	GWA19	Interacting with computers		0.02472	0.36188	0.50936	-
0.08739		0.57556	0.45867	-0.25665			
GWA20	GWA20	Operating vehicles, mechanized devices, or equipment		0.36355	0.11372	-0.08755	-
0.63836		-0.17250	-0.06424	0.07890			
GWA21	GWA21	Drafting, laying-out, and specifying technical devices, parts and equipment		0.03834	0.00363	0.08397	-
0.10549		0.08878	0.01064	0.40663			
GWA22	GWA22	Implementing ideas, programs, systems or products		-0.00185	0.02560	0.20076	-
0.16164		0.25352	0.20380	0.21826			
GWA23	GWA23	Repairing and maintaining mechanical equipment		0.08796	-0.16913	-0.34413	-
0.09319		-0.38809	-0.43664	0.47101			
GWA24	GWA24	Repairing and maintaining electronic equipment		0.12436	0.26821	-0.06523	-
0.00958		-0.09248	-0.14124	0.33560			
GWA25	GWA25	Documenting/recording information		0.18661	0.32447	0.40552	-
0.08922		0.75619	0.56067	-0.34324			
GWA27	GWA27	Communicating with supervisors, peers or subordinates		0.26019	0.39090	0.54231	-
0.14592		0.65865	0.72960	-0.27612			
GWA28	GWA28	Communicating with persons outside the organizations		0.15538	0.42628	0.55496	-
0.10195		0.63445	0.81255	-0.46640			
GWA40	GWA40	Performing administrative activities		0.13294	0.34735	0.43880	-
0.09112		0.65583	0.59674	-0.39796			
GWA41	GWA41	Staffing organizational units		0.05774	0.12516	0.32254	-
0.00429		0.32107	0.38158	-0.15279			
KN2	KN2	Clerical		0.03346	0.37111	0.38641	-
0.07342		0.53897	0.42861	-0.43149			
KN3	KN3	Economics and Accounting		0.03644	0.28505	0.36223	-
0.05927		0.46418	0.49438	-0.36634			
KN4	KN4	Sales and Marketing		-0.01101	0.22205	0.36557	-
0.07313		0.23218	0.41044	-0.25381			
KN5	KN5	Customer and Personal Service		0.11584	0.22871	0.20291	-

0.13351	0.14584	0.42711	-0.36746			
KN6	KN6 Personnel and Human Resources			0.14073	0.17454	0.32841
0.07189	0.41762	0.50041	-0.19307			
KN7	KN7 Production and Processing			-0.05948	-0.28665	-0.22653
0.07388	-0.28187	-0.41021	0.33451			
KN8	KN8 Food Production			0.03286	-0.08175	-0.03986
0.03801	0.05204	0.05123	-0.00613			
KN9	KN9 Computers and Electronics			0.08369	0.50926	0.40229
0.02291	0.43303	0.31151	-0.04601			
KN10	KN10 Engineering and Technology			0.20546	-0.03192	-0.18724
0.02413	-0.18674	-0.25882	0.56855			
KN11	KN11 Design			0.02325	-0.02746	-0.05827
0.11180	-0.11932	-0.15917	0.45385			
KN12	KN12 Building and Construction			0.08380	-0.19090	-0.27257
0.01250	-0.35166	-0.30321	0.43235			
KN13	KN13 Mechanical			0.13974	-0.20270	-0.43109
0.08158	-0.49933	-0.52522	0.59560			
KN14	KN14 Mathematics			0.09517	0.17702	0.29266
0.02211	0.49631	0.37068	-0.12047			
KN16	KN16 Chemistry			0.16916	-0.16421	-0.07493
0.10224	0.03735	-0.06253	0.27733			
KN17	KN17 Biology			0.07313	-0.10322	0.01882
0.09007	0.21634	0.20262	0.06813			
KN20	KN20 Geography			0.34318	0.38101	0.30435
0.58488	0.22900	0.32973	-0.19683			
KN21	KN21 Medicine and Dentistry			0.19482	0.02092	0.05312
0.01169	0.19722	0.28387	0.01862			
KN23	KN23 Education and Training			0.19643	0.20908	0.43362
0.02108	0.48214	0.64397	-0.14155			
KN29	KN29 Public Safety and Security			1.00000	0.26192	0.13225
0.44232	0.12268	0.24291	0.01542			
KN31	KN31 Telecommunications			0.26192	1.00000	0.49866
0.28982	0.36125	0.45823	-0.19293			
KN32	KN32 Communications and Media			0.13225	0.49866	1.00000
0.10972	0.57949	0.58047	-0.33855			
KN33	KN33 Transportation			0.44232	0.28982	0.10972
1.00000	0.02568	0.15350	-0.08300			
SK3	SK3 Writing			0.12268	0.36125	0.57949
0.02568	1.00000	0.74289	-0.29850			
SK4	SK4 Speaking			0.24291	0.45823	0.58047
0.15350	0.74289	1.00000	-0.37975			
SK27	SK27 Equipment selection			0.01542	-0.19293	-0.33855
0.08300	-0.29850	-0.37975	1.00000			
SK28	SK28 Installation			-0.01946	-0.10335	-0.33889
0.08083	-0.38243	-0.41983	0.60387			
SK29	SK29 Programming			-0.02358	0.16299	0.17290
0.12222	0.37926	0.22963	0.10238			
SK30	SK30 Testing			0.19740	0.06177	-0.12446
0.05160	0.06090	-0.09016	0.53816			
SK31	SK31 Operation monitoring			0.18548	-0.01577	-0.23283
0.12535	-0.20506	-0.32122	0.47164			
SK32	SK32 Operation and control			0.05760	-0.08761	-0.31506
0.10102	-0.37737	-0.46558	0.49439			
SK33	SK33 Product inspection			-0.04818	-0.12311	-0.12262
0.19966	0.01819	-0.19274	0.47580			
SK34	SK34 Equipment maintenance			0.10932	-0.11192	-0.36949
0.12014	-0.37478	-0.44809	0.51703			
SK35	SK35 Troubleshooting			0.20566	0.07293	-0.24209
0.10173	-0.15437	-0.22423	0.53114			
SK36	SK36 Repairing			0.00998	-0.09231	-0.38199
0.03859	-0.36403	-0.41956	0.53371			
SK44	SK44 Management of financial resources			0.03312	0.22349	0.35063
0.01756	0.53057	0.54602	-0.19830			
SK45	SK45 Management of material resources			0.12173	0.14963	0.23392
0.09118	0.39078	0.42701	0.18967			

