

guiding (Martin, 1982, p.332)

identifying appropriate methodologies (Wood-Harper and FitzGerald, 1982, p.12)

identifying competitive advantages (Slotnick, 1984, p.112)

information centre consulting (Barr and Kochen, 1984, p.169).

6.3.1.5 DATABASE DESIGNER GROUP (see section 6.2.4.3.2)

ROLES INCLUDED: Data element identifier, Logical data modeller,
Methodology expert, Tools expert

ROLE EXCLUDES: Task performer

ROLES/SKILLS LINK:

There are two distinct sets of skills in this role. The first concerns the physical data elements (Lee, 1981, p.223), and concerns skills which include:

- data element analyzing/identifying (Gore and Stubbe, 1983, p.191)

- designing data structures (Pressman, 1982, p.39)

- designing files (Lee, 1981, p.215)

- ensuring data independence (Lee, 1981, p.217)

- ensuring data integrity (Davenport, 1980, p.509)

- using appropriate tools (Thierauf, 1986, p.643).

The second set of skills ensures a separating of the physical and logical data structures (Lee, 1981, p.246). The skills within this group include:

- integrating data (Lee, 1981, p.216)

- logical data modelling (Martin, 1981, p.131)

normalizing data (Dickson and Wetherbe, 1985, p.213).

Other skills appropriate to these roles which were identified in the literature were:

determining system performance (Davenport, 1980, p.506)

providing input to the data dictionary (Dickson and Wetherbe, 1985, p.210)

using data dictionaries (Navathe and Kerschberg, 1986, p.21)

working with the DBA (Gore and Stubbe, 1983, p.368).

6.3.1.6 DEVELOPER GROUP (see section 6.2.4.3.3)

ROLES INCLUDED: Methodology expert, Programmer (4GL), Programmer (3GL), Reconciler, Reviewer, Specialist, Technical assessor, Technician, Tools expert

ROLES EXCLUDED: Estimator, Task performer, User

ROLES/SKILLS LINK:

The role of the systems developer is involved with the building of systems (Jackson, 1986, p.248) rather than analyzing system requirements (Gore and Stubbe, 1983, p.46).

As a methodology expert the future systems analyst will require skills in:

evaluating methodologies (by deduction from Capron, 1986, p.237)

evaluating technologies (Canning, 1984b, p.4)

reviewing (Boar, 1986, p.28)

skill: I.S. technology (Davis D, 1983, p.17)

skill: technical (McLeod and Forkner, 1982, p.308).

Various application development methods have been identified in the literature. Skills in each of these are considered necessary for the systems analyst of the future:

- generating applications (Martin, 1982, p.339)
- identifying appropriate development approach (Sumner, 1986, p.205)
- keeping abreast of technology (Ostle, 1985, p.37)
- programming (4GL) (Davis and Olson, 1985, p.426)
- programming (3GL) (Greenwood et al., 1986, p.12)
- structuring algorithms (by deduction from Ostle, 1985, p.31)
- testing (Davis and Olson, 1985, p.585)
- using appropriate tools (Thierauf, 1986, p.643)
- using automated development methods (Thierauf, 1986, p.643)
- using development workstations (Davis and Olson, 1985, p.413).

Another dimension of role is the responsibility of developing systems which can be audited (Martin, 1982, p.336). To achieve this skills in system controls and security are required (FitzGerald et al., 1981, p.193).

6.3.1.7 ESTIMATOR GROUP (see section 6.2.4.1.2)

ROLES INCLUDED: Cost estimator, Forecaster, Time estimator

ROLES EXCLUDED: Numerator

ROLES/SKILLS LINK:

To be able to function effectively in these roles, the following skills are needed:

- cost benefit analyzing/cost justifying (Harold, 1983, p.105)

critical-path analyzing (Capron, 1986, p.373)
decomposing tasks (by deduction from Gore and Stubbe, 1983, p.116)
estimating (resource requirements) (Keen, 1981, p.187)
estimating (time and cost) (Harold, 1983, p.105)
forecasting (by deduction from Bowman et al., 1983, p.15)

6.3.1.8 FACT FINDER (DATA GATHERER) GROUP (see section 6.2.4.2.3)

ROLES INCLUDED: Diplomat, Observer, Problem recognizer, Reviewer

ROLES EXCLUDED: Communicator

ROLES/SKILLS LINK:

To be able to function effectively in these roles the following skills are considered necessary:

evaluating information (Grindlay, 1981, p.15)
investigating (Lee, 1981, p.103)
keeping records (McLeod and Forkner, 1982, p.308)
observing (Wetherbe, 1979, p.97)
questioning (Lee, 1981, p.106)
recognizing problems (Wetherbe, 1979, p.97)
reviewing documents (Wetherbe, 1979, p.97)
sampling (Capron, 1986, p.110)
searching records (Lee, 1981, p.104)
using questionnaires (Wetherbe, 1979, p.97).

6.3.1.9 GENERALIST GROUP (see section 6.2.4.3.4)

Argument for the future systems analyst filling a generalist role is

presented in section 6.2.4.3.4. This argument received indirect, but strong support from the wide range of skills identified in this section (section 6.3.1). The skills required to cover each of the identified roles suggest the systems analyst of the future must be a generalist (see section 7.5.2.1).

6.3.1.10 IMPLEMENTOR GROUP (see section 6.2.4.3.5)

ROLES INCLUDED: Buyer, Converter of user procedures, Co-ordinator, Evaluator, File creator, Forecaster, Methodology expert, Organizer, Seller, Systems tester, Technical assessor, Technician, Test data designer, Tools expert

ROLES EXCLUDED: Change agent, Estimator, Instructor, Task performer

ROLES/SKILL LINK:

Some of the roles in this group (e.g. Buyer, Technician, Tools expert) were identified earlier in this section (e.g. in section 6.3.1.4 The Consultant Group). The skills required for these roles will not be repeated here.

The role of the implementor can be viewed from either the users' or a technical perspective. The skills required for this role from the users' perspective include:

- estimating (Harold, 1983, p.105)

- implementing appropriate systems (Clarke and Prins, 1986, p.32)

- skill: conversion procedures (Lee, 1981, p.419).

From the technical perspective the following skills are considered

necessary:

- file creating (Crocker, 1984, p.36)
- installing packages (Kindred, 1985, p.330)
- skill: hardware/software (Ostle, 1985, p.34)
- skill: teleprocessing (Harold, 1983, p.105)
- systems testing (Crocker, 1984, p.36)
- test data designing (Crocker, 1984, p.36).

Within this responsibility of implementing is the role of organizer. For this role at least the following skills are required (see also Project Manager Group, section 6.3.1.15):

- co-ordinating work (Capron, 1986, p.38)
- organizing (Keen, 1981, p.214)
- planning (Capron, 1986, p.39).

6.3.1.11 INSTRUCTOR GROUP (see section 6.2.4.2.4)

ROLES INCLUDED: Educator, Instructor, Seller, Teacher, Trainer

ROLES/SKILLS LINK:

To be effective in this group of roles, the future systems analyst will require skills which include:

- educating (Martin, 1982, p.335)
- instructing (by deduction from Cox and Snyder, 1985, p.247)
- selling ideas (FitzGerald et al., 1981, p.236)
- teaching (Watts et al., 1980, p.30)
- training (Jenkins, 1986, p.30).

6.3.1.12 INTERPERSONAL FACILITATOR GROUP (see section 6.2.4.2.5)

ROLES INCLUDED: Arbitrator/Mediator, Co-operator, Diplomat, Enabler/
Helper, Encourager, Facilitator, Motivator,
Participant, Politician, Supporter, Team member

ROLES/SKILLS LINK:

This group of roles represent the main thrust of the human side of computing (Shneiderman, 1987). The skills identified as necessary to be effective within these roles include:

- arbitrating (Harold, 1983, p.102)
- being diplomatic (Harold, 1983, p.102)
- being patient (Ostle, 1985, p.30)
- being politically aware (Davis and Olson, 1985, p.458)
- co-operating (Spock, 1985, p.114)
- enabling/helping (Martin, 1982, p.332)
- encouraging (Martin, 1982, p.334)
- facilitating (Rivard and Huff, 1985, p.90)
- functioning in a team (Semprevivo, 1982, p.66)
- motivating (Drucker, 1977, p.55)
- participating (Newman and Rosenberg, 1985, p.404)
- skill: interpersonal relationship (Ostle, 1985, p.30)
- skill: relating to people/organizations (Bendasat et al., 1980, p.30)
- supporting (Thomsett, 1980, p.43)
- working with/through others (Thierauf, 1986, p.5).

6.1.3.1.13 LEARNER GROUP (see section 6.2.4.2.6)

How people learn is a subject outside the discipline of systems analysis (e.g. Deese and Hulse, 1967). No attempt was made to explore the issues involved, other than at a superficial level. The skills listed in this section are based on the dictionary definition of 'learn' (Collins, 1979), and intuition.

ROLES INCLUDED: Acceptor, Listener, Observer, Understander

ROLES/SKILLS LINK:

- accepting -
- acquiring skills (Collins, 1979)
- becoming informed (Collins, 1979)
- comprehending -
- enhancing skills -
- gaining experience (Collins, 1979)
- gaining knowledge (Collins, 1979)
- listening (Nylen et al., 1967, p.119)
- observing (Capron, 1986, p.100)
- reading -
- remembering -
- understanding (by deduction from Leeson, 1981, p.53).

6.3.1.14 NUMERATOR GROUP (see section 6.2.4.2.7)

ROLES INCLUDED: Analytical modeller, Mathematical modeller, Mathematician, Statistician

ROLES/SKILLS LINK:

There is a group of literature references which suggest that the systems analyst must have numerate skills. To be able to fill the roles in this group it is suggested that the following skills are required:

analytical modelling (Harold, 1983, p.17)

mathematical modelling (Byrkett and Uckan, 1985, p.45)

mathematics (Byrkett and Uckan, 1985, p.45)

sampling (Capron, 1986, p.110)

statistics (Jenkins, 1986, p.32).

6.3.1.15 PROJECT MANAGER GROUP (see section 6.2.4.3.6)

ROLES INCLUDED: Advisor/Mentor, Appraiser, Controller, Co-ordinator, Delegator, Evaluator, Leader, Motivator, Organizer, Project planner, Scheduler

ROLES EXCLUDED: Estimator, Task performer

ROLES/SKILLS LINK:

The roles in this section can be grouped into 3 clusters - administrative roles (e.g. determining methods of charging for computer resources), task-orientated roles (e.g. allocating and delegating work) and people-orientated roles (advising and evaluating). The skills required for this group of roles will be clustered in these three groups:

(i) Administrative skills (Keen, 1981, p.125)

budgeting (Keen, 1981, p.59)

record keeping (McLeod and Forkner, 1982, p.308)
skill: charge out (Davis and Olson, 1985, p.465)

(ii) Task-orientated skills

allocating work (Gildersleeve, 1974, p.84)
arranging tasks (Gildersleeve, p.77)
comparing/monitoring (Davis and Olson, 1985, p.322)
controlling (Davis and Olson, 1985, p.315)
co-ordinating (Capron, 1986, p.38)
correcting (Allen, 1969, p.119)
enforcing standards (Davis and Olson, 1985, p.315)
evaluating/verifying work (Sommerville, 1985, p.103)
forecasting (Keen, 1981, p.277)
identifying goals (Davis and Olson, 1985, p.300)
identifying tasks (Keen, 1981, p.199)
organizing (Allen, 1969, p.77)
planning (Capron, 1986, p.39)
post implementation evaluating (Davis and Olson, 1985, p.613)
risk assessing of project (Davis and Olson, 1985, p.465)
scheduling (Harold, 1983, p.105)
setting objectives (Drucker, 1977, p.55)
using technology strategically (Bartol et al., 1986, p.34).

(iii) People orientated skills

delegating (Allen, 1969, p.107)

developing people's potential (Allen, 1969, p.189)
evaluating subordinate's needs (Davis and Olson, 1985,
p.647)
leading/directing (Lucas, 1982, p.301)
measuring/reviewing performance (Davis and Olson, 1985,
p.433)
motivating (Davis and Olson, 1985, p.646)
rewarding/punishing (Elkins, 1980, p.240)
structuring personnel resources (Allen, 1969, p.85).

6.3.1.16 PROTOTYPER GROUP (see section 6.2.4.3.7)

ROLES INCLUDED: Programmer (4GL), Reconciler, Specialist

ROLES EXCLUDED: Analyst, Implementor, Systems designer

ROLES/SKILLS LINK:

The skills required for the roles excluded from this group make up the majority of the skills required for the group as a whole (see sections 6.3.1.1, 6.3.1.10 and 6.3.1.20). The skills required uniquely for this group include:

programming (4GL) (Davis and Olson, 1985, p.426)

prototyping (Boar, 1986, p.28)

reconciling (world views) (Lee, 1981, p.49)

specialist (prototyper) (Martin, 1982, p.337).

6.3.1.17 QUALITY ASSURER GROUP (see section 6.2.4.1.3)

ROLES INCLUDED: Evaluator, Reviewer, Specialist

ROLES/SKILLS LINK:

The idea that the systems analyst should be involved as a QA specialist is found, for example, in Harold, 1983, p.102. If this is to be so, then the skills required to perform effectively within this role includes:

- developing QA standards/procedures (QA Conference, 1982, p.A-13)
- ensuring security of system (Martin, 1982, p.338)
- ensuring user requirements met (QA Conference, 1982, p.A-13)
- evaluating products (QA Conference, 1982, p.A-13)
- evaluating systems (Leeson, 1981, p.449)
- post implementation evaluating (Davis and Olson, 1985, p.613)
- providing technical advice (QA Conference, 1982, p.A-13)
- reviewing applications (Ostle, 1985, p.160)
- signing off development stages (Davis and Olson, 1985, p.610).

6.3.1.18 STRATEGIC PLANNER GROUP (see section 6.2.4.3.8)

ROLES INCLUDED: Business associate, Forecaster

ROLES EXCLUDED: Communicator, Estimator, Numerator, Task performer

ROLES/SKILLS LINK:

The skills required for the role of a business associate have been included in previous groups in this section (e.g. section 6.3.1.1) and consequently will not be repeated here. The unique skills required for the other roles included in this group are:

analyzing business problems (Mumford, 1985, p.97)
forecasting business trends (Canning, 1984b, p.1)
strategic planning (Davis and Olson, 1985, p.444)
using information competitively (Canning, 1984b, p.2)
using technology strategically (Bartol et al., 1986, p.34).

6.3.1.19 SUBORDINATES GROUP (see section 6.2.4.2.8)

ROLES INCLUDED: Acceptor, Co-operator, Participant, Supporter

ROLES EXCLUDED: Learner, Task performer

ROLES/SKILLS LINK:

This group of roles is another which is not confined exclusively to the responsibilities of the systems analyst. Its importance is that the loyalty of the systems analysts of the future is expected to shift from being centred on the computer industry, to being more focused on the companies which employ them (Davis D, 1983, p.16 and Alavi, 1984, p.23). The skills required to function effectively in these roles include:

accepting (Allen, 1969, p.110)
co-operating (Nylen et al., 1967, p.143)
helping (Nylen et al., 1967, p.112)
participating (Newman and Rosenberg, 1985, p.404)
supporting (Thomsett, 1980, p.43).

6.3.1.20 SYSTEMS DESIGNER GROUP (see section 6.2.4.3.9)

ROLES INCLUDED: Conceptual designer, Configuration designer, Decision maker, Physical designer, Reviewer, Specifier,

Technical assessor, Technician, Tools expert

ROLES EXCLUDED: Data base designer, Estimator, Task performer, User

ROLES/SKILLS LINK:

A dictionary definition of 'analysis' excludes any activities associated with design (Collins, 1979). In the literature, however, there is overwhelming evidence that the systems analyst is expected to play a design role. These design responsibilities can be grouped into:

- the computer-based system and the procedures around it;
- manual systems;
- man-machine interfaces;
- security issues.

(i) Skills required to design the computer-based system and the procedures around it:

conceptual designing (Davis and Olson, 1985, p.571)

designing data flows (Semprevivo, 1982, p.88)

designing procedures (Davis and Olson, 1985, p.577)

designing system function (Davis and Olson, 1985, p.577)

designing to meet users needs (Clarke and Prins, 1986, p.23)

designing user workflows (Lee, 1981, p.395).

(ii) Skills required to design manual systems (Jenkins, 1986, p.30)

(iii) Skills required to design man-machine interfaces (Shneiderman, 1987) include:

- designing dialogues (Lee, 1981, p.370)
- designing forms (Bower et al., 1985, p.281)
- designing inputs (Leeson, 1981, p.246)
- designing outputs (Clarke and Prins, 1986, p.577)
- designing reports (Capron, 1986, p.186)
- designing screen layouts (Semprevivo, 1982, p.274)
- designing source documents (Leeson, 1981, p.248)
- skill: ergonomics (Lee, 1981, p.49).

(iv) Skills required to ensure the system is built in such a way that it can be audited include:

- designing audit/control procedures (Davis and Olson, 1985, p.577)
- designing audit trails (FitzGerald et al., 1981, p.183)
- determining appropriate controls (Davis and Olson, 1985, p.578)
- providing security/backup (Davis and Olson, 1985, p.578)

Added to these groups of skills the role of the systems designer requires further groups of what can be termed supportive skills.

(i) Skills required to perform technical responsibilities include:

- acquiring/selecting hardware (Thierauf, 1986, p.570)
- acquiring/selecting software (Bartol et al., 1986, p.35)
- controlling software quality (Davis and Olson, 1985, p.578)
- identifying appropriate design approach (Sumner, 1986,

p.205)

identifying correct solution (Chen, 1985, p.38)

keeping abreast of technology (Ostle, 1985, p.37)

specifying data communication requirements (Davis D L, 1983, p.17).

(ii) Written communication skills are suggested by Davis and Olson, 1985, p.578, and include:

specifying programs

writing operations manual

writing user manual.

(iii) Other supportive skills required for this role include:

fact finding (Wetherbe, 1979, p.97)

using charting techniques (Gore and Stubbe, 1983, p.102)

using computer aided design (Martin, 1984, p.163).

5.3.1.21 TASK PERFORMER GROUP

The role of task performer was regarded as part of the subordinate role in section 6.2.4.2.8. Because of its importance it was treated as a separate group in this section. The skills linked to this systems analyst role are those which help to ensure that the various facets of the systems analyst tasks are likely to be performed effectively. The skills include:

attending to detail (Thierauf, 1986, p.6)

being accurate (Thierauf, 1986, p.6)

being creative (Leeson, 1981, p.55)
being disciplined/orderly (Lee, 1981, p.48)
being organized (Capron, 1986, pp.39 and 40)
being self-directed (Capron, 1986, pp.39 and 40)
decision making (Wetherbe, 1979, pp.100-102)
record keeping (McLeod and Forkner, 1982, p.308)
working with/through others (Thierauf, 1986, p.5)
working without immediate results (Capron, 1986, p.40).

6.3.1.22 USER GROUP (see section 6.2.4.2.9)

ROLES INCLUDED: Acceptor, Buyer, Technical assessor, Tools expert

ROLES EXCLUDED: Learner, Understander

ROLES/SKILLS LINK:

Some of the skills required for the systems analyst to function as a user of tools, methodologies and technology have been identified in previous sections, (e.g. acquiring/selecting hardware and software) and consequently are not repeated here. Other skills considered necessary include:

evaluating methodologies (by deduction from Thomsett, 1980, p.59)
identifying the impact of change (Capron, 1986, p.36)
using methodologies (Yourdon, 1986, p.134)
using tools (Thierauf, 1986, p.643).

6.3.2 SYNTHESIS OF IDENTIFIED SKILLS

A combination of all the skills identified in section 6.3.1, excluding

obvious duplicates (but still accommodating certain overlapping), was regarded as the third level of the roles/skills model (see figure 6.1). These skills are presented in table 6.4 in alphabetic order, without any attempt to prioritize or cluster them into homogeneous groups. It was only after the new skills clusters were identified in section 7.5.2.1 that the skills in table 6.4 were regrouped with the skills (see section 7.3.2) which were identified during the empirical study.