Correlations

				SK28	SK29	SK30
SK31	SK32	SK33	SK34			
GWA4	GWA4 Inspecting equipment, structures or materials			0.51764	0.02040	0.61629
0.56236	0.41891	0.48685	0.60564			
GWA5	GWA5 Estimating the characteristics of materials, products, events or information			-0.03135	0.21912	0.13557
0.05011	-0.12294	0.15258	-0.09600			
GWA14	GWA14 Scheduling work and activities			-0.30888	0.16731	-0.14106
0.31965	-0.38497	-0.11391	-0.35102			
GWA16	GWA16 Performing general physical activities			0.41314	-0.33427	0.05815
0.23988	0.32913	-0.01063	0.44617			
GWA17	GWA17 Handling and moving objects			0.49193	-0.22160	0.19156
0.41484	0.56669	0.23806	0.51475			
GWA18	GWA18 Controlling machines and processes			0.42634	-0.19106	0.31278
0.64068	0.73987	0.25868	0.55994			
GWA19	GWA19 Interacting with computers			-0.24415	0.57967	0.03119
0.17435	-0.27145	-0.03035	-0.36017			
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment			0.09261	-0.16230	0.01986
0.25346	0.28474	-0.16316	0.33683			
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment			0.23098	0.33403	0.33217
0.08976	0.03133	0.33761	0.02925			
GWA22	GWA22 Implementing ideas, programs, systems or products			0.12431	0.30733	0.23174
0.05545	-0.14177	0.20359	-0.05665			
GWA23	GWA23 Repairing and maintaining mechanical equipment			0.61986	-0.18006	0.45678
0.58781	0.53775	0.21983	0.82569			
GWA24	GWA24 Repairing and maintaining electronic equipment			0.54121	0.10747	0.57992
0.42569	0.27243	0.16596	0.51525			
GWA25	GWA25 Documenting/recording information			-0.33860	0.26921	0.05051
0.08873	-0.25982	-0.05440	-0.25422			
GWA27	GWA27 Communicating with supervisors, peers or subordinates			-0.32480	0.28860	-0.05382
0.17939	-0.31975	-0.15599	-0.30771			
GWA28	GWA28 Communicating with persons outside the organizations			-0.44074	0.16358	-0.22006
0.47961	-0.57220	-0.29187	-0.50137			
GWA40	GWA40 Performing administrative activities			-0.34345	0.16684	-0.10874
0.23175	-0.33855	-0.09458	-0.30548			
GWA41	GWA41 Staffing organizational units			-0.18333	0.05428	-0.13186
0.21682	-0.25535	-0.02446	-0.20239			
KN2	KN2 Clerical			-0.34713	0.13590	-0.18665
0.19755	-0.23072	-0.11552	-0.28491			
KN3	KN3 Economics and Accounting			-0.31740	0.10934	-0.21931