TABLE 6.4

Level three of roles/skills model

SKILL

- Accepting
- Acting as a catalyst
- Administering
- Advising
- Allocating work
- Analytical modelling
- Analyzing
- Analyzing business problems
- Analyzing data flows
- Acquiring skills
- Acquiring/selecting hardware
- Acquiring/selecting software
- Arbitrating
- Arranging tasks
- Attending to detail
- Becoming informed
- Being accurate
- Being creative
- Being diplomatic
- Being disciplined/orderly

(CONT)

TABLE 6.4 (CONT)

Being patient
Being politically aware
Being self directed
Budgeting
Building competitive positions
Building systems
Combatting resistance to change
Comparing/monitoring
Comprehending
Conceptual designing
Confronting
Consulting
Controlling
Controlling data redundancy
Controlling quality
Co-operating
Co-ordinating
Co-ordinating work
Coping with resentment
Correcting
Cost-benefit analyzing
Cost-benefit analyzing not needed
Critical-path analyzing
Data element analyzing/identifying
Decision making
Decomposing tasks
Deductive reasoning
Delegating
Designing audit trails
Designing audit/control procedures
Designing computer configurations
Designing data flows

(CONT)

TABLE 6.4 (CONT)

Designing data structures
Designing dialogues
Designing files
Designing forms
Designing inputs
Designing man-machine interfaces
Designing manual systems
Designing outputs
Designing procedures
Designing reports
Designing screen layouts
Designing source documents
Designing system function
Designing to meet user needs
Designing user work flows
Determining controls
Determining data requirements
Determining system feasibility
Determining system performance
Developing people's potential
Developing QA standards/procedures
Documenting
Educating
Enabling/helping
Encouraging
Enforcing
Enforcing standards
Enhancing skills
Ensuring data independence
Ensuring data integrity
Ensuring user requirements met
Estimating

(CONT)

TABLE 6.4 (CONT)

Estimating resource requirements
Estimating skills required
Evaluating existing procedures
Evaluating information
Evaluating methodologies
Evaluating products
Evaluating subordinates needs
Evaluating system
Evaluating technology
Evaluating/verifying work
Facilitating
Fact finding
File creating
Forecasting
Forecasting business trends
Functioning in a team
Gaining experience
Gaining knowledge
Generalist
Generating applications
Guiding
Helping
Identifying appropriate approach
Identifying appropriate methodology
Identifying competitive advantages
Identifying competitive positions
Identifying corporate requirements
Identifying correct solution
Identifying goals
Identifying impact of change
Identifying problems
Identifying receivers frame

(CONT)

TABLE 6.4 (CONT)

Identifying tasks
Identifying user needs/requirements
Implementing appropriate systems
Imposing
Influencing
Information centre consulting
Initiating/instigating
Innovating
Installing packages
Instructing
Integrating data
Interviewing
Introducing change
Investigating
Keeping abreast of technology
Keeping records
Leading/directing
Learning
Listening
Logical data modelling
Mathematical modelling
Mathematics
Measuring/reviewing performance
Mediating
Motivating
Negotiating
Normalizing data
Observing
Organizing
Organizing physical data
Participating
Planning

(CONT)

TABLE 6.4 (CONT)

Post implementation evaluating
Preparing presentations
Prioritizing tasks
Problem identifying
Problem solving
Programming 3GL
Programming 3GL not needed
Programming 4GL
Prototyping
Providing input to data dictionary
Providing security/backup
Providing technical advice
Questioning
Reading
Recognizing problems
Reconciling user requirements
Reconciling world views
Record keeping/note taking
Remembering
Report writing
Reviewing
Reviewing applications
Reviewing documents
Rewarding/punishing
Risk analyzing
Risk assessing projects
Sampling
Scheduling
Searching records
Selling ideas/gaining acceptance
Selling ideas/persuading
Separating physical/logical data structures

(CONT)

TABLE 6.4 (CONT)

Setting objectives
 Signing-off development stages
 Skill: Business training
 Skill: Business (general)
 Skill: Charge-out system
 Skill: Conversion procedures
 Skill: Database/data dictionary
 Skill: Ergonomics
 Skill: Hardware/software
 Skill: Interpersonal relationships
 Skill: I.S. technology
 Skill: O and M
 Skill: Politically aware
 Skill: Relating to people
 Skill: System controls/security
 Skill: Technical
 Skill: Telecommunications
 Skill: User department not needed
 Skill: User department/functional area
 Specialist database
 Specialist developer
 Specialist prototyper
 Specialist QA
 Specifying
 Specifying data communications
 Specifying programs
 Statistics
 Strategic planning
 Structuring algorithms
 Structuring personnel resources
 Supporting
 Systems testing

(CONT)

TABLE 6.4 (CONT)

Teaching
 Technical assessing
 Test data designing
 Testing developed systems
 Thinking logically
 Training
 Understanding
 Using appropriate tools
 Using automatic development methods
 Using body language
 Using charting techniques/graphics
 Using computer aided design
 Using data dictionaries
 Using data in organizations
 Using development work stations
 Using information competitively
 Using methodologies
 Using questionnaires
 Using technology strategically
 Using development tools
 Verbal communicating
 Working with DBA
 Working with/through others
 Working without immediate results
 Writing operations manual
 Writing user manual
 Written communicating

6.4 LIMITATIONS OF THE MODEL

Although the roles/skills model appeared to provide a comprehensive list of systems analyst's skills, the following limitations were identified:

(i) CHANGING ROLE NOT ALWAYS IDENTIFIED //

Some authors specifically stated that the skills they identified will be required by the systems analyst of the future (e.g. Martin, 1982, p.331; Watts et al., 1980, p.30; Harold, 1983, p.102; Barr and Kochen, 1984, p.177; Rivard and Huff, 1985, p.90; Clarke and Prins, 1986, p.11). This, however, was not always the case. It had to be assumed, therefore, that provided the systems analysts of the future will have to perform the roles within level two of the model (see section 6.2.2), they will require the skills identified in level three (table 6.6), whether these were specifically identified as future skills, or not.

(ii) NO INDICATION OF THE IMPORTANCE OF THE SKILLS

It is possible that some future systems analyst skills (e.g. communicating, analyzing, prototyping) will be far more important than others (e.g. programming (third generation), testing, statistics). It was not clear if the skills identified in the model fall into the categories of 'may be required' or 'will definitely be required' by the systems analyst in the future. Just from this survey, therefore, it was not possible to identify that set of skills which, if missing, will exclude an individual from being an effective future systems analyst.

(iii) THE IDENTIFIED SKILLS ARE AT DIFFERENT LEVELS OF DETAIL

Some of the skills identified in the literature require that the

individual systems analyst possess a range of abilities (e.g. interpersonal skills, identifying user needs, identifying appropriate systems). On the other hand, some identified skills are much more specific (e.g. report writing, scheduling, reading). The roles/skills model can be further improved by factorizing each skill to approximately the same level of detail.

(iv) THE MEANING OF SOME SKILLS UNCLEAR

Some of the skills identified in the literature have vague (or unclear) meanings (e.g. skill: hardware and software, organizing physical data). This lack of clarity tended to lead to overlapping and redundancy in level three of the model.

(v) RELATED LITERATURE LIMITED

Because a limited amount of literature directly related to identifying the skills profile of the systems analyst of the future, the roles/skills model may be incomplete.

(vi) SOME DIFFERENCE OF OPINION

Some sharp differences of opinion were identified in the literature. Authors were identified who documented diametrically opposed ideas on the importance of certain skills (see table 6.5 below). This contributed to the incompleteness of the model.

TABLE 6.5

Opposing ideas on the importance of certain skills

SKILL	REQUIRED	NOT REQUIRED
Programming (3GL)	Greenwood et al., 1986, p.12	Grindlay, 1981, p.15
Cost-benefit analysis	Harold, 1983, p.105	Lay, 1985, p.31
Skill: user functional area	Alavi, 1985, p.176	Cox and Snyder, 1985, p.248

SUMMARY OF THE INCOMPLETENESS OF THE MODEL

In spite of the limitations of the roles/skills model, the data gathered using this approach was regarded as sufficiently comprehensive to be compared with the list of skills identified from the empirical research (see section 4.4). The findings of the research were based on a combination of these two lists of skills (see section 7.3.2).

6.5 SUMMARY OF THIS CHAPTER

In this chapter details were given of the building of a second conceptual model. This model, based on a detailed search of the literature, was built using primarily deductive reasoning. The model had a structure of three levels, with links being established between each of the levels. Level 1 was the associations which systems analysts of the future are expected to have with their environment. The second level was the roles which a systems analyst will have to fill

within these associations. These roles were grouped into the same three categories which formed the basic structure of the job responsibilities/skills model. The significance of the list of skills required by the systems analyst of the future could be established by linking each skill identified in the literature to at least one of the level 2 roles. These skills constituted the third level of the model.

The validity of the model (which was an adaptation of the Leavitt model of organizations) was tested by the linking of the variables of each of these three levels. The obvious strength of these links established the model's internal consistency.

Level 3 of the model (the identified skills) was used as input to the next stages of the research. In section 7.3.1 these skills were compared to those skills identified by building the roles/skills model, and in section 7.3.2 they were used to build the skills profile of the systems analyst of the future.

CHAPTER SEVEN

THE RESEARCH FINDINGS

7.1 INTRODUCTION TO THE CHAPTER

In this chapter the research findings are presented and comment is offered on their significance. To achieve this the following steps are taken:

- the format for presenting the results of the research is established;
- the research findings are described;
- comment is given on the initial results of the research;
- the research results are analyzed further;
- some factors which influence the required mix of systems analysts' skills are identified.

7.2 FORMAT FOR PRESENTING THE FINDINGS

It was anticipated that the skills profile of the future systems analyst could be compiled simply by combining the findings of the empirical research (section 5.3.2) with the findings of the literature survey (section 6.3). A simple amalgamation of skills was not possible, however, for three reasons:

- (i) Simply combining the skills lists resulted in overlapping ideas and obvious redundancy (e.g. determining appropriate development method and identifying appropriate methodology)
- (ii) Some of the skills from both lists belonged to broad, high-level groupings (e.g. business practices skills and change agent skills), while others belonged to significantly narrower

categories (e.g. identifying system goals and using automated development tools) and a third group comprised skills of an even more specific nature (e.g. designing forms and specifying programs). A simple amalgamation could have resulted in an over-emphasis on some skills and a duplication of others.

(iii) The strength of opinion of those who participated in the empirical research could be identified. For example:

- fact finding and thinking logically were skill which were regarded as DEFINITELY REQUIRED skills
- statistics and auditing computer systems were regarded as skills which MAY BE REQUIRED. (See Section 5.2.2.2)

This distinction could not be made between the skills identified in the roles/skills model built from the literature survey (see section 6.3).

To avoid possible incompleteness and inaccuracies resulting from these problems, it was necessary that the skills profile of the future systems analyst be formatted into specific generic skills clusters. This stage of the research is presented graphically in figure 7.1.

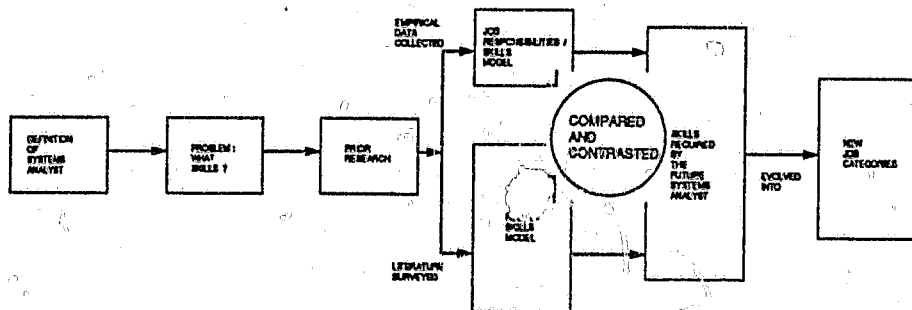


FIGURE 7.1

This stage of the research in context

The skills clusters identified in the literature tended to follow some form of known or perceived systems development life cycle (e.g. Guimaraes, 1980, p.3; Crocker, 1984, p.7; Vitalari, 1985, p.221). As this is likely to change in the future, before the findings of the study could be presented, a new set of skills clusters needed to be developed.

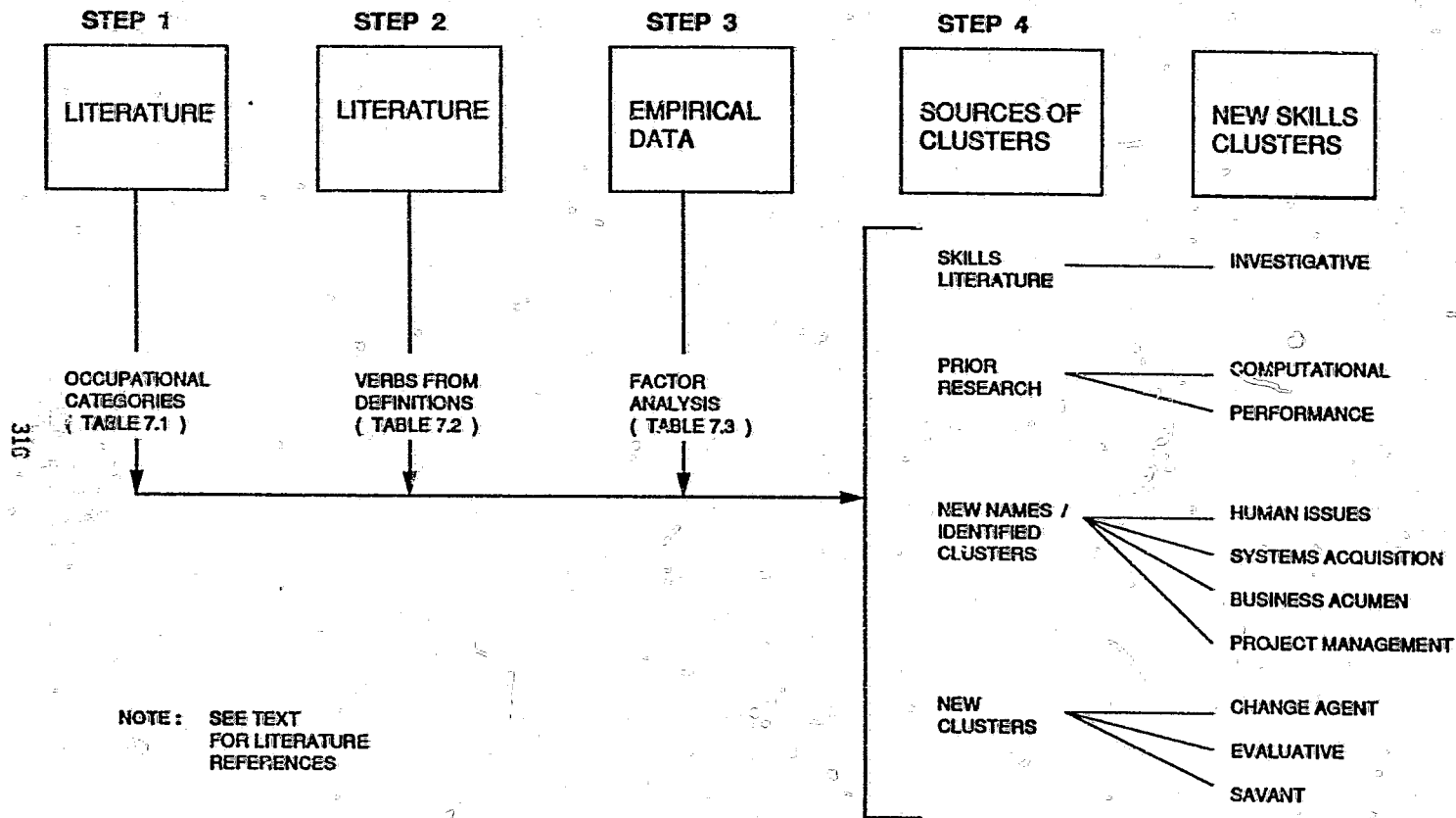


FIGURE 7.2

Steps taken to identify new generic skills

7.2.1 BUILDING THE NEW SKILLS CLUSTERS

The steps followed to identify these new generic groupings were:

- (i) Broad work categories were identified to form a basis of the groupings;
- (ii) Published definitions of systems analysis were linked to these basic groupings;
- (iii) These groupings were expanded and clarified by incorporating the results of factor analyzing the empirical data;
- (iv) The final generic groupings were established by comparing and contrasting these findings with the groupings used in previously published research.

The relationship between each of these steps is depicted graphically in figure 7.2.

STEP 1 BROAD WORK CATEGORIES IDENTIFIED

It is claimed that, in Western Culture, the following six types of people can be identified:

realistic
investigative
artistic
social
enterprising
conventional.

Further, it is claimed, each person may be characterized by one, or some combination, of these types (Campbell and Hansen, 1981, p.29).

The same source also asserts that occupational environments can be

divided into the same six types, and each environment is likely to be dominated by a particular type of person (Campbell and Hansen, 1981, p.29).

A summary of the main points in Campbell and Hansen's expansion and description of these categories (which they based on Holland's model), is given below.

REALISTIC

Persons of this type are practical, direct and persistent, prefer concrete to abstract problems and like to build things. Included in this group of occupations are the tool designer and the engineer.

INVESTIGATIVE

This category includes those who enjoy ambitious tasks and, because of a tendency to be analytical and having confidence in their own scholarly and intellectual abilities, prefer to work independently. Vocational preferences here include astronomer and psychologist.

SOCIAL

Persons of the social type like to work in groups (and enjoy being central in the group), they possess good verbal and interpersonal skills and enjoy activities which involve informing and training others. They perceive themselves as understanding, responsible and helpful. The occupations included in this group are the missionary and the teacher.

ENTERPRISING

Persons of this type have verbal skills suited to selling, dominating and leading (which often come with a strong drive to attain and high energy levels). Typical occupational preferences of this group are the business executive and the retail merchandiser.

CONVENTIONAL

Conventional people prefer jobs like, for example, the clerical worker, a financial analyst or a statistician. They enjoy an ordered environment with well-structured tasks and systematic activities.

ARTISTIC

Persons of the artistic type prefer free, unstructured situations which have associated with them a great need for individual expression and a tendency as expressive, intuitive, nonconforming and independent. Vocational preferences include author, artist and musician.

(See Campbell and Hansen, 1981, p.30.)

It was possible, as is shown in table 7.1, to link all but one of these occupational categories to important systems analysts' characteristics which have been identified in the literature (e.g. the systems analyst is analytical (INVESTIGATIVE) and is orderly and practical (CONVENTIONAL) (see section 6.3.1)). The exception was the

ARTISTIC category. Here, rather than finding characteristics which epitomised the systems analyst, the preference to work in unstructured environments, independently and without a willingness to conform, actually hinder the effectiveness of the systems analyst's work (e.g. see Davis and Olson, 1985, p. 315 - the need to enforce standards; Newman and Rosenberg, 1985, p. 404 - the need to participate with others in the design of systems; Thomsett, 1980, p. 43 - the need to support colleagues, and Theirauf, 1986, p. 6 - the need to attend to detail). For this reason the ARTISTIC category was excluded from further analysis.

TABLE 7.1

Description of occupational categories which are significant to systems analysis (based on Campbell and Hansen, 1981, pp.29 and 30)

OCCUPATION CATEGORY	DESCRIPTION
REALISTIC	- is direct, persistent - likes building things
INVESTIGATIVE	- enjoys ambitious tasks - is confident using intellectual abilities - is analytical
SOCIAL	- likes to work in groups - has good verbal/interpersonal skills - enjoys informing, training others
ENTERPRISING	- has verbal skills suited to leadership - has strong drive to attain - has high energy levels
CONVENTIONAL	- prefers well-ordered environments - likes systematic activities - is orderly, practical

From these descriptions it appeared possible to subdivide systems analysis activities into these five basic categories. To be of value to this research the idea needed further development. This was done in step 2.

STEP 2 DEFINITIONS OF SYSTEMS ANALYSIS CATEGORIZED

Verbs from the definitions of systems analysis (see section 2.1.1.4) were linked to the five occupational categories identified in STEP 1 to test if it were possible to subdivide the systems analysis task into these groupings.

REALISTIC

Verbs which linked to this occupational group were those which reflected the practical, concrete activities associated with implementing systems (e.g. build, develop, implement).

INVESTIGATIVE

As was anticipated, the majority of verbs identified from the definitions of systems analysis could be linked to this occupational group which demands a basic analytical approach (e.g. analyze, determine, identify, investigate, solve).

SOCIAL

No verbs from the definition of systems analyst fitted into this category.

ENTERPRISING

The entrepreneurial and managerial emphasis of this group could be identified as reflecting that part of the systems analysts' job which demands the careful control of project activities. Verbs from the definitions of systems analysis which are appropriate here include administer, manage, measure and plan.

CONVENTIONAL

The well-ordered environment, which is characteristic of this group, can be linked to verbs from the definition of systems analysis which include document, specify and audit.

Because of the success of this linking process for four of the five categories, (see table 7.2 for a complete set of verbs), it was concluded that these groupings appeared to provide a basic structure for a new set of systems analyst skills clusters.

The exception to this was the SOCIAL category. As was noted, no verbs in the identified definitions of systems analysis fitted into this group. Because of the importance of interpersonal relationships (see section 6.3.1.2) and ergonomics (Lee, 1981, p.49) to the systems analyst, this omission suggested a further problem with the definition of system analysis (see section 1.3 point iv). It was decided, therefore, to retain the five occupational categories, but to test them further against the empirical data.

TABLE 7.2

Linking of occupational categories to the definition of systems analysis

OCCUPATIONAL CATEGORY	VERBS FROM THE DEFINITIONS
REALISTIC	build, design, develop, implement, maintain, supply
INVESTIGATIVE	analyze, define, determine, evaluate, identify, investigate, model, select, solve, translate
SOCIAL	-
ENTERPRISING	administer, establish, manage, measure, plan, set
CONVENTIONAL	audit, document, secure, specify

STEP 3: EMPIRICAL DATA FACTOR ANALYZED

Further support was given to the idea of clustering future systems analysts' skills into groups based on occupational categories by conducting a factor analysis applied to the correlation matrix of the data collected from the practising systems analysts. (Details of why factor analysis was used on ordinal data were given in section 3.6.2.4).

The conclusions in this section were based on the following procedures:

- Data were processed on an IBM mainframe using Version 5 of SAS Institute Incorporated's Statistical Analysis System.
- Following Kim and Mueller (1978, p.48) reliance was placed on the default options of the SAS procedure (e.g. the principal component analysis procedure was used).
- Because the factors were independent, the VARIMAX rotation method was selected (Mardia, Kent and Bibby, 1979, p.269).

- Following the lead of other researchers (e.g. Mahmood, 1987, p.300 and Rivard and Huff, 1988, p.557 (who confirm that this satisfies Fornell and Larcker's criterion)), the loading value for each variable included in the factors was set at a cut-off level of 0,50.
- All factors with an eigenvalue > 1 were selected (Kim and Mueller, 1978, p.49).

As a result of this analysis, 13 factors were identified which included 37 of the possible 58 variables processed (see table 7.3). It was found that each of these factors could be classified into one or, in some cases, a combination of the job categories identified in step 1 above. An illustration is given below to how this was done (the details of each factor is given in table 7.3).

FACTOR 1

The variables identified in this factor are related directly to the task of managing projects. The skills included in the group are project planning, project controlling, scheduling, progress monitoring, task prioritizing and decision making. These activities are consistent with those identified by Campbell and Hansen (1981, p.29) with the enterprising job category.

TABLE 7.3

Classification of skills by Factor Analysis

FACTOR	EIGEN- VALUE	VARIABLE	SKILL	LOADING
1	11,5126	V15	project planning	0,6376
		V16	project controlling	0,8158
		V17	scheduling	0,8333
		V18	progress monitoring	0,7673
		V53	test prioritizing	0,5164
		V55	decision making	0,5224
		SUGGESTED CATEGORY: ENTERPRISING		
2	4,6312	V39	designing installation configurations	0,8144
		V40	designing computer networks	0,9116
		V41	determining TP requirements	0,8828
		SUGGESTED CATEGORY: REALISTIC		
3	3,0520	V43	working in team	0,8510
		V44	dealing with people	0,7890
		V45	being diplomatic	0,6028
		V52	motivating/managing people	0,5405
		SUGGESTED CATEGORY: SOCIAL		
4	2,4037	V46	interviewing	0,6918
		V47	verbal communicating	0,6005
		V48	report writing	0,7461
		V49	presentation preparing	0,5935
		SUGGESTED CATEGORY: SPECIAL		
5	2,3234	V13	identifying competitive advantages	0,8296
		V14	building competitive positions	0,8083
		SUGGESTED CATEGORY: INVESTIGATIVE/REALISTIC		

(CONT)

TABLE 7.3 (CONT)

FACTOR	EIGEN- VALUE	VARIABLE	SKILL	LOADING
6	1,8980	V32	implementing depart. structures	0,7599
		V34	implementing office procedures	0,7479
		SUGGESTED CATEGORY: SOCIAL/REALISTIC		
7	1,7572	V10	determining system security	0,8469
		V11	determining system controls	0,8181
		SUGGESTED CATEGORY: INVESTIGATIVE		
8	1,6408	V27	evaluating packages	0,8803
		V28	implementing packages	0,9053
		SUGGESTED CATEGORY: INVESTIGATIVE/REALISTIC		
9	1,5078	V36	determining data req.	0,7036
		V28	designing data models	0,7091
		SUGGESTED CATEGORY: INVESTIGATIVE/REALISTIC		
10	1,4131	V4	problem solving	0,7739
		V5	thinking logically	0,7362
		SUGGESTED CATEGORY: INVESTIGATIVE		
11	1,2536	V9	using structured analysis	0,5492
		V21	critical path analysis	0,6120
		V23	constructing algorithms	0,6824
		SUGGESTED CATEGORY: REALISTIC		
12	1,1975	V1	evaluating procedures	0,7933
		V2	fact finding	0,6825
		SUGGESTED CATEGORY: INVESTIGATIVE		
13	1,0819	V25	FORTAN programming	0,6924
		V26	ADA programming	0,6402
		SUGGESTED CATEGORY: REALISTIC		

NOTE:

- (i) Only factors with on eigenvalue > 1 were used.
- (ii) The cumulative proportion explained by these factors = 0,82.

This classification procedure presented no intrinsic problems and consequently the factor analysis step was regarded as one which strengthened the idea that future systems analysts' skills could be regrouped into new categories. Because it was found that certain of the identified factors needed to be placed in combined categories, two things were suggested:

- (i) A classification system of only five types of skills was insufficient for the wide diversity expected in the future systems analysts' working environment (see Campbell and Hansen, 1981, p.29).
- (ii) Although the categories from Campbell and Hansen provided a base, the actual regrouping of these skills required further refinement (see step 4).

STEP 4 OTHER SKILLS GROUPINGS COMPARED

To ensure completeness, the skill groupings identified in STEP 2 were further compared and contrasted with skills clustering of previously published research. Groupings based on the traditional systems development life cycle (e.g. Guimaraes, 1980; Vitalari, 1985) were excluded from these comparisons because as technology evolves, the life cycle itself is likely to undergo change (see section 1.4).

From these comparisons and contrasts, four categories of generic skills were identified:

- clusters identified in table 7.3 and retained as generic groupings;
- cluster names which were not identified in previous steps in this

section, but which were referred to in previous research;
 - skill clusters which were identified in the previous steps (see table 7.3) and in prior research, but to which new generic names were given;
 - new generic names which were introduced in this research.

(i) CLUSTER NAMES RETAINED FROM PREVIOUS STEP

- (a) The ENTERPRISING cluster in table 7.2 was referred to, in part, as PROJECT MANAGEMENT in Crocker (1982, p.95) and this name was retained in this study.
- (b) The INVESTIGATIVE cluster (see table 7.2) was unexpectedly missing from Crocker's research, but was referred to as a sub-set of COMPUTERS and ORGANIZATIONS in Nunamaker et al. (1982, p.785). In this study this name was retained.

(ii) CLUSTER NAMES BORROWED FROM PREVIOUS RESEARCH

- (a) A group of skills which relate to computational ability were referred to as:

QUANTITATIVE METHODS Crocker, 1984, p.30

MODELS Nunamaker et al., 1982, p.785

COMPUTATIONAL Vitalari, 1985, p.222

These skills were grouped under the generic name COMPUTATIONAL in this research.

- (b) PERFORMANCE skills were referred to in Nunamaker et al. (1982, p.785), but specifically not used by Benbasat et al. (1980, p.21). Because these skills (partly referred to in

the CONVENTIONAL cluster in table 7.1) are regarded as central to the effectiveness of a systems analyst, the PERFORMANCE cluster was retained in this study.

(iii) CLUSTERS TO WHICH NEW NAMES WERE GIVEN

- (a) The SOCIAL cluster from table 7.1 was referred to, either completely or in part, in previous research as:

SOCIETY	Nunamaker et al., 1982, p.785
PEOPLE	Nunamaker et al., 1982, p.785
SOCIAL	Crocker, 1984, p.95
COMMUNICATION	Crocker, 1984, p.95
ORGANIZATIONS	Nunamaker et al., 1982, p.785
ORGANIZATIONAL	Vitalari, 1985, p.222

To incorporate the shades of meanings from all these sources, it was decided to call this cluster HUMAN ISSUES.

- (b) The REALISTIC cluster from table 7.1 was referred to, either completely or in part, in previous research as:

COMPUTERS	Nunamaker et al., 1982, p.785
TECHNICAL	Crocker, 1984, p.95

In this study these groupings were combined under a cluster called SYSTEM ACQUISITION.

- (c) A cluster of skills which refer to a systems analyst's skills in general business activities was referred to as:

FINANCE	Crocker, 1982, p.95
ACCOUNTING, FINANCE,	
ECONOMICS	Vitalari, 1985, p.222

In this study a generic group of skills, called the BUSINESS ACUMEN group, was introduced to include these skills.

(iv) NEW CLUSTERS INTRODUCED

New generic groupings were introduced to incorporate categories of skills referred to in the literature (see chapter 6), but which were not clearly identified in the previous steps. These new clusters were:

- (a) The CHANGE AGENT cluster (see e.g. McLeod, 1983, p.545; Capron, 1986, pp.36 and 37; Ostle, 1985, p.57). The manner in which this term was used in the context of this research is further defined in section 7.3.1.2.
- (b) A group of skills, which includes quality assurance (Harold, 1983, p.102), post implementation evaluating (Davis and Olson, 1985, p.613) and systems auditing (empirical findings, chapter 5) were combined under a generic cluster called EVALUATIVE skills.
- (c) There was strong evidence in the literature to support the idea of the systems analyst of the future fulfilling a consultancy/teaching role (Canning, 1985a; Barr and Kochen, 1984, p.169; Martin, 1982, p.335). The SAVANT cluster was introduced as a generic category under which these skills were grouped.

7.2.2 GENERIC CLUSTERS USED IN THIS STUDY

As a result of these four steps, therefore, the generic groupings listed below were identified and used in this study, (see figure 7.2).

- 1 BUSINESS ACUMEN
- 2 CHANGE AGENT
- 3 COMPUTATIONAL
- 4 EVALUATIVE
- 5 HUMAN ISSUES
- 6 INVESTIGATIVE
- 7 PERFORMANCE
- 8 PROJECT MANAGEMENT
- 9 SAVANT
- 10 SYSTEM ACQUISITION

7.3 PRESENTING THE FINDINGS OF THIS STUDY

The generic clusters of systems analysis skills identified in section 7.2.2 were used in this research in two ways:

- to compare and contrast the job responsibilities/skills model (chapter 5) and the roles/skills model (chapter 6);
- to build a skills profile of the systems analyst of the future.

7.3.1 A COMPARISON OF THE SKILLS IDENTIFIED IN THE TWO CONCEPTUAL MODELS

One of the research objectives was to compare and contrast opinions identified in the literature with those held by the participants in the empirical study (see section 1.5). This objective was met by

identifying the similarities and differences in the job responsibilities/skills model (section 5.3.2) and the roles/skills model (section 6.3) in terms of the generic skills clusters identified in section 7.2.2. The procedures followed in this section are presented diagrammatically in figure 7.3.

7.3.1.1 BUSINESS ACUMEN CLUSTER

The need for the future systems analyst to have skills in business practices was found in both models (see section 5.3.2.1.2 and 6.3.1.1). If there was any difference between the two sets of skills it was the increased detail in which specific skills are identified in the roles/skills model in chapter 6.

7.3.1.2 CHANGE AGENT/CREATIVITY CLUSTER

Both the literature survey and the empirical research revealed significant evidence that these skills, together with skills in using information and information technology competitively, were required by the future systems analyst (see sections 5.3.2.1.2 and 6.3.1.2).

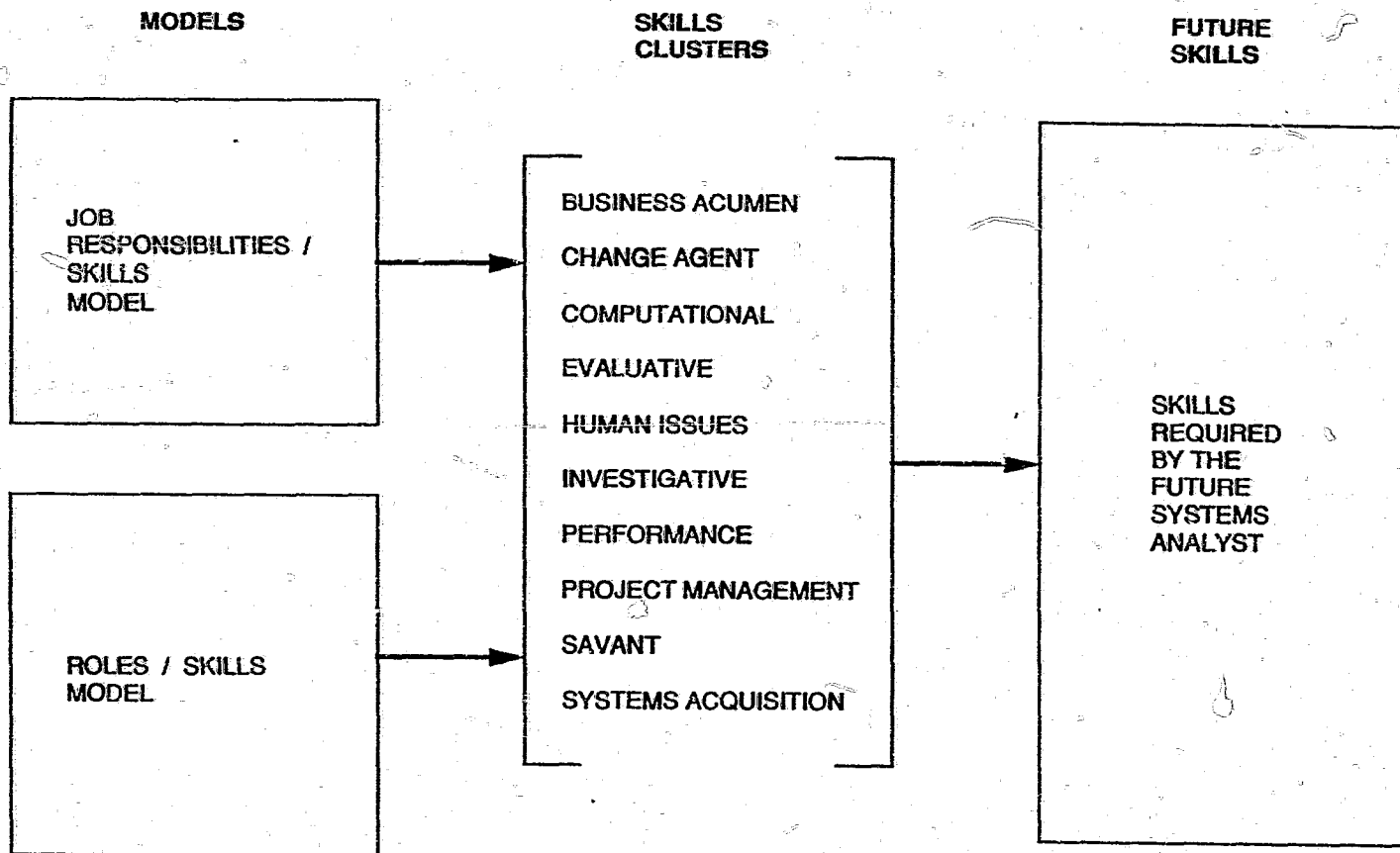


FIGURE 7.3

A comparison of the two conceptual models

7.3.1.3 COMPUTATIONAL CLUSTER

The literature survey revealed that more quantitative techniques skills will be required by the future systems analyst than just skills in statistics (which may be required as part of the empirical job responsibilities/skills model (see sections 5.2.2.2 and 6.3.1.14)).

7.3.1.4 EVALUATIVE CLUSTER

The literature survey revealed that the systems analyst of the future will require skills in evaluating implemented application systems (see section 6.3.1.17). The questionnaire respondents also identified the need for evaluative skills (see section 5.3.2.1.3). There were, however, two differences. On one hand the questionnaire respondents' opinions were not as encompassing as those identified in the literature survey. On the other hand, the empirical data included skills at auditing computer-based systems (which was not identified in the literature). Had this audit function not been identified, this cluster of skills could have been confined to quality assurance activities.

7.3.1.5 HUMAN ISSUES CLUSTER

Skills found in both models which could be categorized into this cluster ranged from communicating and teaching, through to enabling/facilitating and working with and through others (see section 5.3.2.1.2 and 6.3.1.12). In this sense, the agreement between the models was high. The differences which were identified could be attributed to the roles/skills model providing a more detailed break-down of required

skills (e.g. the skill of written communicating was expanded into document, record keeping/note taking, report writing and using charting techniques (see section 6.3.1.2)). This detail was not provided by the empirical model.

7.3.1.6 INVESTIGATIVE CLUSTER

Both models provided skills in this cluster which included the expected analytical skills (e.g. fact finding, identifying users' needs, and skills at prototyping (see sections 5.3.2.1 and 6.3.1.1)). There was also agreement that a whole range of strategic planning skills (including using information competitively) would be required by the future systems analyst (see sections 5.3.2.1.3 and 6.3.1.18). This cluster of skills provides one of the clear examples of the changing role of the systems analyst because these investigative skills, within themselves, include more than analytical skills (see section 7.4.2).

7.3.1.7 PERFORMANCE CLUSTER

With the exceptions of problem solving, logical thinking and decision making, the skills in this whole cluster were not included in the opinions of those who provided the empirical data. Perhaps it can be argued (as was argued by Benbasat et al., 1980, p.24) that the importance of these skills is universally accepted. For this reason, however, it was expected that they would be important to those involved in the empirical research and included in their list of requirements for future systems analysis skills (see sections 5.3.2.1.2, 6.3.1.1 and 6.3.1.1.19).

7.3.1.8 PROJECT MANAGEMENT CLUSTER

This was another cluster of skills which suggested that the role of the systems analyst is changing. Both the empirical model (see section 6.3.1.15) and the literature model (see section 5.3.2.1.3) identified these as skills required by the future systems analyst. Another group of skills in the job responsibility/skills model suggested that the systems analyst of the future will require more general management skills. These skills, which were not found directly in the literature, are listed in section 5.3.2.1.3.

7.3.1.19 SAVANT CLUSTER

Some references in the literature to the consulting skills required by the systems analyst of the future are specific (e.g. Barr and Kochen, 1984, p.169 refer specifically to information centre consulting). Other references to consulting skills refer to the systems analyst in a more general advisory or facilitator role (e.g. see section 6.2.3.4). Consultant skills were also recognized by the participants in the empirical study as being necessary for the future systems analyst. This was identified in section 5.3.2.1.1 as part of the systems analysts' user contact responsibilities. Overall, there appeared to be agreement on the need for these skills.

7.3.1.10 SYSTEMS ACQUISITION/TECHNICAL CLUSTER

The idea that a systems analyst should be involved in the development of computer-based systems was not part of the definition of systems analysis (see section 2.1.1.4). Both models built in this research,

however, suggested that this would be part of the systems analysts' future activities (see section 5.3.2.1.3, 6.3.1.10 and 6.3.1.20). It was again noticeable that the detail of the required skills identified in chapter 6 (e.g. designing codes, forms, screens, dialogues) were missing from the job responsibilities/skills model. Although some database activities were identified in the empirical research (see section 5.3.2.1.3), a broader scope of skills were identified as part of the roles/skills model (see section 6.3.1.5). This constituted one of the differences in skills identified in the two models.

7.3.1.11 SUMMARY OF THE COMPARISON OF THE SKILLS IDENTIFIED IN THE TWO CONCEPTUAL MODELS

There was agreement between the two models on the need for specific skills in each of the identified activity clusters. While this did not constitute total agreement, some of the concurrent ideas were significant (particularly in the investigative, project management and system acquisition clusters), because there was agreement on skills which clearly reflect the changing role of the systems analyst.

In some skills groupings (e.g. business acumen, human issues and system acquisition) it was noticeable that the skills identified in the literature survey model tended to be at a more detailed level than those in the empirical model. While this level of detail helped to clarify the responsibilities of the future systems analyst, within these skills clusters there was no evidence that different sets of skills were identified in the models.

Different sets of skills were identified in three clusters.

Firstly, in the computational cluster, the respondents to the questionnaire indicated that skills at statistics may be required by the future systems analyst, while a range of quantitative techniques skills were identified in the literature. Secondly, in the empirical model there was evidence of the requirement for the future systems analyst to have more management skills than the project management skills identified in the literature. Thirdly, in the evaluative skills cluster the ability to audit a computer-based system was, according to the empirical research, a skill requirement for the future systems analyst. The emphasis of the skills identified through the literature survey was confined more to quality control.

The detailed differences in the two models could be identified when the skills profile of the systems analyst of the future was built. This is done in the next section.

7.3.2 SKILLS REQUIRED BY THE SYSTEMS ANALYST OF THE FUTURE

One of the objectives of the research was to build a probable skills profile of the future systems analyst (see section 1.5). This was done by combining the skills identified in the job responsibilities/skills model (chapter 5) with those of the roles/skills model (chapter 6) under the generic skills clusters identified in section 7.2.2. These combined and categorized skills, while helping to identify some of the differences in the two models, actually provided the skills profile of the future systems analyst. This combining activity is represented diagrammatically in figure 7.3

7.3.2.1 BUSINESS ACUMEN CLUSTER (GROUP 1)

There was disagreement between the constituent sub-groups participating in the empirical research on the importance of skills in business practices to the future systems analyst (see section 5.2.2.1.1). This skill, however, was regarded as important by the group as a whole. It was identified as important in the category of skills associated with contact between the future systems analyst and the user (see section 5.3.2.1.1), and the category of general business skills (see section 5.3.2.1.2). The literature survey provided more insight into the details of this skill. The need for the future systems analysts to have skills which will enable them to function effectively in the business environment was identified in both the analyst group (section 6.3.1.1) and the strategic planner group (section 6.3.1.18). By combining these three sources, the skills required in this cluster include:

- Forecasting business trends
- Introducing new structures in user departments
- Skills in accounting/finance/economics
- Implementing system procedures
- Skills in general business practices
- Identifying user functions
- Skills in organization and methods
- Skills in user department functional area
- Working in the user department.

7.3.2.2 CHANGE AGENT/CREATIVE CLUSTER (GROUP 2)

There was also disagreement between the constituent sub-groups who responded to the questionnaire on the significance of change agent skills to the future systems analyst (see section 5.2.2.1). The group as a whole, though, recognized this skill as important to the future systems analyst (see section 5.3.2.1.2). The idea that the systems analyst must function as an agent of change is well documented in the literature (see section 6.3.1.2). The skills required to perform effectively within this role are identified as:

Acting as a change agent

- Acting as a catalyst

- Combating resistance to change/coping with resentment about change

- Confronting

- Enforcing

- Imposing

- Influencing

- Innovating

- Mediating

- Identifying competitive advantages/positions

- Identifying the impact of change

- Using information competitively

- Using information technology strategically.

It is possible that, to perform within the role of a change agent, the future systems analyst may also require skills listed below in the Human Issues cluster (Group 5).

7.3.2.3 COMPUTATIONAL CLUSTER (GROUP 3)

The idea that the future systems analyst should possess numerate skills was suggested in the empirical research (see section 5.2.2.1.5) but found much stronger support in the literature survey (see section 6.3.1.14). The skills required in this cluster were identified as:

- Forecast modelling

- Mathematical skills

 - Mathematics

 - Mathematical modelling

- Statistics

- Simulation skills.

7.3.2.4 EVALUATIVE CLUSTER (GROUP 4)

Skills in the evaluative cluster were identified in both the empirical work and in the literature. Those responding to the questionnaire regarded the skill to build systems which can be audited as essential for the future systems analyst, and suggested that the skill to audit computer systems may be important (see section 5.3.2.1.2). The skills identified in the literature which belong to this group cover auditing, but include other quality assurance, reviewing and evaluating activities (see section 6.3.1.17). The full list of skills in this group include:

- Auditing computer-based systems

- Determining appropriate system controls

- Determining appropriate system security

- Developing quality assurance standards/procedures

Evaluating implemented systems

Determining system performance

Ensuring user requirements met

Reviewing applications

Ensuring the security of developed systems.