0.38531	-0.43885	-0.09593	-0.37748				
KN4	KN4 Sales and Marketing			-0.20829	0.00823	-0.20707	-
0.33465	-0.35387	-0.13941	-0.26948				
KN5	KN5 Customer and Personal Service			-0.27807	-0.06697	-0.29682	-
0.33909	-0.33787	-0.32797	-0.26525				
KN6	KN6 Personnel and Human Resources			-0.23243	0.09657	-0.11323	-
0.22165	-0.28545	-0.03278	-0.22683				
KN7	KN7 Production and Processing			0.22595	-0.06020	0.23218	-
0.35498	0.37447	0.42556	0.27214				
KN8	KN8 Food Production			-0.08488	-0.00716	0.02194	-
0.04222	-0.07850	0.07480	-0.03184				
KN9	KN9 Computers and Electronics			0.03227	0.50248	0.29824	-
0.08879	-0.05027	0.07457	-0.07208				
KN10	KN10 Engineering and Technology			0.54756	0.11255	0.59211	-
0.51254	0.40029	0.31112	0.47849				
KN11	KN11 Design			0.36161	0.16538	0.32616	-
0.11864	0.08702	0.38836	0.12655				
KN12	KN12 Building and Construction			0.47305	-0.09920	0.14056	-
0.08248	0.15076	0.22830	0.23807				
KN13	KN13 Mechanical			0.66733	-0.18127	0.48562	-
0.63269	0.61406	0.30228	0.77303				
KN14	KN14 Mathematics			-0.18479	0.40490	0.12810	-
0.10217	-0.25532	0.03849	-0.26243				
KN16	KN16 Chemistry			0.01065	0.03618	0.28657	-
0.21411	0.15818	0.10903	0.09195				
KN17	KN17 Biology			-0.19654	0.07234	0.03712	-
0.08912	-0.13203	-0.10084	-0.16806				
KN20	KN20 Geography			-0.21842	0.02410	-0.13590	-
0.10916	-0.13414	-0.24042	-0.13733				
KN21	KN21 Medicine and Dentistry			-0.15999	-0.01534	0.00779	-
0.02029	-0.03864	-0.16926	-0.12669				
KN23	KN23 Education and Training			-0.23875	0.20316	-0.02366	-
0.24007	-0.34356	-0.12754	-0.29182				
KN29	KN29 Public Safety and Security			-0.01946	-0.02358	0.19740	-
0.18548	0.05760	-0.04818	0.10932				
KN31	KN31 Telecommunications			-0.10335	0.16299	0.06177	-
0.01577	-0.08761	-0.12311	-0.11192				

PRINCIPAL AXES ANALYSIS OF CONCRETE-IMPORTANCE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure

Correlations

SK31	SK32	SK33	SK34	SK28	SK29	SK30
KN32	KN32 Communications and Media			-0.33889	0.17290	-0.12446
0.23283	-0.31506	-0.12262	-0.36949			
KN33	KN33 Transportation			-0.08083	-0.12222	-0.05160
0.12535	0.10102	-0.19966	0.12014			
SK3	SK3 Writing			-0.38243	0.37926	0.06090
0.20506	-0.37737	0.01819	-0.37478			
SK4	SK4 Speaking			-0.41983	0.22963	-0.09016
0.32122	-0.46558	-0.19274	-0.44809			
SK27	SK27 Equipment selection			0.60387	0.10238	0.53816
0.47164	0.49439	0.47580	0.51703			
SK28	SK28 Installation			1.00000	0.00317	0.54282
0.45241	0.41271	0.34884	0.65168			
SK29	SK29 Programming			0.00317	1.00000	0.27154
0.05667	-0.06944	0.10494	-0.12921			
SK30	SK30 Testing			0.54282	0.27154	1.00000
0.61594	0.37713	0.49699	0.50638			
SK31	SK31 Operation monitoring			0.45241	0.05667	0.61594
1.00000	0.83350	0.33069	0.68439			
SK32	SK32 Operation and control			0.41271	-0.06944	0.37713
0.83350	1.00000	0.29191	0.61238			
SK33	SK33 Product inspection			0.34884	0.10494	0.49699
0.33069	0.29191	1.00000	0.27629			
SK34	SK34 Equipment maintenance			0.65168	-0.12921	0.50638
0.68439	0.61238	0.27629	1.00000			
SK35	SK35 Troubleshooting			0.68454	0.10893	0.73486
0.65900	0.48702	0.37320	0.78562			
SK36	SK36 Repairing			0.74148	-0.11773	0.51765
0.52674	0.46783	0.28261	0.84069			
SK44	SK44 Management of financial resources			-0.26400	0.18524	-0.12040
0.33352	-0.38908	0.00700	-0.33501			
SK45	SK45 Management of material resources			0.00364	0.21207	0.13596
0.06195	-0.12553	0.23375	-0.06987			