7.3.2.5 HUMAN ISSUES CLUSTER (GROUP 5)

Some of the skills which belong to this group were regarded as essential by those who participated in the empirical research (e.g. interviewing, report writing and teaching (see section 5.3.2.1.2). Other skills grouped in this cluster (e.g. negotiating, listening and specifying) were identified in the literature survey as part of the communicator group (see section 6.3.1.3). Further skills in this section were identified in the literature survey but were grouped in the interpersonal facilitator cluster (e.g. being diplomatic, co-operating and encouraging). It was found that the skills in this cluster could be categorized into the three sub-clusters of communication skills, interpersonal relationship skills and skills in ergonomics. The following are all the skills identified:

Communicating

Identifying the receivers' frame/register

Interviewing

Negotiating

Preparing presentations

Selling ideas/persuading/gaining acceptance

Using body language

Verbal communicating

Public speaking

Listening

Written communicating

Documenting

Specifying

Report writing

Writing manuals

- operations

- user

Interpersonal skills

Arbitrating

Being patient

Being politically aware

Co-operating

Enhancing

Participating

Skills in relating to people/organizations

Skills in working through others/in a team

Skills in ergonomics.

7.3.2.6 INVESTIGATIVE CLUSTER (GROUP 6)

A large group of skills identified in the empirical study (and grouped in sections 5.3.2.1.1, 5.3.2.1.2 and 5.3.2.1.3) were combined in this cluster, together with the skills from both the Analyst group in section 6.3.1.1 and the Fact finder group in section 6.3.1.8. The resultant

skills groupings cover those skills often associated with the task of systems analysis (see Thierauf, 1986, p.7). In this cluster all these skills are grouped under the headings of analytical skills, fact finding, problem solving, and identifying both corporate and individual system needs.

Analytical skills/evaluating the existing situation

Decomposing tasks

Analyzing data flows

Identifying/analyzing data elements/information

Viewing/defining any situation as a system

Fact finding/data gathering skills

Interviewing/questioning/investigating

Observing

Searching records/reviewing documents

Sampling

Using questionnaires

Becoming informed

Problem solving

Identifying/recognizing problems

Analyzing problems

Logical thinking

Identifying correct solutions

Identifying corporate system needs/requirements

Strategic planning

Using formal procedures (e.g. information engineering)

Identifying corporate data requirements

Identifying individual system needs/requirements

Identifying system goals

Identifying user needs

Determining data (sic) requirements

Reconciling user requirements

Determining appropriate controls/security

Determining system feasibility

Cost-benefit analyzing

Risk assessing/risk analyzing

SEE ALSO THE FOLLOWING CLUSTERS

Change agent

Business acumen

Human issues

Savant

7.3.2.7 PERFORMANCE CLUSTER (GROUP 7)

The skills in this cluster, with the exception of logical thinking (see sections 5.3.2.1.2 and 7.3.1.7) all came from the literature survey. Most of the skills (e.g. comprehending, gaining experience and gaining knowledge) came from the Learner group in section 6.3.1.13, and (e.g. attending to detail, being accurate and creative) from the Task performer group in section 6.3.1.21. The complete list of skills required to help the systems analysts of the future perform their technical responsibilities are:

Accepting (e.g. instructions, orders)

Attending to detail

Being accurate
Being creative
Being disciplined/orderly
Being organized
Being self-directed
Comprehending
Decision making
Enhancing own skill
Gaining experience
Keeping records/note taking
Learning/gaining knowledge/remembering/understanding
Thinking logically/deductive reasoning
Working without immediate results
SEE ALSO THE FOLLOWING CLUSTER

Human issues

7.3.2.8 PROJECT MANAGEMENT CLUSTER (GROUP 8)

The participants in the empirical research identified a large number of skills associated with management in general and project management in particular (see section 5.3.2.1.2). They regard these as necessary skills for the systems analyst of the future. Through the literature survey further administrative, task-oriented and people-oriented skills were identified (see section 6.3.1.15). The list of project management skills identified as necessary for the future systems analyst is:

Administering
Allocating work/prioritizing tasks/scheduling

Budgeting

Controlling workers/controlling quality of work/enforcing standards

Co-ordinating work

Critical-path analyzing

Delegating

Developing people's potential

Evaluating subordinates' needs

Forecasting

Initiating/instigating

Leading/directing

Measuring work

Comparing/Monitoring

Correcting

Evaluating/Verifying work

Reviewing performance

Motivating

Organizing/structuring personnel

Planning

Reporting on systems development

Rewarding/punishing

Setting objectives

Signing off development stages

Skills at charging out for services

SEE ALSO THE FOLLOWING CLUSTERS

Human issues

Performance.

7.3.2.9 SAVANT CLUSTER (GROUP 9)

There was disagreement among the respondents to the questionnaire on the importance of the consulting role to the future systems analyst (see section 5.2.1.1). The opinion gained from the literature, however, was different. Here a strong case is made for the need of the future systems analyst to fulfill this role (see section 6.3.1.4). Many of the specific skills identified for this cluster, therefore, are drawn from the literature (section 6.3.1.4). To fill the role of a facilitator, advisor or mentor it could be an advantage if the consultant has the wide spectrum of generalist skills (see section 6.3.1.9). In this savant cluster, therefore, the specific skills identified combine those from the Generalist group with those of the Consultant group.

Consulting (e.g. for end user computing)

Advising

Enabling

Encouraging

Facilitating

Guiding

Helping

Supporting

Evaluating

Products

Methodologies



Technology

Keeping abreast of technology

Instructing

Educating

Teaching

Training

SEE ALSO THE FOLLOWING CLUSTERS

Change agent

Evaluation

Human issues

Investigative

Performance

Project Management

System Acquisition.

7.3.2.10 SYSTEMS ACQUISITION (GROUP 10)

There was a suggestion, from the empirical research and the literature survey, that the future systems analyst required a group of technical, non-analytical skills. The respondents to the questionnaire agreed that skills like determining appropriate development methods, designing logical data models and implementing application packages would be necessary for the future systems analyst (see section 5.3.2.1.3). Skills identified in the literature were taken from the Systems designer group (section 6.3.1.20) the Database designer group (section 6.3.1.5), the Prototyper group (section 6.3.1.16), the Implementor group (section 6.3.1.10) and the Developer group (section 6.3.1.6). The skills which

will enable the future systems analyst to design, develop, install and implement both computer-based and manual systems, therefore, include:

- Identifying appropriate approach

- Building competitive positions

- Designing audit/control procedures (audit trails)

- Designing user work-flows

- Recognizing different world-views

- Computer-based systems

- Deciding on software acquisition method

 - Building systems to meet users' needs

 - Building systems which can be audited

 - Identifying/using appropriate methodologies

 - Using appropriate tools

 - Estimating time/cost/resources

 - Designing codes

 - Designing data-flows

 - Designing inputs/outputs

 - dialogues

 - forms

 - man-machine interfaces

 - reports

 - screens

 - Designing procedures

 - Designing source documents

 - Designing system function/conceptual designing

Generating applications

Programming: third generation

Programming: fourth generation

Prototyping: requirements only

Prototyping: whole system

Skills at appropriate design methods

Specifying programs/systems

Structuring algorithms

Using automated development tools

Using charting techniques

Using computer-aided design

Using development work-stations

Using pseudo-code

Acquiring application packages

Evaluating/selecting packages

Tuning purchased software

Implementing packages

Acquiring hardware (communication/processing)

Designing hardware requirements

Evaluating/selecting hardware

Specifying hardware requirements

Determining data requirement

Controlling data redundancy/normalizing data

Designing data structures

Designing/creating files

Ensuring data independence

- Ensuring data integrity
- Logical data modeling
- Separating physical/logical data structures
- Using data dictionaries
- Providing input to data dictionaries
- Working with database administrator

Manual systems

- Designing manual procedures
- Designing manual systems
- Implementing manual systems

Implementing systems

- Skills at conversion procedures
- Testing systems
 - Test data designing
 - Testing developed systems

- Implementing appropriate systems

Monitoring systems

- Sharing responsibility of system with the users

SEE ALSO THE FOLLOWING CLUSTERS

- Change agent
- Human issues
- Investigative
- Evaluative.

7.3.2.11 SUMMARY OF INITIAL FINDINGS

It was found that the two models built during the research could be

combined under ten generic groups of skills which were chosen to be independent of any possible future systems development life cycle. While the skills identified in the empirical research reflected those found through a survey of the literature, these data gave an impression of incompleteness because they were not presented in the same level of detail as the skills identified in the literature. The combined findings, however, provided a comprehensive skills profile of the future systems analyst. This profile can be used to recruit suitable staff, develop relevant education and training programmes, and plan appropriate career paths for future systems analysts.

7.4 COMMENT ON THE INITIAL FINDINGS

Comment on the identification of the skills profile of the systems analyst covers four main issues. These issues are:

- the extent to which the findings can be generalized;
- the appropriateness of the term 'SYSTEMS ANALYST';
- 'SYSTEMS ANALYST' as an INDIVIDUAL or a ROLE in application software development;
- the need for the results to be analyzed further.

7.4.1 THE EXTENT TO WHICH THE FINDING CAN BE GENERALIZED

Questionnaires were not sent to companies with I.S. departments of less than ten employees because it was felt that the nature of systems analysis in the very small environment may be inconsistent with the main thrust of software application development (see section 4.2.3.2). Before the findings of this research can be generalized to include all

systems analysts, further research is required to determine if there are any significant differences between the skills required in the very small and larger I.S. environments (see section 8.3.3).

7.4.2 THE JOB TITLE 'SYSTEMS ANALYST' IS INAPPROPRIATE

Although 10 generic clusters of skills were identified as necessary for the systems analyst of the future, only one of these (the investigative cluster) included analytical skills. This reinforced the concern about the validity of the name 'systems analyst' as an appropriate title for the position (see section 1.3 point iv). It was concluded, therefore, that the job has evolved to the extent that the term 'systems analyst' has become too confining and, therefore, can no longer be regarded as appropriate.

Rather than attempt to identify another single term which incorporates the broad spectrum of identified skills, the lead given by, for example, Jones (1985, p.25); Martin (1982, p.337); Barr and Kochen (1984, p.169) was followed and a new dispensation of job categories is suggested (see section 7.5.2.1). For the moment, therefore, the term 'system analyst' (in inverted commas) will be used.

7.4.3 SKILLS PROFILE FOR A ROLE, NOT AN INDIVIDUAL

Some authors (e.g. Clarke and Prins, 1986, p.34) have written about 'systems analysts' skills' as if they are referring to the skills possessed by, or to be developed in, a single individual. The range of skills identified in this research as necessary for the future 'systems analyst' to function effectively, covers a broad spectrum of activities

(see section 7.3). Some of the skills required are singularly technical (e.g. SYSTEM ACQUISITION CLUSTER (section 7.3.2.10)), others investigative and analytical (e.g. INVESTIGATIVE CLUSTER (section 7.3.2.6)), some are people-orientated (e.g. HUMAN ISSUES CLUSTER (section 7.3.2.5)) others have a strong management bias (e.g. PROJECT MANAGEMENT CLUSTER (section 7.3.2.8)). It seems unlikely that all these skills will be found in an individual. Rather this range of skills is more likely to be the definition of the activities to be performed (perhaps by a number of individuals) to ensure that efficient and effective commercial systems are implemented. It is concluded that the research findings provided the skills profile of the 'systems analysts' role, rather than the skills profile of an individual 'systems analyst'.

7.4.4 FURTHER ANALYSIS OF THE FINDINGS

One of the objectives of the research was to identify the skills required by the 'systems analyst' of the future (see section 1.5). Early in the research a problem was experienced defining the term 'SYSTEMS ANALYST' (see section 2.1.1.4). Later the term itself was found to be inappropriate and alternatives were suggested (see section 7.4.2). In the previous section in this chapter (section 7.4.3) it was concluded that the skills profile identified in section 7.3 perhaps best describes the skills profile of a future 'systems analysis' function or ROLE, rather than the skills profile of the individual 'systems analyst' of the future (see Meissner, 1986, p.7 and Guimaraes, 1980, p.2). It seemed, therefore, appropriate to analyze the research findings further

in an attempt to identify the possible presence of discreet job categories within this role - an idea suggested by Zmud (1987, p.137).

7.5 ANALYZING THE FINDINGS FURTHER

It is recognized that the design and redesign of existing jobs represents sound management practice, since it leads to more effective utilization of human resources in the meeting of both personal and organizational goals (Peterson and Tracy, 1979, p.85).

The call for the establishment of new job categories (which is the direct result of redesigning existing jobs) particularly within the I.S. development environment is found in the literature (e.g. Martin, 1982, p.337 and Gilb, 1988, p.351). This stage of the research is identified in figure 7.4, in which an attempt is made to redesign the jobs within the systems development activity.

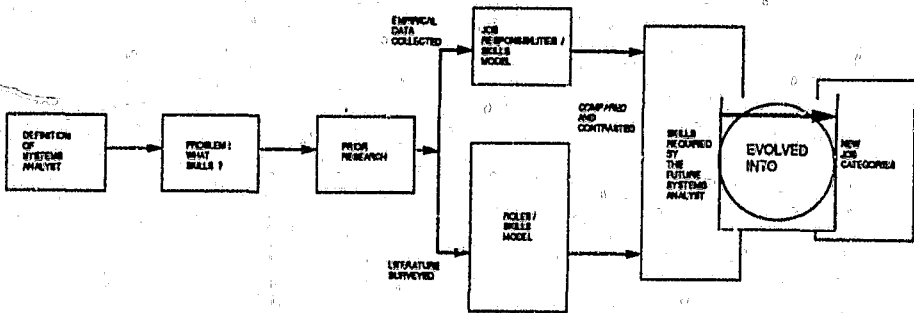


FIGURE 7.4

This stage of the research in context

7.5.1 THE ANALYTICAL PROCESS

The analytical steps taken to identify the new jobs inherent in the skills categories identified in section 7.3.2 were not an attempt at job design through human engineering. These techniques were not followed because it can be claimed that the concept of human engineering is ultimately based on the assumption that work should be explicitly organized to take into account the potentialities and limitations of the workers (Schein, 1970, p.30). Obviously no such approach could be taken in this study.

The process followed in identifying the new dispensation of job categories was based on an idea borrowed from Couger's study of employees' perceptions of their work. He used a model devised by

Hackman and Oldham to measure how I.S. employees to see their jobs, and to determine whether their perceptions of their work differ from those of other employees (Couger, 1978, p.118).

Included in the steps which should be followed to use the Hackman-Oldham model as a job diagnostic survey instrument are:

- a thorough diagnosis,
- forming natural work units,
- combining tasks,
- vertical loading,

(Huse, 1980, p.314).

While this process was followed, the steps required a degree of adaptation to cater for assessing a job role which does not currently exist, but is expected to exist in the future.

7.5.1.1 THOROUGH DIAGNOSIS

This step of the Hackman-Oldham model is used to determine whether motivation and job satisfaction are problems for people employed in a particular position. It was obviously not possible to include this procedure in the analytical process followed in this research.

7.5.1.2 FORMING NATURAL WORK UNITS

The motive behind this step is to attempt to increase the 'ownership' of the task (Huse, 1980, p.315). This is achieved by grouping natural activities together as much as possible. It was found that three of the skills clusters identified in section 7.3.2 could be subdivided to increase task identity.

(i) Evaluation cluster (section 7.3.2.4)

The skills required to ensure that computer-based systems can be audited seemed to form a different work unit from the quality control skills grouped in this cluster. These audit related skills identified tasks which could be described as SYSTEMS AUDITING. Other skills in this cluster were later grouped in the GENERALIST category.

NOTE:

1. It is unlikely that the full responsibility for auditing computer-based systems can fall outside the auditing profession (Weber, 1982, p.82). Consequently, the actual auditing of computer-based application systems is not seen as a function of I.S. industry personnel. Within the I.S. industry, however, there is the need for specialists who will advise on how to develop and implement sophisticated systems which use the evolving technology and which can be audited to the complete satisfaction of the auditing profession.

(See section 7.3.2, part of Group 4.)

2. A view is held that one of the specialist roles could be that of Quality Assurance (see Harold, 1983, p.102). Because best results appear to be achieved when the people doing the work are ultimately held responsible and accountable for that work - including its quality (see

Allen, 1969, p.113) - the control of the quality of a computer-based system is regarded as the developer's responsibility, and not that of a separate specialist group.

(ii) Investigative cluster (section 7.3.2.6)

A work unit of skills associated with the information engineering activity of identifying corporate information needs was identified in this cluster. This task was called INFORMATION ARCHITECTURE.

This investigative role will require skills which will include:

- long-range planning,
- using appropriate methodologies (e.g. information engineering),
- identifying corporate data requirements,
- designing logical databases (logical data modeling).

(See section 7.3.2, part of Group 6.)

Other skills in this cluster were later grouped into the GENERALIST and SAVANT categories (see section 7.5.1.3).

(iii) System acquisition cluster (7.3.2.10)

Two specific tasks were identified in this large group of skills.

Those skills associated with the building of an organization's database appeared to form a separate work unit. This was called the DATABASE specialist group. The skills required for this role will include:

- designing data structures,
- using data dictionaries,

- working with the database administrator,
- using appropriate technology.

A second group of skills were associated with the identifying of user needs. Because of the difficulty in determining individual computer-based system requirements (Jenkins et al., 1984, p.79; Bahl and Hunt, 1984, p.12), it is envisaged that more technological advances will be made in order to enable prototype versions of systems to be built (see section 2.1.2.3.4). The specialist in this area will need a broad range of investigative, systems acquisition and technical skills and could be called a PROTOTYPER.

(See part of sections 7.3.2.6 and 7.3.2.10.)

Other skills in this cluster were later grouped in the GENERALIST and SAVANT categories (see section 7.5.1.3).

7.5.1.3 COMBINING TASKS

Two further work units were identified by combining the skills from multiple categories identified in section 7.3.2. In both cases the job category was suggested in the literature.

(i) THE GENERALIST

The evolution of this position is often referred to in the literature (e.g. Callahan, 1985, p.32; Clarke and Prins, 1986, p.32; Benbasat et al., 1980, p.31). This position was identified by combining the skills from a number of clusters, and so expand the systems analyst's position to include all the

application development activities. Skills were combined from the following groups:

- computational
- evaluative
- investigative
- project management
- systems acquisition.

The following 3 points are noted.

- (a) This generalist role is possibly the role into which the current 'analyst-programmer' job will evolve.
- (b) The skills profile which the respondents to the questionnaire envisaged (see section 5.3.2) tended towards a generalist category;
- (c) Possible names for this generalist position are SYSTEMS DEVELOPER (Smith, 1983), or SYSTEMS BUILDER (Jones, 1985, p.26).

(ii) THE SAVANT SPECIALIST

One of the job categories in the specialist group also has a literature base. It is referred to as:

advisor, mentor (Barr and Kochen, 1984, p.175)

encourager (Martin, 1982, p.334)

system building facilitator (Rivard and Huff, 1985, p.90).

The skills required for this task were drawn from the

investigative, savant and systems acquisition clusters and included:

consulting (e.g. through an information centre)

instructing (both within and outside the I.S. department)

evaluating (e.g. new products and new technology).

(See section 7.3.2.9.)

7.5.1.4 VERTICAL LOADING

The intent of vertical loading is to decrease the gap between the 'doing' and the 'controlling' aspects of a job. This exercise inevitably increases the autonomy of a task (Huse, 1980, p.316). This step strengthened the task identity of the GENERALIST position (see section 7.5.1.3 point (i)).

7.5.2 RESULTS OF THE ANALYSIS

The results of this analysis provided both a new order of job categories in I.S. development and the essential skills required for all the identified generic job clusters.

7.5.2.1 NEW JOB CATEGORIES

The new job categories suggested by this research move away from the traditional titles of programmer, analyst-programmer, systems analyst etc. The following categories are suggested.

GENERALIST (the SYSTEMS DEVELOPER)

SPECIALIST POSITIONS

INFORMATION ARCHITECT

DATABASE SPECIALIST
PROTOTYPER
SAVANT
SYSTEMS AUDITOR.

7.5.2.2 ESSENTIAL SKILLS

Analysis of the initial findings indicated that future development and implementation of commercial computer-based systems will demand a range of skills which will be required irrespective of the particular generic job cluster in which the individual will be working. These essential skills have been identified subjectively and listed in table 7.4. It is suggested that, to be competent in the application development industry, an individual must be capable of developing these skills. Failure to ensure this is likely to lead to unmet expectations for both employer and employee.

TABLE 7.4

Skills essential to any groupings within the role

1. Skills in the BUSINESS ACUMEN cluster
 2. CHANGE AGENT/CREATIVE skills
 3. Skills in HUMAN ISSUES
 - communication skills
 - interpersonal skills
 - ergonomic skills
 4. INVESTIGATIVE skills
 - analytical skills
 - fact finding skills
 - problem solving skills
 5. Skills in the PERFORMANCE cluster
-

FACTORS WHICH INFLUENCE THE MIX OF SKILLS REQUIRED WITHIN EACH CATEGORY

The exact mix of skills appropriate in a particular set of circumstances is beyond the scope of this research (see section 8.4.3). The following two factors, however, are likely to influence the level of skills required in each job category.

(i) STRATEGIC IMPACT OF THE I.S. ENVIRONMENT AND THE PARTICULAR SYSTEM

The categories of strategic relevance of systems have been identified by Cash et al. (1983, p.27). The emphasis on the skills required to develop systems in each of these environments may need to change to reflect different characteristics of the existing and envisaged systems. Some subjective suggestions are made in table 7.5.

(ii) THE MATURITY OF THE I.S. DEPARTMENT

Although Nolan's Stage Model (Gibson and Nolan, 1974, p.76; Nolan, 1979, p.115) has been questioned (see Lucas and Sutton, 1977, p.254; King and Kraemer, 1984, p.466, Benbasat et al., 1984, p.476), it is fairly widely used to describe the stages of growth through which I.S. departments mature (see Davis and Olson, 1984, p.450; Cushing, 1982, p.298; Dickson and Wetherbe, 1985, p.26; Cash et al., 1983, p.312; Woodruff, 1982, p.11). There seems to be evidence that more and less mature I.S. departments can be identified (see Benbasat et al., 1980, p.23). In the more mature environments the emphasis of computer-based systems development is more likely to include specialist skills (e.g. information

architect, database, prototyper specialists). The generalist skills of the systems developer are likely to be more important than specialist skills in less mature I.S. departments (see Benbasat et al., 1980, p.29).