Correlations

SK44	SK45	SK35	SK36	
	GWA4	GWA4 Inspecting equipment, structures or materials	0.68934	0.57610
-0.16880	0.14133			
	GWA5	GWA5 Estimating the characteristics of materials, products, events or information	0.07151	-0.07915
0.42631	0.47428			
	GWA14	GWA14 Scheduling work and activities	-0.18751	-0.32705
0.62922	0.56900			
	GWA16	GWA16 Performing general physical activities	0.27811	0.42368
-0.41045	-0.14953			
	GWA17	GWA17 Handling and moving objects	0.31935	0.48252
-0.54012	-0.27058			
	GWA18	GWA18 Controlling machines and processes	0.37035	0.45400
-0.48656	-0.26265			
	GWA19	GWA19 Interacting with computers	-0.13778	-0.34598
0.31561	0.17411			
	GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.24712	0.24738
-0.12548	-0.02231			
	GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.23518	0.08194
0.09151	0.28979			
	GWA22	GWA22 Implementing ideas, programs, systems or products	0.07270	-0.01246
0.29706	0.37926			
	GWA23	GWA23 Repairing and maintaining mechanical equipment	0.69728	0.80090

0.85037174	0.67789677	0.53412817	0.70208719	0.53331389	0.60340969	0.57965296	0.50254513	0.57885624	0.62786593						
0.64273912	0.83522712	0.85007041	0.73499834												
SK36	SK28	SK44	SK29	SK45	SK30	SK31	SK32	SK33	SK34	SK35					
	0.71841270		0.58520071		0.78647813		0.85636198		0.83659942		0.60025061		0.85485201		0.85962707
0.84768990		0.79828413		0.67865100											

Eigenvalues of the Reduced Correlation Matrix: Total = 37.3386006 Average = 0.7045019

	Eigenvalue	Difference	Proportion	Cumulative
1	14.9227677	8.5071732	0.3997	0.3997
2	6.4155945	3.2493162	0.1718	0.5715
3	3.1662783	0.3727221	0.0848	0.6563
4	2.7935561	0.4128749	0.0748	0.7311
5	2.3806812	0.5689365	0.0638	0.7949
6	1.8117447	0.3304691	0.0485	0.8434
7	1.4812757	0.4859674	0.0397	0.8831
8	0.9953082	0.1178990	0.0267	0.9097
9	0.8774093	0.1665801	0.0235	0.9332
10	0.7108292	0.0845862	0.0190	0.9522
11	0.6262430	0.0527215	0.0168	0.9690
12	0.5735215	0.0430870	0.0154	0.9844
13	0.5304346	0.0593147	0.0142	0.9986
14	0.4711199	0.0865744	0.0126	1.0112
15	0.3845455	0.0560789	0.0103	1.0215
16	0.3284666	0.0746858	0.0088	1.0303
17	0.2537808	0.0331976	0.0068	1.0371
18	0.2205832	0.0631641	0.0059	1.0430
19	0.1574191	0.0274746	0.0042	1.0472
20	0.1299445	0.0089047	0.0035	1.0507
21	0.1210398	0.0276901	0.0032	1.0539
22	0.0933497	0.0197819	0.0025	1.0564
23	0.0735678	0.0160193	0.0020	1.0584
24	0.0575485	0.0327639	0.0015	1.0599
25	0.0247847	0.0083568	0.0007	1.0606
26	0.0164279	0.0006269	0.0004	1.0611
27	0.0158010	0.0138565	0.0004	1.0615
28	0.0019444	0.0025687	0.0001	1.0615
29	-0.0006242	0.0130493	-0.0000	1.0615
30	-0.0136735	0.0138986	-0.0004	1.0611
31	-0.0275721	0.0077602	-0.0007	1.0604
32	-0.0353323	0.0037984	-0.0009	1.0595
33	-0.0391307	0.0085547	-0.0010	1.0584
34	-0.0476854	0.0026866	-0.0013	1.0571
35	-0.0503720	0.0035084	-0.0013	1.0558
36	-0.0538804	0.0084184	-0.0014	1.0543
37	-0.0622988	0.0077071	-0.0017	1.0527
38	-0.0700059	0.0067428	-0.0019	1.0508
39	-0.0767488	0.0099912	-0.0021	1.0487
40	-0.0867399	0.0027943	-0.0023	1.0464
41	-0.0895343	0.0036919	-0.0024	1.0440
42	-0.0932261	0.0032215	-0.0025	1.0415
43	-0.0964477	0.0056711	-0.0026	1.0389
44	-0.1021188	0.0160630	-0.0027	1.0362
45	-0.1181818	0.0022473	-0.0032	1.0330
46	-0.1204291	0.0081974	-0.0032	1.0298
47	-0.1286265	0.0060668	-0.0034	1.0264
48	-0.1346932	0.0089856	-0.0036	1.0228
49	-0.1436789	0.0077685	-0.0038	1.0189
50	-0.1514473	0.0153234	-0.0041	1.0149
51	-0.1667707	0.0153765	-0.0045	1.0104
52	-0.1821472	0.0238540	-0.0049	1.0055
53	-0.2060013		-0.0055	1.0000