TABLE 7.5

The emphasis of skills required in the different strategic relevance environments (see Cash et al., 1983, p.27)

ENVIRONMENT	POSSIBLE SPECIALIST EMPHASIS
Support	Savant
Turnaround	Information architect
	Database
	Prototyper
Factory	Savant
	Systems developer
Strategic	Information architect
	Database
	Prototyper
	Savant
	Systems developer

7.7 SUMMARY OF THE CHAPTER

At this stage of the study the research programme was complete. The final conceptual model is presented diagrammatically in figure 7.5. The skills required by the systems analyst of the future were identified by the building of two models (the job responsibilities/skills model described in chapter 5, and the roles/skills model described in chapter 6). To help minimize the probability that required skills had been

overlooked, the findings from building the models were combined (section 7.3.2). To ensure that the skills required by the future systems analyst were not linked to any perceived systems development life cycle, new skills clusters were identified that were linked initially to occupational categories, and expanded from ideas published in the literature (see section 7.2.1). Using Hackman and Oldham's job diagnostic survey instrument as a base, it was found that these skills clusters could be combined into a new dispensation of job categories. These new job categories suggest that there is no future for the traditional systems analyst. Systems developers will be involved in either generalist activities (of building whole systems), or specialist activities (whose exact nature will be situationally dictated). From the final research findings it was possible to identify those skills which will be essential to the future 'systems analysts', irrespective of the job category to which they belong.

The final chapter of the thesis is an attempted evaluation of these findings and an indication of areas where further research is required.

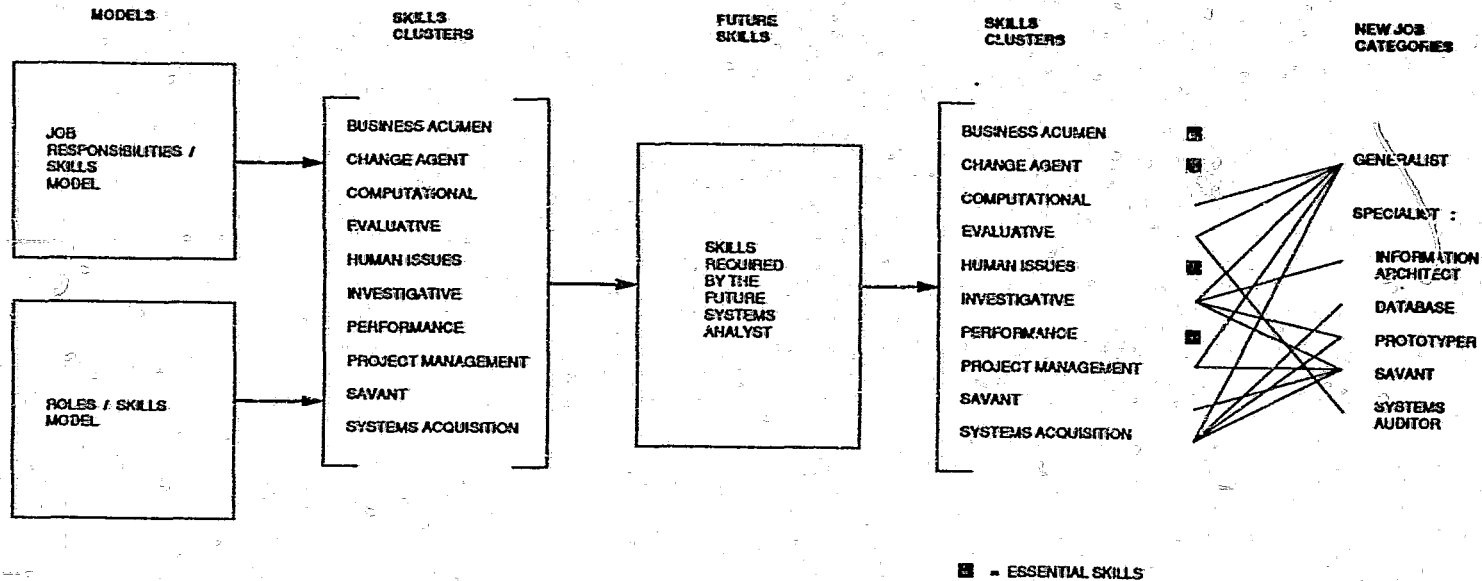


FIGURE 7.5
Final conceptual model

CHAPTER EIGHT

CONCLUSION

There is an expectation that advances in technology, particularly computer technology, will continue to accelerate into the next decade. Organizations which do not exploit these advances place themselves at risk. In the commercial environment the computer and computer-based systems are expected to re-inforce their central position.

It is argued that the 'systems analyst' is the central figure in ensuring that computer technology is used to the benefit of commercial organizations. Unfortunately, however, the accelerating changes in technology have contributed to the 'systems analysts' environment being in a state of turmoil. This turbulence is such that there is no longer a clear definition of the term. In fact, a case can be made for the claim that the meaning of the term has out-grown its original parameters. Opinions differ significantly on what constitutes an appropriate educational or training programme for the 'systems analyst', and on what can be considered as the correct background or career path for so important a figure. Unless managers resolve these issues, the value of advances in technology may be depleted.

This research assists with solving these problems because it was aimed at identifying the skills required in the future by this key figure in application systems development. Working from the base of these identified skills, appropriate backgrounds and career paths can be identified and suitable recruiting and training programmes for the systems analyst of the future can be designed.

In this chapter a summary is given of the objectives of the

research and the procedures followed during the research programme. The findings of the research are assessed critically, before some hypotheses generated by the research and areas of further research, are identified.

8.1 SUMMARY OF THE RESEARCH

Because of certain limitations which could be identified in earlier research attempts on this, and closely related topics, this research was undertaken with specific characteristics and clearly identifiable objectives.

8.1.1 RESEARCH CHARACTERISTICS

This research was classified as a hypothesis generating field study, which shared characteristics in common with conceptual studies which do not involve either a dependent or an independent variable. Care was taken to ensure that the research, which was focused on the skills required for the systems analyst of the future, was based on both a valid empirical study and a thorough literature survey.

8.1.2 SUMMARY OF RESEARCH OBJECTIVES

The objectives set for the research obviously had to focus on the future, and people's perception of the role of the 'systems analyst' in the future.

The first objective was to attempt to provide a definition of 'systems analyst'. By meeting this objective, both an insight into documented perceptions of this position and a base from which the

changing role of the 'systems analyst' could be identified, was provided.

The second objective of the research was to identify the skills profile of the systems analyst of the future. This profile would provide an indication of the type of person most likely to be effective in this position, what training and education for people preparing to work in the position will be appropriate, and what career paths are likely to be suitable for people in the position.

It was expected that, while trying to meet these objectives, a spectrum of opinions would be identified. The third objective, therefore, was to compare and contrast the opinions (concerning the skills required by the future 'systems analyst') identified in both the empirical research and the literature survey. Included in this analysis was an attempt to identify why differences of opinion do exist.

8.1.3 SUMMARY OF RESEARCH PROCESSES AND FINDINGS

The research programme was based on the construction of two conceptual models. The first model (called the job responsibilities/skills model) was built from the empirical data collected for the research. The second model (called the roles/skills model) was constructed as a result of a literature survey. The findings of the research were based on the combining of these two models.

Building the job responsibilities/skills model

A questionnaire was constructed, using the opinions of a group of experts to provide the dimensions of its questions. This questionnaire

was distributed to a group of practising 'systems analysts'. Replies were received from 159 participants, which constituted a 39,2% response rate.

After ensuring that the opinions of these respondents could be regarded as representative of a population of practising 'systems analysts', the data collected were compared and contrasted to identify areas of disagreement, and areas where no disagreement of respondents' opinions could be identified.

Based on this consensus, the job responsibilities of the 'systems analyst' of the future were identified. The skills required by the 'systems analyst' to perform these job responsibilities were linked to the responsibilities. This combination of opinions was called the job responsibilities/skills model.

Building the roles/skills model

The literature was searched to identify each association which future 'systems analysts' will be expected to have with their environment. The nature of these associations was defined in terms of the roles which 'systems analysts' will have to fill within each of these associations. The skills required to perform effectively within each role were identified. This structural association of roles and skills was called the roles/skills model.

Combining the models

To build the skills profile of the 'systems analyst' of the future, the skills identified by the building of the two models were merged. The

overlapping and redundancies of skills which were obvious from this merger were reduced by grouping the skills into natural activity units. Ten such skills clusters were identified. Some of these clusters (e.g. evaluative skills, investigative skills and systems acquisition skills) were found to relate directly to the 'systems analyst' task. Other clusters (e.g. business acumen, human issues skills and performance skills) were identified as skills which will assist 'systems analysts' to be more effective at their task. A third group of clusters (e.g. computational skills, project management skills and savant skills) were so diverse from the other clusters of task skills that, even at this stage of the research, a new dispensation of job categories for the 'systems analyst' of the future was suggested. Later in the research an attempt was made to identify these new job categories.

Research findings: disagreements

Because the research was aimed at the future, and was based on people's opinion (which would obviously be coloured by their experiences of using technology), a high level of consensus on the issues raised by the research was not expected. It was planned to analyze disagreements in two categories:

- disagreements between the constituent groups who participated in the empirical study;
- disagreements between the findings of the empirical research and the literature survey.

The disagreements identified in the empirical study could be grouped into three types:

- (i) Disagreements which reflected a move away from the traditional methods of systems development (e.g. some respondents did not regard skills in structured systems analysis and algorithm structuring as important to the future 'systems analyst');
- (ii) Disagreements which indicated that, to some people, the role of the 'systems analyst' is broadening (e.g. some respondents identified skills of determining corporate data requirements and a whole range of project management skills as important to the future 'systems analyst');
- (iii) Disagreements which reflected a failure to recognize the significance of certain 'systems analyst' skills and, therefore, which should be the source of concern for the members of the South African computer industry (e.g. some respondents did not regard skills in business practices or interpersonal relationship skills as important to the future 'systems analyst').

Research findings: no evidence of disagreement

From the areas of where no areas of disagreement could be identified when the job responsibilities/skills model and roles/skills model were combined, the following conclusions were reached:

- (i) The range of skills demanded from the 'systems analyst' of the future will be such that it is unlikely they will be found in a single individual. This conclusion supported the view of Martin (see section 2.2.1.2.1) that the term describes a role rather than a person.
- (ii) The skills identified as necessary for those involved in future

application systems development, can be grouped into a new dispensation of job categories:

- One of these categories will demand a wide range of generalist skills which makes the name 'SYSTEMS ANALYST' too restrictive. This category could be given a new job title of either

SYSTEM BUILDER or

SYSTEM DEVELOPER.

- The other broad job category can be sub-divided into a number of specialist activities. These activities may, or may not be the responsibility of single individuals. The specializations identified in this research were:

THE SAVANT SPECIALIST - an evaluator who instructs and consults.

THE INFORMATION ARCHITECT SPECIALIST - a long-range planner who identifies corporate data requirements.

THE DATABASE SPECIALIST - a technician who ensures that the source of information required by a company is in place.

THE PROTOTYPER SPECIALIST - an investigator and problem-solver who builds working models to identify user requirements.

THE AUDIT SPECIALIST - an advisor who enables sophisticated systems to be built in such a way that they can be audited.

(NOTE: While there may be cases where similar job titles are used by individual organisations, it is concluded that this usage is not wide-spread. None of these

titles is found among the commonly used categories identified in the annual salary survey of the I.S. industry, conducted by the Remuneration Services Division of P-E Corporate Services (see P-E, 1989).)

It was also concluded that the supportive skills required for all job categories include skills to function effectively in the business environment, skills to introduce change into a business environment, skills at working productively with other people and skills at motivating and controlling personal performance. People without the potential to develop these skills should not be recruited into the discipline.

8.2 EVALUATION OF THE RESEARCH

The research is evaluated from two perspectives. Firstly, the extent to which the research has made a contribution to knowledge is assessed and, secondly, the limitations of the research are identified.

8.2.1 EXTENT TO WHICH THE RESEARCH MADE A CONTRIBUTION TO KNOWLEDGE

The contribution which this research has made to knowledge is given against the background of the turbulence in the 'systems analysts' environment. In this section the problems which motivated the research are summarized, an assessment is given of the extent to which the research met its objectives and the value of the analysis done beyond meeting these objectives is assessed.

8.2.1.1 THE TURBULENT ENVIRONMENT

A combination of changes forced by technological advancements and user expectation from computer based information systems have placed the 'systems analysts' environment into a state of turmoil.

The increased sophistication of hardware and software have led directly to the possibility of new application development methods (e.g. fourth generation languages, prototyping and end user computing). These new methods threaten to make the traditional systems development life cycle obsolete. The more powerful development tools enable more complex and refined systems to be built.

The users of computer-based systems have increased their demands for application, not just in number but also in complexity (see section 2.1.2.3.3).

At the centre of this turbulence is the 'systems analyst' (whose responsibility it is to use technology to meet users' needs). In this research the question was asked whether these changes are influencing the 'systems analysts' role to the extent that they demand new skills, new training and education, new background experience and new career-paths for this position. In fact, these changes may be so dramatic that unless some indication of their consequences is identified, inappropriate skills will be sought in those being recruited into the 'systems analysts' discipline. The best use of the power of computer-based technology will only be ensured if the role of the 'systems analyst' moves away from the activities which characterized third generation computing.

This research is aimed at identifying this changing role, and the skills required to function effectively in the new environment.

8.2.1.2 EXTENT TO WHICH RESEARCH MET ITS OBJECTIVES

It is acknowledge that the meeting of research objectives does not necessarily mean that the research has made a contribution to knowledge. This claim is made here because, in each case, the objectives for this research were to identify specific groups of information, which had not previously been published. In general terms, therefore, provided the objectives were met, the research made a contribution to knowledge.

The four objectives of the research were set in an attempt to identify the skills required for the changing role of the 'systems' analyst'. In this section an assessment is given on the extent to which these objectives were met.

OBJECTIVE 1 (Provide a clear definition of 'systems analyst')

This objective was met in two ways:

- (i) After a summary of the literature definitions of a 'systems analyst' was given in table 2.1, a definition of the term was suggested in section 2.1.1.4.
- (ii) In the context of the research, though, a more important step was to identify the activities which form the basis of the role of the 'systems analyst' of the future. This was done in section 7.3.2. By identifying these roles, which define the 'systems analyst' of the future, it became clear that the term 'systems analyst' has

expanded beyond its origin meaning. In fact, in some areas these roles were so different from the definition provided in section 2.1.1.4 that they offered support for Martin's contention that the job of the 'systems analyst' will change completely. This assertion laid the foundation for the suggestion that the title 'systems analyst' is no longer appropriate.

OBJECTIVE 2 (Provide a skills profile of the 'systems analyst' of the future)

This objective was met by combining the skills identified by building the job responsibilities/skills model (chapter 5) and the roles/skills model (chapter 6). The skills which form this profile were not presented in clusters based on the traditional systems development life cycle, because there is evidence that the evolving technology will make that life cycle obsolete. The skills required by the systems analyst of the future were presented in section 7.3.2 in clusters identified in the literature and supported by a factor analysis of the empirical data. (The ten skills clusters were business acumen skills, change agent skills, computational skills, evaluative skills, human issue skills, investigative skills, performance skills, project management skills, savant skills and skills in system acquisition).

OBJECTIVE 3 (Compare and contrast the opinions of the participants in the empirical study)

Analysis of variance statistics were used to compare the opinions of the three constituent groups of respondents to the questionnaire (the

practitioner experts, the academics and the practising systems analysts). These comparisons revealed disagreements covering a broad range of activities. The one group of disagreements (e.g. project management, implementation responsibilities and the use of traditional development methods) could be attributed to different perceptions among the respondents of the future role of the systems analyst. The other group of disagreements, however, included skills which have been regarded as central to the 'systems analyst' task (e.g. skills in business practices, change agent skills and interpersonal relationship skills). Managers in the South African computer industry need to note these opinions to ensure they are not contributing to ineffective or unsuitable systems development (see section 5.2.2.1).

OBJECTIVE 4 (Compare and contrast the opinions identified through the empirical research with those identified in the literature survey)

To meet the previous objective, the data collected in response to the questionnaire were processed in groups (see section 5.2.1). The empirical data were processed as a whole to meet this objective (see sections 7.3.1 and 7.3.2). The skills identified by processing all the empirical data were compared with the skills identified in the literature survey. This comparison did not reveal total agreement. The findings of the literature survey indicated the need for more detailed, and sometimes specialist skills (e.g. specialist prototyping skills or specialist quality assurance skills), the empirical research identified the need for skills which seemed more appropriate for a generalist role (e.g. building whole systems). In spite of these

disagreements, however, there was a clear indication from this comparison that the role of the 'systems analyst' is changing (particularly in the areas of certain investigative, management and system acquisition skills).

8.2.1.3 VALUE OF THE RESEARCH BEYOND MEETINGS ITS SPECIFIC OBJECTIVES

The research made further contributions to knowledge in two areas:

- (i) The task of the 'systems analyst', which is more likely to be associated with a role than with an individual, can be sub-divided into generic clusters (see section 7.2.2). The clusters identified in this research, are totally independent of any present or future systems development life cycle.
- (ii) Because the skills identified in the research as being necessary for the future 'systems analyst' are not likely to be found in single individuals, a new range of job categories in systems development is suggested. Using the clusters of skills which are independent of a systems development life cycle as a base, new job titles, which are appropriate for this changing role, have been suggested. These job titles reflect the nature of the tasks to be performed and the skills required to perform these tasks (see section 7.5.2.1).

8.2.2 IDENTIFIED LIMITATIONS IN THE RESEARCH

All the limitations listed below have been discussed in detail earlier in the thesis. This summary is divided into three sections:

- limitations in the empirical research,
- limitations in the literature survey,
- limitations inherent in the approach taken to conduct this research.

(i) THE EMPIRICAL RESEARCH

The limitations of the research in respect of collecting and analyzing the empirical data are detailed in section 4.3.3.

These limitations can be summarized as:

- there was evidence that the sample population was suffering from survey saturation;
- the exact sample population was not known, consequently each questionnaire had to be distributed through a third person and attempts to follow-up directly on determining the opinions of non-respondents were abandoned;
- the use of questionnaires as the method to collect the respondents' opinions brought with it inherent weaknesses concerning the reliability and validity of the measuring instrument;
- it could not be established whether the respondents' opinions had been influenced by their having recently experienced some significant technological enhancement in their work environment;
- the sample population specifically excluded small (less than 10 personnel) I.S. departments;
- the skills identified by approaching the experts were not

modified by those identified in the literature, prior to the questionnaire being distributed to the sample population of 'systems analysts';

- some respondents showed signs of not having a clear understanding of some of the jargon used in the research;
- through limited information being made public, 'systems analysts' working for the large government and semi-government installations were excluded from the sample population.

(ii) THE LITERATURE SURVEY

In section 6.4 the limitations of collecting information through surveying the literature, were detailed. A summary of these limitations is provided below:

- only a small portion of the literature which could be identified was aimed specifically at identifying the skills for the 'systems analyst' of the future;
- it was difficult to ascertain from the literature the exact importance of the skills identified to the future 'systems analyst';
- skills comparisons and contrasts were difficult because some of the skills identified in the literature were specific and detailed, while others were composite in nature;
- the meaning of some of the documented skills was unclear;
- it was not possible to reconcile some of the sharp differences of opinion identified in the literature.

(iii) THE RESEARCH APPROACH

The limitations of this research inherent in the approach taken in the research programme are detailed in section 3.5. The main issues are summarized as follows:

- none of the skills identified by either the empirical research or the literature survey were confirmed through observation;
- no attempt was made to determine how a 'systems analyst' who would be rated as 'good', would use the identified skills;
- building skills profiles using generic groupings can be open to subjective influence and influence and interpretation;
- the nature of the environment being researched was such that some significant technological advance could invalidate the research, or sharply compress the timescale involved.

8.2.3 SUMMARY OF THE VALUE OF THE RESEARCH

In spite of the limitations associated with the approach taken, it was shown that the research objectives were met (see section 8.2.1.2). Each stage of the research process was planned, substantiated, carefully executed and the results were critically evaluated. There was sufficient evidence to support the claim that the research has made a contribution to knowledge (see section 8.2.1). The value of the research to the I.S. industry can be summarized under the following headings:

(i) STAFF SELECTION

The findings of this study give a clear picture of the functions to be performed by those involved in either generalist or specialist activities of future application development (see section 7.3.2). This information will enable staff selection procedures to be designed to avoid employing people who cannot adapt to the changing environment. Without making these adaptations, the evolving computer-based technology may not be used to its full potential.

(ii) EDUCATION AND TRAINING

Through this study the skills which will be essential to whatever function an individual may perform within the role of application systems development have been identified (see table 6.3). Knowing that these skills are necessary for a career in I.S. development provides a goal for curriculum design for both the academic sector and industry training establishments. Education or training which excludes meeting these goals may be of limited value.

(iii) CAREER PATH TRAINING

The results of this research provide the practitioner with two pointers vital to career path planning in the I.S. environment:

- firstly, they provide an indication of the type of background and experience which will be suitable for I.S.

- staff who will be effective application developers;
- secondly, they help direct planning on how I.S. personnel can best prepare for the future, and progress within their discipline as effective application developers.

(iv) STAFF LOYALTY

Because of the importance of business skills to the I.S. developer of the future, it is likely that staff will develop a loyalty, if not to an individual company, at least to an industry sector (rather than primarily to the computer industry). The careful planning of career paths for I.S. personnel will help to sustain this loyalty.

8.3 HYPOTHESES GENERATED BY THIS RESEARCH

This research was classified as a hypothesis generating field study (see section 3.2.3.3). The hypotheses identified in this section were those identified as a direct consequence of this research (other hypotheses are included in the section on further research suggested by this study (see section 8.4)).

8.3.1 HYPOTHESIS ON APTITUDE TESTING

There is a need to test whether positive links exist between commonly used aptitude tests for entrance into the computer industry (e.g. Burroughs Computer Programming Selection Test, ICL Programmer Aptitude Test, IBM Programming Aptitude Test) and the nature of the evolving systems development job. It may be that some (or all) of these tests

are attempting to measure inappropriate competencies and characteristics.

HYPOTHESIS:

The aptitude tests commonly used to measure the competencies required by the computer industry do not test for those competencies required by the future I.S. developer.

8.3.2 HYPOTHESIS ON THE PERSONALITY PROFILE OF THE SYSTEMS DEVELOPER

The need for interpersonal relationship skills (see section 7.3.2.5) and change agent skills (see section 7.3.2.2) were found to be essential skills to the future systems developer (see section 7.5.2.2). These findings suggest that the social need strength of systems developers will need to be higher than those found in Cougers' study of the 1970s (Couger, 1978, p.122). It may no longer be appropriate to call systems developers 'loners'.

HYPOTHESIS:

There is no difference in the social needs strengths of systems developers and the social needs strengths of other professionals.

8.3.3 HYPOTHESIS ON SMALL I.S. DEPARTMENTS

Small I.S. departments (i.e. less than ten employees) were specifically excluded from the sample population for this research. Before the findings of this research can be generalized to include all application

systems developers, it must be established if the assumption is correct that the nature of the work done in the small installations is inconsistent with the main thrust of I.S. activity.

HYPOTHESIS:

Skills required in the future by systems developers in small (less than ten employees) I.S. departments are the same as those required by the systems developers in larger I.S. departments.

8.3.4 HYPOTHESIS ON THE FUTURE OF PROGRAMMERS

One of the skills categories identified in this research as required by the systems analyst of the future related to the acquisition (and development) of computer-based systems (see section 7.3.2.10). These skills included building systems to meet users needs (e.g. using appropriate tools, structuring algorithms, prototyping and programming). If these skills are required for the 'systems analyst', or one or more of the new job categories identified in section 7.5.2.1, there may not need to be a programming role in future I.S. departments.

HYPOTHESIS:

There is no role in the future development of information systems for the programmer.

8.3.5 HYPOTHESIS ON JOB TITLES

It was found in this research (see section 7.4.2) that the range of skills required by the 'systems analyst' of the future cover such a

broad spectrum of activities that they could be grouped into 10 clusters (see section 8.3.2). Only one of these clusters (the investigative cluster) included analytical skills. Unless the job title SYSTEMS ANALYST be dropped, therefore, it will be used to describe a position of which analysis is a relatively small (although, unquestionably, an important) part.

HYPOTHESIS:

The continued use of the job title SYSTEMS ANALYST will lead to false expectations from both incumbents and managers of the position.

8.3.6 HYPOTHESIS ON IMPROVED JOB SATISFACTION

If new jobs are introduced into the I.S. environment to enable the increased sophistication of technological advances to be exploited, these new jobs are likely to bring increased satisfaction to the incumbents. This increased satisfaction should lead to greater productivity and possibly even the implementation of better computer-based systems. It is, therefore, important to know if the changes suggested in this research will be appreciated by the systems builders of the future.

HYPOTHESIS:

The new job categories identified in this research improve the output indices of factors such as job satisfaction, turnover, absenteeism, grievances, quality of work and productivity.

8.3.7 HYPOTHESIS ON EMERGING I.S. DISCIPLINE

In their 1986 research Culnan and Swanson attempted to plot the progress of MIS between 1980 and 1984 as a scholarly field of study (Culnan and Swanson, 1986, pp.289-301). Their conclusion was that MIS is emerging as a distinct discipline with its own cumulative tradition. They could not assume, however, that this distinctiveness would similarly reflect a growing consensus of published articles.

'In fact, the opposite may prevail. As MIS becomes more established, it may instead tend to fractionate from its foundational base.' (Culnan and Swanson, 1986, p.301).

It may be that the envisaged change from a single job category of 'systems analyst' to multiple job categories spanning both generalist and specialist activities supports the contention that as the MIS discipline matures, so a fragmentation of interests and activities can be expected.

HYPOTHESIS:

The fragmentation of the 'systems analysts' job is a reflection of a maturing I.S. industry.

8.4 FURTHER RESEARCH

This research was seen as one further stage in the building of a base of knowledge concerning the development and implementation of computer-based application systems. It drew significantly on the literature and was based on the findings of prior research in the area. As a result of its findings, therefore, it was inevitable that further

areas of research could be identified. Where appropriate, hypotheses relating to the further research topics have been identified.

8.4.1 REPEAT THE SURVEY

It is suggested that within the next five to eight years this research should be repeated using the same questionnaire as a measuring instrument. This repeat research programme will:

- help confirm the nature of the system building activity;
- provide further input to decisions on personnel selection, education and training in the application development industry;
- enable the processes used in this research to be tested for reliability and validity.

8.4.2 IDENTIFY WHAT MAKES A GOOD SYSTEMS DEVELOPER

Establishing the skills profile of the systems developer of the future is an important foundation for further research (see section 1.7). Research programmes will provide the I.S. industry with more significant results, however, if they can establish what underlying behaviours are required for effective performance from application development personnel.

HYPOTHESES:

- (i) The factors which characterize a good systems developer can be defined.
- (ii) The factors which influence the productivity of the systems developers of the future can be identified.

8.4.3 ESTABLISH APPROPRIATE SKILLS MIXES FOR DIFFERENT WORK ENVIRONMENTS

It is possible to identify different maturity levels and systems characteristics in I.S. departments (see section 7.6). It needs to be established whether different skills mixes from I.S. application development personnel are needed for each of these environments.

HYPOTHESES:

- (i) There is a direct relationship between the maturity of the I.S. department and the specific skills mix required by the systems developers who will be effective in that department.
- (ii) The more mature the I.S. department the more business skills are required by the system developer to be effective in that department.
- (iii) The more mature the I.S. department the less likely the score on the commonly used aptitude tests is to reflect appropriate competencies for the systems developer to be effective in that department.
- (iv) The skills mix required for the systems developer to be effective in each category of I.S. department as identified by Cash et al. (factory, strategic, support, turnaround) is unique.

8.4.4 THE IMPACT OF CULTURE AND LANGUAGE ON EFFECTIVE PERFORMANCE IN THE I.S. INDUSTRY

Many countries, like South Africa, have populations with multiple cultural and language backgrounds. Research is needed to establish:

- (i) whether people who do not speak English as their home language or do not have a First-world cultural background, are in any way disadvantaged when following careers in the technical I.S. environment;
- (ii) the nature and detail of the educational and training programmes needed to compensate for these differences, if they are identified as disadvantages.

HYPOTHESES:

- (i) The cultural background of systems developers has a direct effect on their performance in the implementation of information systems.
- (ii) People with a disadvantaged secondary school education are less effective as system developers.
- (iii) People with an African language as their home language are less effective as systems developers than people with English as a home language.

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Date:

Dear Colleague

I am currently involved in a research programme to explore the changing role of the System Analyst in the commercial application development industry in South Africa. As part of the foundation of this research I seek the opinions of a small group of leading academics on the subject. I write to you to ask if you will assist me by participating in one stage of the programme.

The expense and logistics of getting you together as a group to identify a group opinion force me to choose to gather opinions at a distance. (This approach has the added advantages of anonymous responses and a possible iteration through the process.)

I envisage that the procedure will have two cycles:

Cycle One - Attached to this letter are a group of definitions, a sample job description and a set of open-ended questions. I ask if you will help by please answering the questions. By their nature, these questions preclude any exact answers, so each person's opinion is valuable.

Cycle Two - Once the replies to these questions have been received and collated, the findings of Cycle One will be circulated back to all participants. This will provide you with the opportunity to assess the responses of others taking part in the programme. In the context of this added information you may still support your original estimates, but you will be given the opportunity, if you wish, to revise your opinions.

The final set of opinions will be used to construct a questionnaire which will be circulated to a large number of practising Systems Analysts, to assess how they predict their future role in application development.

To help maintain the momentum of the research, please will you send your reply to me (using the enclosed addressed envelope) by 30 September 1985.

Obviously I will be publishing my findings, but if you have a particular interest in this area, let me know and I will be pleased to send intermediate results to you.

In anticipation I thank you for your assistance both in terms of your time and your opinions.

Yours sincerely

PROFESSOR TREVOR D. CROSSMAN
(HEAD: DIVISION OF BIS)

ATTACHMENT TO SURVEY QUESTIONS

1. DEFINITIONS

THE FUTURE - between 5 and 8 years from now.

SKILL - the ability to perform specialized work with recognized proficiency.

2. SYSTEMS ANALYST JOB ACTIVITIES

The systems analyst gathers data for analysis of user applications and/or problem areas in order to design and develop new applications or to modify existing applications. In this capacity, the systems analyst:

ANALYZES the workflow, forms, files, reports, controls, organizational policies and practices, hardware, software, existing documentation and other applications affecting the application under study;

DOCUMENTS existing operations and procedures and evaluates them to determine the operational effectiveness of the existing application and if an alternate approach is necessary;

DESIGNS new or modified approaches that are technically, economically, and operationally feasible;

PREPARES the necessary flowcharts, structure charts, decision tables, program specifications, systems test data and plans, user procedures, conversion requirements, time schedules, and cost/savings estimates for new or revised applications;

DEVELOPS the necessary interfaces between data processing and user organizations;

MONITORS the development and implementation process;

CONDUCTS follow-up sessions to evaluate the effectiveness of recently implemented or revised applications, and prepares project activity reports for the upper echelon and steering committee.

QUESTIONS FOR ACADEMIC EXPERTS

Attached to these questions are:

- a definition of the FUTURE;
- a definition of the SKILL;
- a list of SYSTEMS ANALYST job activities.

1. What methods of application software development do you expect will be included in your syllabus in the future?
2. Using the attached job activities as a guide, what do you think a systems analysts job responsibilities will be in the future?
3. In your opinion, what specific skills will be required from a systems analyst involved in future commercial application systems development?

QUESTIONS FOR PRACTITIONER EXPERTS

Attached to these questions are:

- a definition of the FUTURE;
- a definition of the SKILL;
- a list of SYSTEMS ANALYST job activities.

1. What methods of application software development do you expect to be introduced into your organisation in the future?
2. Using the attached job activities as a guide, what do you think a systems analysts job responsibilities will be in the future?
3. In your opinion, what specific skills will be required from a systems analyst involved in future commercial application systems development?

QUESTIONNAIRE TO EXPERTS

SECTION 1

In your opinion, how important are the following tools and methods for future application development?

VERY IMPORTANT NOT IMPORTANT

Programming languages

COBOL

PASCAL

BASIC

ADA

7	6	9	8	1
		7	7	16
1	1	6	12	11
3	1	5	6	15

Databases

Integrated Databases

Data Dictionaries

21	6	5		
24	8			

Automated Development Tools

CAD (e.g. to document work-flows)

Interactive Screen Design

Interactive Report Design

Program/System Generators

8	7	9	4	3
23	9			
23	9			
21	6	1	4	

Application Packages

Implementation of Application Packages

Customizing Application Packages

9	14	5	3	1
6	15	8	2	1

Fourth Generation Techniques

Fourth Generation Languages

Prototyping

25	5	2		
22	7	2		1

VERY
IMPORTANT

NOT
IMPORTANT

User Involvement

Information Centres

15	6	8	3	
----	---	---	---	--

End User Development

11	9	11	1	
----	---	----	---	--

User Representatives on Project Teams

23	6	2	1	
----	---	---	---	--

The Traditional Development Life Cycle

Without Prototyping

	6	8	11	6
--	---	---	----	---

With Prototyping

9	12	7	1	2
---	----	---	---	---

Developing Business Specifications

7	13	10	1	
---	----	----	---	--

Systems Evaluation using "Pilot" Projects

3	11	11	4	
---	----	----	---	--

Development Work-Stations

Programmable Terminals

7	8	10	6	
---	---	----	---	--

Personal Computers with Mainframe Link

16	12	2	1	1
----	----	---	---	---

Development Centres

Information System Staff Only

2	8	12	7	3
---	---	----	---	---

Information System Staff and Users

11	12	5	3	1
----	----	---	---	---

Centralization

Strategic Information Systems Planning

16	10	6		
----	----	---	--	--

Standards Enforcement

11	12	8	1	
----	----	---	---	--

Centralized Project Control

3	10	14	3	2
---	----	----	---	---

Others (Please Specify)

...RPG II.....

	1			
--	---	--	--	--

...TUNING AIDS.....

1				
---	--	--	--	--

...ARTIFICIAL INTELLIGENCE SOFTWARE.....

1				
---	--	--	--	--

VERY
IMPORTANT

NOT
IMPORTANT

Others (Please Specify)

..... Common Work-stations
 Functional Databases
 Relational Databases
 Distributed Databases

	2			
	1			
1				
		1		

Other issues raised were either not development
 methods / tools, or had been mentioned elsewhere.

SECTION 2

Consider the systems analyst's job responsibilities in the future. How important, in your opinion, will each of the following activities be?

VERY
IMPORTANT

NOT
IMPORTANT

Analysis

- Using Formal Analysis Procedures
- Cost Analyzing Systems
- Identifying Work-flows and Procedures
- Conducting Feasibility Studies
- Identifying User Requirements
- Formally Documenting User Needs
- Producing Detailed Specifications
- Understanding Systems Interdependence
- Problem Solving

4	13	12	2	
7	13	9	2	
11	8	11	1	
6	14	7	2	2
22	5	3	1	
6	8	12	4	1
2	8	12	7	2
14	12	5		
12	16	3		

Systems Development

- Identifying Appropriate Development Methods
- Designing Systems
- Generating Systems
- Traditional Programming
- Prototyping Systems
- Building Whole Systems
- Tuning Generated Systems
- Integrating New and Existing Systems

12	15	2	3	
14	10	7	1	
6	14	9	1	1
	3	6	12	11
15	9	6	2	
8	13	8	3	
8	7	9	5	3
11	16	5		

VERY
IMPORTANT

NOT
IMPORTANT

Project Management

- Planning Systems Development
- Monitoring Systems Development
- Controlling Systems Development
- Evaluating Systems Development
- Reporting on Systems Development
- Evaluating Performance of Systems Developers

15	14	2	1	
15	11	4	2	
13	11	6	2	
10	12	9	1	
9	14	6	3	
8	12	8	2	2

Application Packages

- Selecting Packages
- Implementing Packages

11	9	9	2	1
6	11	9	6	

User Contact

- Working in User Department
- Increasing Business Knowledge
- Becoming the User
- Sharing Responsibility for System with User
- Training Users
- Acting as a Consultant

10	7	10	4	1
21	10	1		
3	8	6	14	1
10	10	11	1	
13	10	8	1	
15	8	8		1

Technology

- Understanding Information Technology
- Keeping Abreast with Technology
- Revising Standards for Development Methods

17	11	4		
14	12	6		
11	10	7	3	1

VERY
IMPORTANT

NOT
IMPORTANT

Others (Please Specify)

.....
.....
.....

OTHER ISSUES RAISED WERE EITHER NOT JOB
RESPONSIBILITIES, OR HAD BEEN MENTIONED ELSEWHERE.

SECTION 3

In your opinion, to what extent are each of the following skills required by a systems analyst in the future?

NOT REQUIRED COULD BE REQUIRED DEFINATELY REQUIRED

Development Centre Tools/Methods

Determining Appropriate Development Methods

	1	6	15	10
--	---	---	----	----

Determining Appropriate System Controls

		6	9	17
--	--	---	---	----

Determining Appropriate System Security

		5	8	19
--	--	---	---	----

Evaluating Software Packages

	4	5	15	8
--	---	---	----	---

Using Structured Analysis Methods

	2	10	15	5
--	---	----	----	---

Using Automated Systems Development Methods

		3	12	17
--	--	---	----	----

Using Prototyping Techniques

	1	4	9	18
--	---	---	---	----

Using Techniques Associated with Databases

		2	6	24
--	--	---	---	----

Applying Information Technology

1		5	8	17
---	--	---	---	----

Project Management

Project Planning

	1	7	8	16
--	---	---	---	----

Project Controlling

	1	9	9	13
--	---	---	---	----

Progress Monitoring

		8	10	14
--	--	---	----	----

Scheduling

	3	8	8	13
--	---	---	---	----

Estimating Timescales

	1	7	11	13
--	---	---	----	----

Critical Path Analysis

2	7	9	6	8
---	---	---	---	---

Decision Making

	1	9	13	9
--	---	---	----	---

NOT COULD BE DEFINATELY
REQUIRED REQUIRED REQUIRED

Finance

Cost Estimating
Cost/Benefit Analysis
Costing
Auditing Computer Systems

	1	9	13	9
2	1	10	11	8
2		13	8	8
2	4	11	9	6

Quantitative Methods

Statistics

2	7	12	5	5
---	---	----	---	---

Social

Working In and With a Team
Dealing with People
Being Diplomatic

		1	7	24
			6	26
	1	4	9	18

Hardware

Designing Installation Configurations
Designing Computer Networks
Using Computer Networks
Determining Telecommunication Requirements

6	5	15	7	1
7	7	11	4	3
	3	11	12	6
4	4	14	6	4

Software

Constructing Algorithms
COBOL Programming
FORTRAN Programming
Implementing Applications Packages
ADA Programming
Using Fourth Generation Languages

4	8	15	4	1
12	3	9	7	2
18	5	6	3	
1	1	12	9	9
15	7	7	2	
		5	8	19

NOT
REQUIRED

COULD BE
REQUIRED

DEFINATELY
REQUIRED

Communication

Interviewing

		3	6	23
--	--	---	---	----

Verbal Communicating

		1	3	28
--	--	---	---	----

Report Writing

		1	8	21
--	--	---	---	----

Presentation Preparing

			8	24
--	--	--	---	----

Teaching

		7	7	18
--	--	---	---	----

Selling

	1	7	13	11
--	---	---	----	----

Environment

Organisation Structuring

2	4	15	7	4
---	---	----	---	---

Identifying User Functions

	1	7	9	15
--	---	---	---	----

Implementing Office Procedures

	2	17	8	5
--	---	----	---	---

Establishing Corporate Data
Requirements

1	1	11	10	9
---	---	----	----	---

Business Practices

2	1	9	13	7
---	---	---	----	---

Analysis

Evaluating Existing Procedures

		3	13	16
--	--	---	----	----

Thinking Logically

			6	26
--	--	--	---	----

Problem Solving

	1		6	23
--	---	--	---	----

Acting as Change Agent

	2	3	6	21
--	---	---	---	----

Fact Finding

		2	8	22
--	--	---	---	----

Implementing Procedures

	1	10	13	8
--	---	----	----	---

Organization and Methods Skills

1	2	8	14	7
---	---	---	----	---

Identifying User/Management Needs

		4	8	20
--	--	---	---	----

NOT COULD BE DEFINATELY
REQUIRED REQUIRED REQUIRED

Management

Managing/Motivating People

Task Prioritizing

Strategic Planning

Identifying Competitive Advantages

Building Competitive Positions

Decision Making

Managing Change

Reviewing Performances

		1	8	23
		3	16	13
	2	9	15	6
	4	13	8	7
1	6	12	5	8
		6	16	10
		6	13	13
	1	6	13	12

Others (Please Specify)

NO OTHER ISSUES WERE RAISED

.....
.....



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Enquiries

Date 8 April 1986

Dear Colleague

It is often said that there is a skills shortage in the South African application software development industry. Efforts to correct the situation are difficult because the changing technology keeps demanding new sets of skills from the systems developers.

The attached questionnaire is part of a research programme which is attempting to identify the skills required by the systems analyst of the future. Knowing these skills is crucial to the recruiting, education and training of future systems analysts.

Because in South Africa there is no register of people involved in systems development, it was not possible for me to approach you directly. A senior member of your department was asked to identify appropriate people to participate in the research.

As you work through the questionnaire you will find some sections in which you are asked questions about yourself, while in others you are asked your opinion. Obviously, for these opinion questions there are no right or wrong answers. What is important is to know just what you think. Your answers can be completely frank. Neither your name, nor the name of your company will appear anywhere on the questionnaire. Completing the questionnaire will take you about 20 minutes, but the information you provide will help towards resolving one of the industry's serious manpower problems.

Please will you use the enclosed stamped envelope to return the completed questionnaire to me by 15 April 1986. If you have a particular interest in the research, please write to me under separate cover and I will send you interim results as soon as they become available.

In anticipation, I thank you for your help.

PROFESSOR TREVOR D CROSSMAN
(HEAD: DIVISION OF BUSINESS INFORMATION SYSTEMS)

INSTRUCTIONS TO PILOT STUDY PARTICIPANTS.

1. Please will you answer the Questionnaire.
2. Please will you write any criticism you have of either the covering letter or the questionnaire on the document concerned.
3. Aspects to consider include:
 - structure
 - lack of clarity
 - grammar/spelling
 - time to complete
 - relevance
 - etc.
4. I will arrange to collect the documents from you.

TREVOR CROSSMAN

APRIL 86.



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Date:

Dear Colleague

I am currently involved in a research programme to explore the changing role of the systems analyst in commercial computing in South Africa. This phase of the research involves gathering the opinions of systems analysts who are employed by a sample group of over 100 companies. Because there is no register of systems analysts (which would enable me to approach people directly) I write to you to ask if you will identify one person per enclosed questionnaire from your department and ask them if they will help by providing input to the research. To help guide you in your choice, please will you ensure that the participants are involved IN SOME ASPECT OF ANALYSIS WORK.