9 factors will be retained by the NFACTOR criterion.

PRINCIPAL AXES ANALYSIS OF CONCRETE-IMPORTANCE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3	4	5	6	7		
8									
	9								
		1							
0.13892		0.12257	-0.58414	0.51562	0.48462	-0.15775	0.06110	-0.30344	0.05515
		2	0.62143	0.44643	0.44683	0.42399	0.11442	0.08032	0.08242
-0.07645		0.05395							
		3	0.29483	-0.03807	0.03156	-0.56820	0.72203	-0.03481	0.02220
0.25233		-0.03287							
		4	-0.04529	0.60672	-0.74319	0.14599	0.17816	-0.04106	0.13240
0.04630		0.05562							
		5	-0.00159	-0.04305	0.04493	-0.16641	-0.14325	0.14969	0.95011
-0.05629		-0.14006							
		6	-0.25930	-0.32992	0.02605	0.61822	0.52116	-0.27116	0.18113
0.06585		-0.24241							
		7	-0.30449	-0.01076	0.06440	0.04312	0.36215	0.65714	-0.01868
-0.45342		0.36365							

0.47786	8	0.06446	-0.21540	-0.03924	0.15082	-0.05556	-0.06453	0.16859
	0.81310							
0.68381	9	-0.13969	0.08975	0.06149	0.12920	-0.06113	0.60551	-0.08858
	-0.32578							

Rotated Factor Pattern

Factor3	Factor4	Factor5	Factor1	Factor2
GWA4	GWA4 Inspecting equipment, structures or materials		0.68437	0.04499
0.08525	0.24718	0.08645		
GWA5	GWA5 Estimating the characteristics of materials, products, events or information		0.02589	0.49998
0.13238	0.37387	0.16183		
GWA14	GWA14 Scheduling work and activities		-0.17370	0.79382
0.23490	-0.01454	0.05228		
GWA16	GWA16 Performing general physical activities		0.32017	-0.22798
0.61524	0.05024	0.20292		
GWA17	GWA17 Handling and moving objects		0.36041	-0.44210
0.43415	0.13964	-0.11734		
GWA18	GWA18 Controlling machines and processes		0.41831	-0.32870
0.26594	0.07348	-0.07604		
GWA19	GWA19 Interacting with computers		-0.16346	0.18072
0.79826	0.11388	-0.08189		
GWA20	GWA20 Operating vehicles, mechanized devices, or equipment		0.21807	-0.04988
0.22030	-0.09716	0.70122		
GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment		0.13086	0.11711
0.15014	0.78689	-0.04368		
GWA22	GWA22 Implementing ideas, programs, systems or products		0.08086	0.40537
0.14929	0.40404	-0.18973		
GWA23	GWA23 Repairing and maintaining mechanical equipment		0.78506	-0.16840
0.26118	-0.02878	0.09326		
GWA24	GWA24 Repairing and maintaining electronic equipment		0.70877	-0.11073
0.26458	0.12091	-0.01765		
GWA25	GWA25 Documenting/recording information		-0.07063	0.25628
0.68620	-0.17584	0.11684		
GWA27	GWA27 Communicating with supervisors, peers or subordinates		-0.13626	0.59854
0.47376	-0.02508	0.21630		
GWA28	GWA28 Communicating with persons outside the organizations		-0.30589	0.44954
0.39895	-0.08828	0.16277		
GWA40	GWA40 Performing administrative activities		-0.11114	0.54751
0.52188	-0.20222	0.05432		
GWA41	GWA41 Staffing organizational units		-0.09719	0.82096
0.02339	-0.08703	-0.05253		
KN2	KN2 Clerical		-0.17402	0.11663
0.60847	-0.32284	0.03008		
KN3	KN3 Economics and Accounting		-0.23146	0.51853
0.28214	-0.03153	0.03249		
KN4	KN4 Sales and Marketing		-0.19080	0.39921
0.07090	0.03073	0.06635		
KN5	KN5 Customer and Personal Service		-0.21499	0.21989
0.07390	-0.18029	0.10176		
KN6	KN6 Personnel and Human Resources		-0.11269	0.80952
0.10397	-0.10969	0.01823		
KN7	KN7 Production and Processing		0.15231	-0.04778
0.18421	0.26804	-0.14742		
KN8	KN8 Food Production		-0.03590	0.14570
0.12753	-0.06857	0.01981		
KN9	KN9 Computers and Electronics		0.17638	0.02120
0.82148	0.14105	-0.02897		
KN10	KN10 Engineering and Technology		0.56398	-0.11611
0.01574	0.55415	0.12431		
KN11	KN11 Design		0.18182	-0.04756
0.00760	0.82053	-0.04926		
KN12	KN12 Building and Construction		0.24210	-0.07538
0.39964	0.50031	0.04576		
KN13	KN13 Mechanical		0.72646	-0.19929
0.34316	0.18288	0.10374		
KN14	KN14 Mathematics		-0.10353	0.24125
0.52048	0.28517	0.04535		
KN16	KN16 Chemistry		0.09809	-0.05070
0.00148	0.09886	-0.01963		
KN17	KN17 Biology		-0.12040	0.06773
0.01215	-0.03215	-0.03899		
KN20	KN20 Geography		-0.15996	0.07776
0.15717	0.03983	0.67166		
KN21	KN21 Medicine and Dentistry		-0.06429	0.05935
0.08511	-0.11217	0.02242		
KN23	KN23 Education and Training		-0.13919	0.53005
0.25538	0.02463	0.07020		
KN29	KN29 Public Safety and Security		0.15714	0.12043
0.08520	0.06536	0.57947		
KN31	KN31 Telecommunications		0.04747	0.16670
0.50696	-0.04420	0.35603		
KN32	KN32 Communications and Media		-0.26128	0.35432
0.51230	0.00658	0.17729		
KN33	KN33 Transportation		0.04154	0.05653
0.02748	-0.09197	0.79581		
SK3	SK3 Writing		-0.16180	0.42710
0.66783	-0.06627	0.06780		
SK4	SK4 Speaking		-0.23878	0.54203
0.46681	-0.07131	0.23582		
SK27	SK27 Equipment selection		0.53652	-0.03978
0.23678	0.46727	-0.09875		
SK28	SK28 Installation		0.73714	-0.13134
0.20428	0.26630	-0.13368		
SK29	SK29 Programming		0.02536	0.09226
0.53249	0.28381	-0.11384		
SK30	SK30 Testing		0.71794	-0.02631
0.23922	0.26637	-0.04258		
SK31	SK31 Operation monitoring		0.64447	-0.16556
0.07662	-0.03122	0.15287		
SK32	SK32 Operation and control		0.48064	-0.23262
0.10069	-0.04299	0.11381		
SK33	SK33 Product inspection		0.35076	0.08653
0.02324	0.31682	-0.25977		
SK34	SK34 Equipment maintenance		0.84254	-0.14342
0.22452	-0.07522	0.08882		
SK35	SK35 Troubleshooting		0.90463	-0.02408

0.02516	0.12135	0.09600		
SK36	SK36 Repairing		0.86899	-0.14222
0.24329	0.01664	-0.01774		
SK44	SK44 Management of financial resources		-0.16341	0.73880
0.17879	0.05680	-0.03066		
SK45	SK45 Management of material resources		0.07546	0.71057
0.06330	0.24091	0.04671		