There is no place on the questionnaire for either the respondent's or your company's name. This anonymity will be respected. Completing the questionnaire will take about 30 minutes, but the information gathered will help to identify the skills required by the systems analyst of the future. This, in turn, will provide a basis for designing appropriate recruiting, educational and training programmes for the application development industry.

If you have a particular interest in this research, please do not hesitate to contact me and I will send you interim results as soon as they become available.

In anticipation, I thank you for your help.

Yours sincerely

PROFESSOR TREVOR D CROSSMAN

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Enquiries

Date 14 May 1986

Dear Colleague

It is often said that there is a skills shortage in the South African application software development industry. Efforts to correct the situation are difficult because the changing technology keeps demanding new sets of skills from the systems developers.

The attached questionnaire is part of a research programme which is attempting to identify the skills required by the systems analyst of the future. Knowing these skills is crucial to the recruiting, education and training of future systems analysts.

Because in South Africa there is no register of people involved in systems development, it was not possible for me to approach you directly. A senior member of your department was asked to identify appropriate people to participate in the research.

As you work through the questionnaire you will find some sections in which you are asked questions about yourself, while in others you are asked your opinion. Obviously, for these opinion questions there are no right or wrong answers. What is important is to know just what you think. Your answers can be completely frank. Neither your name, nor the name of your company will appear anywhere on the questionnaire. Completing the questionnaire will take you about 30 minutes, but the information you provide will help towards resolving one of the industry's serious manpower problems.

Please will you use the enclosed stamped envelope to return the completed questionnaire to me by 6 June 1986. If you have a particular interest in the research, please write to me under separate cover and I will send you interim results as soon as they become available.

In anticipation, I thank you for your help.

Trevor Crossman

PROFESSOR TREVOR D CROSSMAN
(HEAD: DIVISION OF BUSINESS INFORMATION SYSTEMS)

QUESTIONNAIRE ON THE SKILLS REQUIRED
BY SYSTEMS ANALYSTS

DEFINITIONS

FUTURE -- Between 5 and 8 years from now.

SKILL -- The ability to perform specialized work with
recognized proficiency

NOTE

There are no "right" answers to these questions. This is an
attempt to document what you think. Your opinion is needed for
this research.

T D CROSSMAN
DIVISION OF BUSINESS INFORMATION SYSTEMS
UNIVERSITY OF THE WITWATERSRAND
JOHANNESBURG

SECTION 1

1.1 WHICH OF THE FOLLOWING ACTIVITIES DO YOU PERFORM AS PART OF YOUR PRESENT JOB?

(EACH BOX WHICH IS APPLICABLE)

Determining system feasibility

Identifying system requirements

Conceptual systems design

Physical systems design

Specifying programs

Developing programs

Systems testing

Implementing systems

Evaluating implemented systems

Managing people who are developing systems

Other (please specify)

.....

.....

.....

1.2 CURRENTLY WHICH THREE OF THE ABOVE ACTIVITIES DEMAND MOST OF YOUR TIME?

1.

2.

3.

SECTION 2

IN TERMS OF THE SKILLS YOU HAVE AT PRESENT PLEASE RESPOND TO EACH OF THE FOLLOWING STATEMENTS.

(THE BOX WHICH MOST CLOSELY REFLECTS YOUR ASSESSMENT)

	STRONGLY AGREE		UNCERTAIN		STRONGLY DISAGREE
- I have the skills to implement application packages	☐	☐	☐	☐	☐
- I have no difficulty in selling my ideas to other people (e.g. users)	☐	☐	☐	☐	☐
- I am unable to identify telecommunication requirements for a specific system	☐	☐	☐	☐	☐
- When necessary, I ensure that a new system is not just the computerization of existing procedures	☐	☐	☐	☐	☐
- I have the skills to cost-justify a new system prior to it being developed	☐	☐	☐	☐	☐
- I lack the skills needed to schedule a project accurately	☐	☐	☐	☐	☐
- I am unable to identify user organizational structures appropriate to newly developed computer-based systems	☐	☐	☐	☐	☐
- Currently I am not capable of controlling project development	☐	☐	☐	☐	☐
- My verbal communication skills enable me to impart ideas to others	☐	☐	☐	☐	☐
- I do not have the interpersonal skills to work effectively in and with a project team	☐	☐	☐	☐	☐
- When managing a project, I find it difficult to estimate time scales in systems development accurately	☐	☐	☐	☐	☐

STRONGLY
AGREE

UNCERTAIN

STRONGLY
DISAGREE

- I am unable to rank project tasks in the order in which they should be performed

- I am not naturally diplomatic

- I have difficulty in dealing with people
(e.g. users, colleagues)

- My interviewing skills enable me to gather reliable information

--	--	--	--	--

- I can write programs in ADA which could be used in a live environment

--	--	--	--	--

- I have the ability to solve problems associated with analysis

--	--	--	--	--

- I do not have the skills to form long-range plans which are directly linked to company objectives

--	--	--	--	--

- I lack the skills to conduct an accurate review of my subordinates' work

--	--	--	--	--

- I do not have the skills to design communication networks

--	--	--	--	--

- I have skills at using statistics in a commercial environment

--	--	--	--	--

- When managing a project, I find it difficult to estimate the costs of systems development accurately

--	--	--	--	--

- I have the skills to use automated methods to develop systems
(e.g. system generators)

--	--	--	--	--

- I am capable of identifying the development method which is appropriate for a particular system
(e.g. a traditional approach rather than prototyping)

--	--	--	--	--

- I am able to conduct an audit of a computer-based system

--	--	--	--	--

STRONGLY
AGREE

UNCERTAIN

STRONGLY
DISAGREE

- I do not have the skills to implement procedures associated with a new computer-based system

--	--	--	--	--
- I am able to identify the data required in a company's corporate database(s)

--	--	--	--	--
- I am able to evaluate the appropriateness of existing business procedures

--	--	--	--	--
- I can develop programs using one (or more) of the fourth generation languages

--	--	--	--	--
- I am able to build computer-based systems with the necessary checks, balances and procedures required for auditing purposes

--	--	--	--	--
- I need to develop more skills in project planning

--	--	--	--	--
- I am not sufficiently familiar with current hardware to design appropriate installation configurations

--	--	--	--	--
- I am competent at using structured systems analysis techniques

--	--	--	--	--
- I do not have the skills to implement new manual procedures in an office environment

--	--	--	--	--
- I have the ability to think logically

--	--	--	--	--
- I have the skills to design logical models of the data required by a company

--	--	--	--	--
- I find it difficult to make decisions on matters affecting my work

--	--	--	--	--
- I do not have well-developed skills to supervise/motivate others

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STRONGLY
AGREE

UNCERTAIN

STRONGLY
DISAGREE

- I am good at writing reports/specifications
- I have the skills to gather data needed to define system requirements
- I do not have organization and methods (O and M) skills
- I am an effective teacher
- I have the skill to identify the functions performed within a user department
- I am able to develop systems using the technique of prototyping
- When managing a project, I find it difficult to monitor its progress accurately
- I have the necessary skills to identify appropriate system security
- For a specific system, I am able to identify users' information requirements
- I can write programs in FORTRAN which could be used in a live environment
- I am able to recognize when technology can be used to improve the company's competitive position
- The extent of my experience in the business sector enables me to be effective as a systems analyst
- I need more skill at analyzing the critical path of systems development

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STRONGLY
AGREE

UNCERTAIN

STRONGLY
DISAGREE

- I can write programs in COBOL which could be used in a live environment
- I have the necessary skills to build appropriate controls into a new system
- I have the necessary skills to identify what the users/managers need from a proposed system
- I am capable of constructing the algorithms from which programs can be built
- My technique of preparing for oral presentations contributes to the success of my communication
- I am able to specify systems which improve the company's competitive position
- I am able to evaluate an application package in terms of a specific users' needs

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SECTION 3

CONSIDER THE DEVELOPMENT OF APPLICATION SOFTWARE IN THE FUTURE. IN YOUR OPINION, HOW IMPORTANT WILL EACH OF THE FOLLOWING TOOLS/METHODS BE IN YOUR ORGANIZATION?

(INDICATE WITH A IN THE APPROPRIATE BOX)

VERY
IMPORTANT

NOT
IMPORTANT

THE TRADITIONAL DEVELOPMENT LIFE CYCLE

Producing Business System Specifications

Prototyping user requirements

Programming in COBOL

Programming in PASCAL

Programming in BASIC

Programming in ADA

FOURTH GENERATION TECHNIQUES

Fourth Generation Languages

Prototyping whole systems

USER INVOLVEMENT

User representatives on project teams

End user development

Information centres

APPLICATION PACKAGES

Implementing application packages

Customizing application packages

VERY
IMPORTANT

NOT
IMPORTANT

DEVELOPMENT TOOLS

CAD (e.g. to document work-flows)

Program/system generators

Development work-station

DEVELOPMENT ENVIRONMENT

Strategic information systems planning

Centralized standards enforcement

Centralized project control

DEVELOPMENT CENTRES

Performance measurement

Quality assurance procedures

Evaluation of new methodologies/tools

OTHER DEVELOPMENT TOOLS/METHODS WHICH, IN
YOUR OPINION, WILL BE USED IN THE FUTURE

.....
.....
.....

SECTION 4

CONSIDER THE JOB RESPONSIBILITIES IN YOUR ORGANIZATION IN THE FUTURE. IN YOUR OPINION, HOW IMPORTANT WILL EACH OF THE FOLLOWING TASKS BE FOR FUTURE SYSTEMS ANALYSIS?

(INDICATE WITH A IN THE APPROPRIATE BOX)

NOT
IMPORTANT

VERY
IMPORTANT

ANALYSIS

Use formal analysis procedures (e.g. structured systems analysis)

Cost-analyze systems

Identify work-flows and procedures

Conduct feasibility studies

Formally document user needs

Produce detailed specifications

Understand system interdependencies

Problem solving

Use formal procedures to determine information requirements (e.g. information engineering)

DEVELOPMENT

Identify appropriate development methods

Design systems

Generate systems

Traditional programming (e.g. in COBOL)

Prototype systems

Build whole systems

Tune generated systems

Integrate new and existing systems

Revise development method standards

NOT
IMPORTANT

VERY
IMPORTANT

PROJECT MANAGEMENT

Plan systems development

Monitor systems development

Control systems development

Evaluate systems development

Report on systems development

Evaluate performance of systems
developers

Conduct post-implementation systems
evaluations

APPLICATION PACKAGES

Select packages

Implement packages

Customize packages

USER CONTACT

Work in the user department

Increase business skills

Become the user

Share responsibility for system
with user

Train users

Act as a consultant

TECHNOLOGY

Keep abreast with technology

--	--	--	--	--

NOT
IMPORTANT

VERY
IMPORTANT

OTHER JOB RESPONSIBILITIES WHICH,
IN YOUR OPINION, WILL BE REQUIRED IN
THE FUTURE

.....
.....
.....

SECTION 5

IN YOUR OPINION, TO WHAT EXTENT WILL YOUR ORGANIZATION REQUIRE EACH OF THE FOLLOWING SKILLS FROM SYSTEMS ANALYSTS IN THE FUTURE?

(INDICATE WITH A IN THE APPROPRIATE BOX)

NOT
REQUIRED

COULD BE
REQUIRED

DEFINITELY
REQUIRED

ANALYSIS

Evaluating existing procedures

Fact finding

Identifying user function

Problem solving

Thinking logically

Identifying user/management
needs

Acting as a change agent

Skills in business practices

Using structured analysis methods

--	--	--	--	--

Determining appropriate system
security

Determining appropriate system
controls

Cost-benefit analyzing

Identifying competitive advantages

Building competitive positions

PROJECT MANAGEMENT

Project planning

Project controlling

Scheduling

Progress monitoring

Estimating costs

NOT
REQUIRED

COULD BE
REQUIRED

DEFINITELY
REQUIRED

Estimating timescales

Critical-path analysis

DEVELOPMENT

Determining appropriate development methods

Constructing algorithms

COBOL programming

FORTRAN programming

ADA programming

Evaluating application packages

Implementing application packages

Using prototyping techniques

Using Fourth Generation Languages

Using automated systems development methods (e.g. system generators)

IMPLEMENTATION

Implementing new structures in user departments

Implementing system procedures

Implementing office procedures

Organization and methods skills

DATABASE

Determining corporate data requirements

Designing logical data models

Determining specific user's information requirements

NOT
REQUIRED

COULD BE
REQUIRED

DEFINITELY
REQUIRED

HARDWARE

Designing installation configurations

Designing computer networks

Determining telecommunication requirements

--	--	--	--	--	--

QUANTITATIVE METHODS

Statistics

--	--	--	--	--	--

INTER-PERSONAL RELATIONSHIPS

Working in and with a project team

Dealing with people

Being diplomatic

COMMUNICATIONS

Interviewing

Verbal communicating

Report writing

Presentation preparing

Teaching

Selling ideas

MANAGEMENT

Managing/motivating people

Task prioritizing

Strategic planning

Decision making

Reviewing performance

NOT COULD BE DEFINITELY
REQUIRED REQUIRED REQUIRED

AUDITING

Auditing computer systems

--	--	--	--	--

Building systems which can be audited

--	--	--	--	--

OTHER SKILLS WHICH, IN YOUR OPINION, WILL
BE REQUIRED IN THE FUTURE

.....
.....
.....

SECTION 6

6.1 HOW MANY OF THE SKILLS WHICH YOU REGARD AS RELEVANT TO THE SYSTEMS ANALYST OF THE FUTURE DO YOU FEEL YOU HAVE AT PRESENT (ONE BOX)

NONE

ABOUT HALF

PRACTICALLY
ALL

--	--	--	--	--

6.2 ANY COMMENTS ON HOW PREPARED YOU ARE AT PRESENT FOR THE FUTURE JOB OF SYSTEMS ANALYSIS?

SECTION 7

PLEASE PROVIDE THE FOLLOWING INFORMATION ABOUT YOURSELF.

7.1 ARE YOU MALE? ☐ FEMALE? ☐

7.2 AGE IN YEARS?

7.3 WHAT IS YOUR HIGHEST ACADEMIC QUALIFICATION?

(ONE BOX)

Matric or equivalent

National diploma or equivalent

Bachelors degree

Bachelors degree with honours

Masters degree

Doctorate

OTHER (PLEASE SPECIFY)

.....

.....

.....

7.4 FOR HOW MANY YEARS, IN TOTAL, HAVE YOU BEEN EMPLOYED IN THE COMPUTER INDUSTRY?

(ONE BOX)

UNDER 5	5	6	7	8	9	10	11	12	13	14	15	OVER 15

7.5

FOR HOW MANY YEARS HAVE YOU BEEN EMPLOYED IN YOUR PRESENT POSITION?
(ONE BOX).

UNDER 1	1	2	3	4	5	OVER 5

7.6

HOW MANY PEOPLE (~~EXCLUDING~~ BOTH OPERATORS AND DATA CAPTURE STAFF)
ARE INVOLVED IN APPLICATION SOFTWARE DEVELOPMENT IN YOUR COMPANY?
(ONE BOX).

10 OR LESS	11-50	51-90	91-130	OVER 130

7.7

IN WHICH REGION OF SOUTH AFRICA IS YOUR DEPARTMENT SITED?
(ONE BOX).

PW

OTHER TRANSVAAL AREAS

WESTERN CAPE

OFS

EASTERN CAPE

NATAL

OTHER

7.8

IN WHAT TYPE OF INDUSTRY IS YOUR COMPANY INVOLVED? (ONE BOX).

Finance, insurance, real estate

Retail trade

Services (hotels, amusement, garages etc)

Wholesale trade

Transportation, communications

Manufacturing

Construction

Mining

Agriculture, forestry, fishing

Government (public administration)

OTHER (PLEASE SPECIFY)

.....

THANK YOU VERY MUCH. YOUR INPUT TO THIS RESEARCH IS APPRECIATED.

SECTION 4

CONSIDER THE JOB RESPONSIBILITIES IN YOUR ORGANIZATION IN THE FUTURE. IN YOUR OPINION, HOW IMPORTANT WILL EACH OF THE FOLLOWING TASKS BE FOR FUTURE SYSTEMS ANALYSTS?

(INDICATE WITH A IN THE APPROPRIATE BOX)

NOT
IMPORTANT

VERY
IMPORTANT

ANALYSIS

MISSING

Use formal analysis procedures (e.g. structured systems analysis)

3	11	23	57	62
---	----	----	----	----

3

Cost-analyze systems

2	8	19	48	82
---	---	----	----	----

Identify work-flows and procedures

	6	17	73	63
--	---	----	----	----

Conduct feasibility studies

	5	19	65	70
--	---	----	----	----

Formally document user needs

2	11	25	44	77
---	----	----	----	----

Produce detailed specifications

12	18	32	38	59
----	----	----	----	----

Understand system interdependencies

2		7	44	106
---	--	---	----	-----

Problem solving

1	1	14	43	100
---	---	----	----	-----

Use formal procedures to determine information requirements (e.g. information engineering)

5	12	30	60	49
---	----	----	----	----

3

DEVELOPMENT

Identify appropriate development methods

1	7	17	60	73
---	---	----	----	----

1

Design systems

	3	11	52	92
--	---	----	----	----

1

Generate systems

1	8	34	55	61
---	---	----	----	----

Traditional programming (e.g. in COBOL)

24	33	53	28	20
----	----	----	----	----

1

Prototype systems

3	15	29	68	43
---	----	----	----	----

Build whole systems

1	10	32	63	53
---	----	----	----	----

1

Tune generated systems

3	11	38	55	49
---	----	----	----	----

3

Integrate new and existing systems

1	4	10	49	95
---	---	----	----	----

Revise development method standards

1	1	25	66	66
---	---	----	----	----

NOT
IMPORTANT

VERY
IMPORTANT

MISSING

PROJECT MANAGEMENT

Plan systems development

1	1	10	43	104
---	---	----	----	-----

Monitor systems development

1	2	9	55	92
---	---	---	----	----

Control systems development

1	2	14	44	98
---	---	----	----	----

Evaluate systems development

2	3	11	67	74
---	---	----	----	----

Report on systems development

1	3	27	57	71
---	---	----	----	----

Evaluate performance of systems developers

2	5	23	59	72
---	---	----	----	----

Conduct post-implementation systems evaluations

2	5	17	55	78
---	---	----	----	----

APPLICATION PACKAGES

Select packages

7	14	22	46	69
---	----	----	----	----

Implement packages

5	13	35	52	53
---	----	----	----	----

Customize packages

12	15	36	44	51
----	----	----	----	----

USER CONTACT

Work in the user department

8	8	19	46	78
---	---	----	----	----

Increase business skills

2	3	6	50	98
---	---	---	----	----

Become the user

31	32	43	34	17
----	----	----	----	----

Share responsibility for system with user

5	7	25	55	67
---	---	----	----	----

Train users

3	9	18	44	85
---	---	----	----	----

Act as a consultant

1	2	14	46	96
---	---	----	----	----

TECHNOLOGY

Keep abreast with technology

		6	38	115
--	--	---	----	-----

NOT
IMPORTANT

VERY
IMPORTANT

OTHER JOB RESPONSIBILITIES WHICH,
IN YOUR OPINION, WILL BE REQUIRED IN
THE FUTURE

SECTION 5

IN YOUR OPINION, TO WHAT EXTENT WILL YOUR ORGANIZATION REQUIRE EACH OF THE FOLLOWING SKILLS FROM SYSTEMS ANALYSTS IN THE FUTURE?

(INDICATE WITH A IN THE APPROPRIATE BOX)

NOT
REQUIRED

COULD BE
REQUIRED

DEFINITELY
REQUIRED

ANALYSIS

MISSING

Evaluating existing procedures

1	4	28	37	89
---	---	----	----	----

Fact finding

1	1	11	47	99
---	---	----	----	----

Identifying user function

	2	19	46	92
--	---	----	----	----

Problem solving

	-	8	40	111
--	---	---	----	-----

Thinking logically

		3	23	133
--	--	---	----	-----

Identifying user/management needs

	2	9	28	120
--	---	---	----	-----

Acting as a change agent

8	12	45	49	40
---	----	----	----	----

5

Skills in business practices

1	2	22	53	81
---	---	----	----	----

Using structured analysis methods

	5	30	57	66
--	---	----	----	----

1

Determining appropriate system security

	1	18	53	87
--	---	----	----	----

Determining appropriate system controls

	3	13	43	100
--	---	----	----	-----

Cost-benefit analyzing

3	4	25	48	79
---	---	----	----	----

Identifying competitive advantages

1	14	40	42	62
---	----	----	----	----

Building competitive positions

2	17	42	44	52
---	----	----	----	----

2

PROJECT MANAGEMENT

Project planning

	2	6	33	113
--	---	---	----	-----

Project controlling

	2	9	39	109
--	---	---	----	-----

Scheduling

		16	40	103
--	--	----	----	-----

Progress monitoring

	1	9	52	97
--	---	---	----	----

Estimating costs

2	4	15	42	96
---	---	----	----	----

NOT REQUIRED COULD BE REQUIRED DEFINITELY REQUIRED MISSING

Estimating timescales

Critical-path analysis

		14	53	92
1	8	42	53	55

DEVELOPMENT

Determining appropriate development methods

Constructing algorithms

COBOL programming

FORTRAN programming

ADA programming

Evaluating application packages

Implementing application packages

Using prototyping techniques

Using Fourth Generation Languages

Using automated systems development methods (e.g. system generators)

2	4	23	64	66
7	22	52	42	35
20	35	53	21	29
77	44	27	4	4
75	39	29	4	3
5	16	34	51	52
5	16	33	55	50
4	6	37	55	57
2		18	30	109
2	6	40	48	62

IMPLEMENTATION

Implementing new structures in user departments

Implementing system procedures

Implementing office procedures

Organization and methods skills

10	8	38	61	42
2	1	13	61	82
5	19	42	46	47
4	14	48	53	40

DATABASE

Determining corporate data requirements

Designing logical data models

Determining specific user's information requirements

	5	13	34	107
2	3	11	41	101
	2	12	22	123

NOT COULD BE DEFINITELY
REQUIRED REQUIRED REQUIRED

HARDWARE

Designing installation configurations

26	33	36	25	39
----	----	----	----	----

Designing computer networks

28	23	37	29	42
----	----	----	----	----

Determining telecommunication requirements

19	20	40	32	48
----	----	----	----	----

QUANTITATIVE METHODS

Statistics

10	21	62	48	18
----	----	----	----	----

INTER-PERSONAL RELATIONSHIPS

Working in and with a project team

	1	2	26	130
--	---	---	----	-----

Dealing with people

		1	15	143
--	--	---	----	-----

Being diplomatic

		11	24	124
--	--	----	----	-----

COMMUNICATIONS

Interviewing

	3	12	43	101
--	---	----	----	-----

Verbal communicating

		4	33	122
--	--	---	----	-----

Report writing

		11	59	89
--	--	----	----	----

Presentation preparing

		10	41	108
--	--	----	----	-----

Teaching

	5	20	54	80
--	---	----	----	----

Selling ideas

	1	6	56	96
--	---	---	----	----

MANAGEMENT

Managing/motivating people

	1	8	28	123
--	---	---	----	-----

Task prioritizing

		10	46	103
--	--	----	----	-----

Strategic planning

2	6	27	35	89
---	---	----	----	----

Decision making

	1	6	41	111
--	---	---	----	-----

Reviewing performance

	2	13	48	96
--	---	----	----	----

NOT COULD BE DEFINITELY
 REQUIRED REQUIRED REQUIRED

MISSING

AUDITING

Auditing computer systems

6	12	49	48	43
---	----	----	----	----

Building systems which can be
 audited

	2	20	35	101
--	---	----	----	-----

OTHER SKILLS WHICH, IN YOUR OPINION, WILL
 BE REQUIRED IN THE FUTURE

.....