			Rotated Factor Pattern	
Factor8	Factor9		Factor6	Factor7
	GWA4	GWA4 Inspecting equipment, structures or materials	0.23465	0.10902
-0.14115	0.05281			
	GWA5	GWA5 Estimating the characteristics of materials, products, events or information	0.01954	0.12043
-0.05293	0.13752			
	GWA14	GWA14 Scheduling work and activities	-0.12002	0.10712
0.14526	-0.01818			
	GWA16	GWA16 Performing general physical activities	0.10899	0.14196
0.19289	-0.06539			
	GWA17	GWA17 Handling and moving objects	0.41819	0.02964
0.16999	-0.11184			
	GWA18	GWA18 Controlling machines and processes	0.63362	0.07888
0.01150	-0.04736			
	GWA19	GWA19 Interacting with computers	-0.02904	-0.03386
0.10523	0.06199			
	GWA20	GWA20 Operating vehicles, mechanized devices, or equipment	0.03866	-0.03154
-0.00016	-0.00992			
	GWA21	GWA21 Drafting, laying-out, and specifying technical devices, parts and equipment	0.07036	0.02381
-0.05036	-0.00570			
	GWA22	GWA22 Implementing ideas, programs, systems or products	-0.06346	0.14042
-0.02807	-0.11226			
	GWA23	GWA23 Repairing and maintaining mechanical equipment	0.17051	-0.04842
0.00352	0.08609			
	GWA24	GWA24 Repairing and maintaining electronic equipment	-0.04110	-0.05831
0.17821	-0.14563			
	GWA25	GWA25 Documenting/recording information	-0.02976	0.25047
0.03949	0.35815			
	GWA27	GWA27 Communicating with supervisors, peers or subordinates	-0.10829	0.14260
0.03796	-0.02484			
	GWA28	GWA28 Communicating with persons outside the organizations	-0.40972	0.14020
0.34891	0.09545			
	GWA40	GWA40 Performing administrative activities	-0.00459	0.08144
0.20359	0.37092			
	GWA41	GWA41 Staffing organizational units	0.05415	-0.06755
0.03340	0.01442			
	KN2	KN2 Clerical	0.01386	-0.02231
0.23785	0.30161			
	KN3	KN3 Economics and Accounting	-0.15942	-0.19162
0.13659	0.50605			
	KN4	KN4 Sales and Marketing	-0.16572	-0.13592
0.32645	0.23492			
	KN5	KN5 Customer and Personal Service	-0.18074	0.07197
0.61494	0.04118			
	KN6	KN6 Personnel and Human Resources	-0.00623	-0.04443
-0.01514	0.01004			
	KN7	KN7 Production and Processing	0.52387	-0.05892
-0.23462	0.17925			
	KN8	KN8 Food Production	-0.01884	0.34054
-0.14745	0.17616			
	KN9	KN9 Computers and Electronics	-0.06416	-0.12630
0.11284	-0.12183			
	KN10	KN10 Engineering and Technology	0.19822	-0.00659
-0.10770	0.00796			
	KN11	KN11 Design	0.04125	-0.14935
-0.01925	0.01518			
	KN12	KN12 Building and Construction	-0.03427	-0.13559
-0.00475	0.03016			
	KN13	KN13 Mechanical	0.28477	-0.08982
-0.01981	0.02142			
	KN14	KN14 Mathematics	-0.01664	0.07082
-0.04963	0.43449			
	KN16	KN16 Chemistry	0.17647	0.66776
-0.07724	0.02467			
	KN17	KN17 Biology	-0.11745	0.83416
0.01631	-0.01837			
	KN20	KN20 Geography	-0.14695	-0.06793
0.03192	0.04962			
	KN21	KN21 Medicine and Dentistry	-0.05547	0.66893
0.28216	-0.16891			
	KN23	KN23 Education and Training	-0.21102	0.21917
0.13693	-0.16847			
	KN29	KN29 Public Safety and Security	0.02178	0.20106
0.06677	-0.02674			
	KN31	KN31 Telecommunications	-0.13565	-0.18104
0.20857	-0.13736			

PRINCIPAL AXES ANALYSIS OF CONCRETE-IMPORTANCE
VARIMAX ROTATION OF 9 FACTORS

The FACTOR Procedure
Rotation Method: Varimax

			Rotated Factor Pattern	
Factor8	Factor9		Factor6	Factor7
	KN32	KN32 Communications and Media	-0.10392	-0.08183
0.09454	-0.12035			
	KN33	KN33 Transportation	0.02990	-0.07701
0.01616	0.04367			
	SK3	SK3 Writing	-0.23651	0.19342
-0.16095	0.12722			

0.13680	SK4	SK4 Speaking	-0.34646	0.15843
	-0.04635			
-0.12589	SK27	SK27 Equipment selection	0.21263	0.18232
	-0.16420			
0.03064	SK28	SK28 Installation	0.00710	-0.12149
	-0.08398			
-0.18772	SK29	SK29 Programming	-0.08039	0.05841
	-0.09883			
-0.24622	SK30	SK30 Testing	0.05095	0.20094
	-0.06393			
-0.21568	SK31	SK31 Operation monitoring	0.52313	0.08489
	-0.15766			
-0.11853	SK32	SK32 Operation and control	0.65233	0.00515
	-0.20421			
-0.31578	SK33	SK33 Product inspection	0.23847	0.00253
	0.09875			
-0.05610	SK34	SK34 Equipment maintenance	0.19274	-0.04637
	-0.02092			
-0.12958	SK35	SK35 Troubleshooting	0.01763	-0.05151
	-0.04415			
-0.01825	SK36	SK36 Repairing	-0.02733	-0.12489
	0.00145			
0.01715	SK44	SK44 Management of financial resources	-0.18221	-0.05631
	0.27989			
-0.03975	SK45	SK45 Management of material resources	-0.04164	0.10809
	0.03272			

Variance Explained by Each Factor

Factor8	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
	Factor9						
1.4905592	8.1309045	6.5340974	6.3487135	3.4048543	2.6206063	2.5760258	2.3837240
	1.3551306						

Final Communality Estimates: Total = 34.844616

GWA4	GWA5	GWA14	GWA16	GWA17	GWA18	GWA19	GWA20	GWA21	GWA22
GWA23	GWA24	GWA25	GWA27						
0.63588350	0.47074302	0.76574355	0.65021603	0.76426411	0.77501039	0.73317546	0.60231403	0.68256423	0.42953264
0.76126158	0.65760152	0.77955606	0.68280483						
GWA28	GWA40	GWA41	KN2	KN3	KN4	KN5	KN6	KN7	KN8
KN9	KN10	KN11	KN12						
0.80748127	0.81399876	0.70312657	0.66748086	0.74096967	0.41383810	0.56058009	0.69353819	0.51808072	0.21296939
0.77475776	0.70533776	0.73568316	0.49690420						
KN13	KN14	KN16	KN17	KN20	KN21	KN23	KN29	KN31	KN32
KN33	SK3	SK4	SK27						
0.81944043	0.61972901	0.50596897	0.73200936	0.53874649	0.58667826	0.51077273	0.43258611	0.52930363	0.52865635
0.65643681	0.79902263	0.79541793	0.69485577						
SK36	SK28	SK29	SK30	SK31	SK32	SK33	SK34	SK35	
	SK44	SK45							
	0.71394285	0.44108887	0.75381170	0.82521421	0.79136735	0.46525951	0.83727684	0.86520985	
0.85183777	0.72366554	0.59089930							

Appendix F.

Tucker's Coefficient of Congruence Summary Tables

Knowledge Level Scale	
F1-F1' CONG	.995
F2-F2' CONG	.996
F3-F3' CONG	.992
F4-F4' CONG	.989
F5-F5' CONG	.991
F6-F6' CONG	.988
F7-F7' CONG	.975
F8-F8' CONG	.954
min	.954
max	.996
mean	.975

Knowledge Importance Scale	
F1-F1' CONG	.992
F2-F5' CONG	.987
F3-F4' CONG	.985
F4-F3' CONG	.990
F5-F2' CONG	.993
F6-F6' CONG	.991
F7-F7' CONG	.973
F8-F8' CONG	.979
F9-F9' CONG	.947
min	.947
max	.993
mean	.982

Skill Level Scale	
-	-
F1-F1' CONG	.997
F2-F2' CONG	.993
F3-F3' CONG	.982
F4-F4' CONG	.970
F5-F5' CONG	-.732
min	-.732
max	.997
mean	.935

Skill Importance Scale	
-	-
F1-F1' CONG	.985
F2-F5' CONG	.922
F3-F2' CONG	.990
F4-F3' CONG	.992
F5-F4' CONG	.872
F6-F7' CONG	.964
F7-F6' CONG	.882
min	.872
max	.992
mean	.944

GWA Level Scale	
-	-
F1-F1' CONG	.999
F2-F2' CONG	.998
F3-F3' CONG	.995
F4-F4' CONG	.991
F5-F5' CONG	.960
F6-F6' CONG	.966
min	.960
max	.999
mean	.985

GWA Importance Scale	
-	-
F1-F1' CONG	.994
F2-F2' CONG	.996
F3-F3' CONG	.992
F4-F4' CONG	.986
F5-F5' CONG	.993
F6-F6' CONG	.914
F7-F7' CONG	.968
min	.914
max	.996
mean	.978

Abstract Level Scale	
F1-F1' CONG	.999
F2-F3' CONG	.996
F3-F2' CONG	.998
F4-F5' CONG	.996
F5-F4' CONG	.994
min	.994
max	.999
mean	.997

Abstract Importance	
F1-F1' CONG	.998
F2-F2' CONG	.994
F3-F3' CONG	.990
F4-F4' CONG	.993
F5-F5' CONG	.981
F6-F7' CONG	.896
F7-F6' CONG	.535
min	.535
max	.998
mean	.912

Concrete Level	
-	-
F1-F1' CONG	.994
F2-F2' CONG	.991
F3-F3' CONG	.990
F4-F4' CONG	.988
F5-F5' CONG	.981
F6-F6' CONG	.984
F7-F7' CONG	.864
F8-F8' CONG	.878
min	.864
max	.994
mean	.959

Concrete Importance	
-	-
F1-F1' CONG	.995
F2-F3' CONG	.996
F3-F2' CONG	.986
F4-F4' CONG	.990
F5-F6' CONG	.990
F6-F5' CONG	.975
F7-F7' CONG	.985
F8-F9' CONG	.829
F9-F8' CONG	.923
min	.829
max	.996
mean	.963