KEY TO APPENDIX 'K'
AND APPENDIX 'L'

To simplify the presentation of the results of the statistical processing (descriptive statistics in Appendix 'K' and inter-item correlations in Appendix 'L'), the following codes were used to represent the variables in the questionnaire.

Questionnaire section 2

- Q1 I have the skills to implement application packages
- Q2 I have no difficulty in selling my ideas to other people (e.g. users)
- Q3 I am unable to identify telecommunication requirements for a specific system
- Q4 When necessary, I ensure that a new system is not just the computerization of existing procedures
- Q5 I have the skills to cost-justify a new system prior to it being developed
- Q6 I lack the skills needed to schedule a project accurately
- Q7 I am unable to identify user organizational structures appropriate to newly developed computer-based systems
- Q8 Currently I am not capable of controlling project development
- Q9 My verbal communication skills enable me to impart ideas to others
- Q10 I do not have the interpersonal skills to work effectively in and with a project team
- Q11 When managing a project, I find it difficult to estimate time scales in systems development accurately

- Q12 I am unable to rank project tasks in the order in which they should be performed
- Q13 I am not naturally diplomatic
- Q14 I have difficulty in dealing with people (e.g. users, colleagues)
- Q15 My interviewing skills enable me to gather reliable information
- Q16 I can write programs in ADA which could be used in a live environment
- Q17 I have the ability to solve problems associated with analysis
- Q18 I do not have the skills to form long-range plans which are directly linked to company objectives
- Q19 I lack the skills to conduct an accurate review of my subordinates' work
- Q20 I do not have the skills to design communication networks
- Q21 I have skills at using statistics in a commercial environment
- Q22 When managing a project, I find it difficult to estimate the costs of systems development accurately
- Q23 I have the skills to use automated methods to develop systems (e.g. system generators)
- Q24 I am capable of identifying the development method which is appropriate for a particular system (e.g. a traditional approach rather than prototyping)
- Q25 I am able to conduct an audit of a computer-based system
- Q26 I do not have the skills to implement procedures associated with a new computer-based system
- Q27 I am able to identify the data required in a company's corporate database(s)
- Q28 I am able to evaluate the appropriateness of existing business procedures
- Q29 I can develop programs using one (or more) of the fourth generation languages

- Q30 I am able to build computer-based systems with the necessary checks, balances and procedures required for auditing purposes
- Q31 I need to develop more skills in project planning
- Q32 I am not sufficiently familiar with current hardware to design appropriate installation configurations
- Q33 I am competent at using structured systems analysis techniques
- Q34 I do not have the skills to implement new manual procedures in an office environment
- Q35 I have the ability to think logically
- Q36 I have the skills to design logical models of the data required by a company
- Q37 I find it difficult to make decisions on matters affecting my work
- Q38 I do not have well-developed skills to supervise/motivate others
- Q39 I am good at writing reports/specifications
- Q40 I have the skills to gather data needed to define system requirements
- Q41 I do not have organization and methods (O and M) skills
- Q42 I am an effective teacher
- Q43 I have the skill to identify the functions performed within a user department
- Q44 I am able to develop systems using the technique of prototyping
- Q45 When managing a project, I find it difficult to monitor its progress accurately
- Q46 I have the necessary skills to identify appropriate system security
- Q47 For a specific system, I am able to identify users' information requirements
- Q48 I can write programs in FORTRAN which could be used in a live environment

- Q49 I am able to recognize when technology can be used to improve the company's competitive position
- Q50 The extent of my experience in the business sector enables me to be effective as a systems analyst
- Q51 I need more skill at analyzing the critical path of systems development
- Q52 I can write programs in COBOL which could be used in a live environment
- Q53 I have the necessary skills to build appropriate controls into a new system
- Q54 I have the necessary skills to identify what the users/managers need from a proposed system
- Q55 I am capable of constructing the algorithms from which programs can be built
- Q56 My technique of preparing for oral presentations contributes to the success of my communication
- Q57 I am able to specify systems which improve the company's competitive position
- Q58 I am able to evaluate an application package in terms of a specific users' needs

Questionnaire section 3

THE TRADITIONAL DEVELOPMENT LIFE CYCLE

- B1 Producing Business System Specifications
- B2 Prototyping user requirements
- B3 Programming in COBOL
- B4 Programming in PASCAL
- B5 Programming in BASIC
- B6 Programming in ADA

FOURTH GENERATION TECHNIQUES

- B7 Fourth Generation Languages
- B8 Prototyping whole systems

USER INVOLVEMENT

- B9 User representatives on project teams
- B10 End user development
- B11 Information centres

APPLICATION PACKAGES

- B12 Implementing application packages
- B13 Customizing application packages

DEVELOPMENT TOOLS

- B14 CAD (e.g. to document work-flows)
- B15 Program/system generators
- B16 Development work-station

DEVELOPMENT ENVIRONMENT

- B17 Strategic information systems planning
- B18 Centralized standards enforcement
- B19 Centralized project control

DEVELOPMENT CENTRES

- B20 Performance measurement
- B21 Quality assurance procedures
- B22 Evaluation of new methodologies/tools

Questionnaire section 4

ANALYSIS

- C1 Use formal analysis procedures (e.g. structured systems analysis)
- C2 Cost-analyse systems
- C3 Identify work-flows and procedures
- C4 Conduct feasibility studies
- C5 Formally document user needs
- C6 Produce detailed specifications
- C7 Understand system interdependencies
- C8 Problem solving
- C9 Use formal procedures to determine information requirements (e.g. information engineering)

DEVELOPMENT

- C10 Identify appropriate development methods
- C11 Design systems
- C12 Generate systems
- C13 Traditional programming (e.g. in COBOL)
- C14 Prototype systems
- C15 Build whole systems
- C16 Turn generated systems
- C17 Integrate new and existing systems
- C18 Revise development method standards

PROJECT MANAGEMENT

- C19 Plan systems development
- C20 Monitor systems development
- C21 Control systems development
- C22 Evaluate systems development
- C23 Report on systems development
- C24 Evaluate performance of systems developers
- C25 Conduct post-implementation systems evaluations

APPLICATION PACKAGES

- C26 Select packages
- C27 Implement packages
- C28 Customize packages

USER CONTACT

- C29 Work in the user department
- C30 Increase business skills
- C31 Become the user
- C32 Share responsibility for system with user
- C33 Train users
- C34 Act as a consultant

TECHNOLOGY

- C35 Keep abreast with technology

Questionnaire section 5

ANALYSIS

- V1 Evaluating existing procedures
- V2 Fact finding
- V3 Identifying user function
- V4 Problem solving
- V5 Thinking logically
- V6 Identifying user/management needs
- V7 Acting as a change agent
- V8 Skills in business practices
- V9 Using structured analysis methods
- V10 Determining appropriate system security
- V11 Determining appropriate system controls
- V12 Cost-benefit analyzing
- V13 Identifying competitive advantages
- V14 Building competitive positions

PROJECT MANAGEMENT

- V15 Project planning
- V16 Project controlling
- V17 Scheduling
- V18 Progress monitoring
- V19 Estimating costs
- V20 Estimating timescales
- V21 Critical-path analysis

DEVELOPMENT

- V22 Determining appropriate development methods
- V23 Constructing algorithms
- V24 COBOL programming
- V25 FORTRAN programming
- V26 ADA programming
- V27 Evaluating application packages
- V28 Implementing application packages
- V29 Using prototyping techniques
- V30 Using Fourth Generation Languages
- V31 Using automated systems development methods (e.g. system generators)

IMPLEMENTATION

- V32 Implementing new structures in user departments
- V33 Implementing system procedures
- V34 Implementing office procedures
- V35 Organization and methods skills

DATA BASE

- V36 Determining corporate data requirements
- V37 Designing logical data models
- V38 Determining specific user's information requirements

HARDWARE

- V39 Designing installation configurations
- V40 Designing computer networks
- V41 Determining telecommunication requirements

QUANTITATIVE METHODS

- V42 Statistics

INTER-PERSONAL RELATIONSHIPS

- V43 Working in and with a project team
- V44 Dealing with people
- V45 Being diplomatic

COMMUNICATIONS

- V46 Interviewing
- V47 Verbal communicating
- V48 Report writing
- V49 Presentation preparing
- V50 Teaching
- V51 Selling ideas

MANAGEMENT

- V52 Managing/motivating people
- V53 Task prioritizing
- V54 Strategic planning
- V55 Decision making
- V56 Reviewing performance

AUDITING

- V57 Auditing computer systems
- V58 Building systems which can be audited

DESCRIPTIVE STATISTICS
OF SECTIONS 4 AND 5
OF THE QUESTIONNAIRE

(Use Appendix 'J' as key to variables)

DIMENSION	N	QUANTILES			FREQUENCY TABLE (PERCENTAGES)				
		Q1	MEDIAN	Q3	1	2	3	4	5
C1	187	3	4	5	1,6	7,0	18,7	37,4	35,3
C2	190	4	4	5	1,1	5,3	14,7	32,1	46,8
C3	190	4	4	5	-	3,7	14,7	42,6	38,9
C4	190	4	4	5	1,1	3,7	13,7	41,6	40,0
C5	190	3	4	5	1,6	7,9	19,5	27,4	43,7
C6	190	3	4	5	7,4	13,7	22,6	24,2	32,1
C7	190	4	5	5	1,1	-	6,3	29,5	63,2
C8	190	4	5	5	0,5	0,5	8,9	31,3	58,9
C9	187	3	4	5	2,7	7,0	17,6	34,8	38,0
C10	190	4	4	5	0,5	5,3	10,0	39,5	44,7
C11	190	4	5	5	-	2,1	8,9	33,2	55,8
C12	190	3	4	5	1,1	4,7	22,6	36,3	35,3
C13	190	2	3	5	18,4	23,7	31,1	16,3	10,5
C14	190	3	4	5	1,6	8,9	18,4	41,5	30,5
C15	191	3	4	5	0,5	6,8	20,9	39,8	31,9
C16	188	3	4	5	3,2	8,3	25,0	33,0	30,3
C17	191	4	5	5	0,5	2,1	7,9	34,6	55,0
C18	191	4	4	5	1,0	2,1	16,8	39,8	40,3
C19	191	4	5	5	0,5	1,0	6,3	29,8	62,3
C20	191	4	5	5	0,5	2,1	6,8	34,6	56,0
C21	191	4	5	5	0,5	2,1	10,5	28,8	58,1
C22	189	4	4	5	1,1	2,1	10,6	41,8	44,4
C23	191	4	4	5	0,5	3,1	17,3	32,2	41,9
C24	191	4	4	5	2,1	2,6	15,7	37,2	42,4
C25	191	4	4	5	1,0	3,1	12,0	34,0	49,7
C26	190	3	4	5	4,2	8,4	16,3	28,9	42,1
C27	190	3	4	5	2,6	10,0	23,2	33,2	31,1
C28	158	3	4	5	7,6	9,5	22,8	27,8	32,3
C29	191	3	4	5	4,7	6,8	15,2	27,2	45,1
C30	191	4	5	5	1,6	1,6	3,7	31,4	61,8
C31	189	2	3	4	16,9	24,3	25,9	22,2	10,6
C32	191	3	4	5	2,6	4,2	18,8	34,0	40,3
C33	191	4	5	5	2,1	5,2	13,6	28,3	50,8
C34	191	4	5	5	1,6	1,0	11,5	28,3	57,6
C35	191	4	5	5	-	0,5	6,3	25,7	67,5
V1	191	4	5	5	-	-	18,8	26,2	55,0
V2	191	4	5	5	-	-	7,9	28,8	63,4
V3	191	4	5	5	-	-	15,2	28,8	56,0
V4	191	4	5	5	-	-	4,7	24,1	71,2
V5	191	5	5	5	-	-	-	16,8	83,2
V6	191	4	5	5	-	-	3,4	18,3	73,3
V7	191	3	4	5	-	14,1	25,1	29,8	30,9
V8	181	4	4	5	-	-	19,4	34,6	46,1
V9	190	3	4	5	-	3,7	21,6	37,4	37,4
V10	191	4	5	5	-	-	12,6	31,4	56,0
V11	191	4	5	5	-	-	11,5	27,2	61,3
V12	191	4	4	5	-	-	24,1	30,4	45,5
V13	191	3	4	5	-	9,9	27,2	26,7	36,1
V14	191	3	4	5	-	14,7	28,8	25,7	30,9

DIMENSION	N	QUANTILES			FREQUENCY TABLE (PERCENTAGES)				
		Q1	MEDIAN	Q3	1	2	3	4	5
V15	191	4	5	5	-	-	8,4	21,5	70,2
V16	191	4	5	5	-	-	11,0	25,1	63,9
V17	191	4	5	5	-	-	14,1	25,1	60,7
V18	191	4	5	5	-	-	9,4	32,5	58,1
V19	191	4	5	5	-	-	16,8	28,3	55,0
V20	191	4	5	5	-	-	11,5	33,5	55,0
V21	191	3	4	5	-	9,4	26,7	30,9	33,0
V22	191	4	4	5	-	-	18,8	41,4	39,8
V23	190	3	3	4	5,8	15,8	35,3	24,2	18,9
V24	190	2	3	4	16,8	20,0	32,6	14,2	16,3
V25	188	1	1	2	50,5	26,1	17,6	5,9	-
V26	191	1	2	2,5	49,7	25,4	19,9	5,0	-
V27	191	3	4	5	-	13,6	20,4	35,1	30,9
V28	191	3	4	5	-	12,0	23,6	33,5	30,9
V29	191	3	4	5	-	5,8	20,9	33,5	39,8
V30	191	4	5	5	-	-	13,1	19,9	67,0
V31	191	3	4	5	-	-	27,7	31,4	40,8
V32	191	3	4	4	6,3	6,3	27,7	35,6	24,1
V33	191	3	4	4	-	-	14,1	38,7	47,1
V34	191	3	4	5	-	13,6	31,9	28,3	27,2
V35	191	3	4	4	-	11,0	29,3	35,1	24,6
V36	191	4	5	5	-	-	15,2	23,0	60,7
V37	191	4	5	5	-	-	9,9	24,6	65,4
V38	191	4	5	5	-	-	10,5	15,7	37,8
V39	191	2	3	4	16,8	19,9	25,1	17,3	20,9
V40	191	2	3	4	18,3	15,7	25,1	17,3	23,6
V41	191	3	3	5	12,0	12,6	27,7	20,4	27,2
V42	191	3	3	4	-	21,5	38,7	27,7	12,0
V43	191	5	5	5	-	-	-	19,4	80,6
V44	191	5	5	5	-	-	-	11,5	88,5
V45	191	4	5	5	-	-	8,4	17,3	74,3
V46	191	4	5	6	-	-	9,9	25,1	64,9
V47	191	5	5	5	-	-	-	21,5	78,5
V48	191	4	5	5	-	-	6,3	35,1	58,6
V49	191	4	5	5	-	-	-	30,9	69,1
V50	191	4	5	5	-	-	16,8	31,9	51,3
V51	191	4	5	5	-	-	7,9	36,1	56,0
V52	191	5	5	5	-	-	-	24,1	75,9
V53	191	4	5	5	-	-	6,8	32,5	60,7
V54	191	4	4	5	-	-	24,1	26,2	49,7
V55	191	4	5	5	-	-	6,8	29,8	63,4
V56	191	4	5	5	-	-	11,5	31,9	56,5
V57	191	3	4	5	-	13,1	31,9	29,3	25,7
V58	158	4	5	5	-	1,3	12,7	22,2	63,9

INTER-ITEM CORRELATIONS OF
ALL THE DIMENSIONS IN
SECTIONS 2, 3, 4 AND 5 OF
THE QUESTIONNAIRE

(Use Appendix 'J' as key to variables)

SAS

OBS _TYPE_ _NAME_

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
1 MEAN	4.00629	4.53165	4.44872	4.69182	4.86164	4.60759	4.57233	4.07595	4.21384	4.21519	4.58228	3.72956
2 STD	0.91746	0.58286	0.59345	0.53983	0.44263	0.52707	0.71564	1.0439	0.93703	0.82432	0.66019	1.10056
3 N	159	159	156	159	159	158	159	158	159	159	158	159
4 CORR	0.31010	0.31010	0.38973	0.27298	0.39562	0.31420	0.20030	0.34271	0.20608	0.13168	0.21936	0.23725
5 CORR	0.38973	0.39562	0.47688	0.39562	0.22253	0.45209	0.35383	0.37586	0.21394	0.40097	0.43057	0.24048
6 CORR	0.27298	0.39562	0.47688	0.39562	0.22253	0.45209	0.35383	0.37586	0.21394	0.40097	0.43057	0.24048
7 CORR	0.22253	0.22253	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617
8 CORR	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617	0.32617

	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
1	3.91139	4.05696	2.40881	4.16078	3.89937	3.91772	3.15723	3.51572	3.11392	3.92453	4.03797	4.33544	1.91139	1.69595
2	0.96687	0.97212	1.28871	1.02178	1.13179	1.02183	1.19681	1.211	1.21023	0.94498	1.19918	1.24977	1.47756	1.15858
3	159	159	159	159	159	159	159	159	159	159	159	159	159	159
4	0.33984	0.30834	0.18022	0.17478	0.14432	0.08119	0.26038	0.17292	0.16017	0.23904	0.11081	-0.05635	-0.05635	-0.05635
5	0.25602	0.38633	0.20424	0.26774	0.23626	0.17547	0.23610	0.27891	0.21154	0.23989	0.10169	0.11287	3.1E-04	0.06576
6	0.30043	0.59820	0.19735	0.13324	0.17753	0.14616	0.23598	0.18306	0.19024	0.19124	-0.05844	-0.04263	1.6E-04	-0.02084
7	0.29082	0.62934	0.17638	0.23138	0.17087	0.21387	0.21018	0.20041	0.14593	0.28021	0.15456	0.14086	-0.05056	-0.03422
8	0.15734	0.17363	0.02847	0.05633	0.03949	0.14451	0.10587	0.11251	0.07735	0.08118	0.18171	0.25527	0.10023	0.08639

	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
1	4.21519	4.19745	3.71338	3.86792	3.04403	4.03145	4.39873	3.84906	2.94304	4.1761	4.35849	4.56329	2.75472	2.52532
2	0.90534	1.05271	0.95416	1.39217	1.32333	1.00896	0.85912	1.17025	1.29302	0.97782	0.82126	0.59151	1.13957	1.40834
3	159	157	157	159	159	159	159	159	159	159	159	159	159	159
4	0.21083	0.10671	0.24908	0.18666	0.05534	0.43323	0.27374	0.26885	0.31068	0.38105	0.21367	0.38157	0.04274	0.08953
5	0.33320	0.18575	0.22087	0.01287	0.11156	0.28781	0.38256	0.18592	0.57895	0.31593	0.29330	0.53191	0.10757	0.09708
6	0.23019	0.62948	0.24248	0.16489	0.09579	0.30768	0.38969	0.40256	0.11254	0.32195	0.56126	0.43945	0.25782	-0.03709
7	0.25047	0.23012	0.19465	0.09256	0.14976	0.26636	0.27032	0.06441	0.12190	0.30738	0.25346	0.46731	0.12868	-0.07045
8	0.13974	0.07555	0.16704	0.16535	0.09807	0.34250	0.09790	0.18994	-0.04908	0.07388	0.28170	0.31050	0.09627	-0.02800

	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
1	3.42138	3.08176	4.54088	4.51572	4.05031	4.12579	4.50314	4.23152	3.74684	4.06962	4.15723	4.03145	4.49686	3.44654
2	1.20973	1.277	0.93382	0.75318	1.1627	0.97267	0.63519	0.93497	0.98353	0.80695	0.77569	1.08745	0.88496	1.19941
3	159	159	159	159	159	159	159	159	159	159	159	159	159	159
4	0.02168	0.29084	0.07377	0.11349	0.14355	0.27248	0.19278	0.10581	0.12721	0.17130	0.13406	0.15477	0.06492	0.37312
5	0.75274	0.19297	0.12727	0.10258	0.13249	0.40708	0.26716	0.33034	0.26656	0.22337	0.23332	0.26627	0.23647	0.29761
6	0.02172	0.26193	0.11091	0.14354	0.13548	0.36731	0.25923	0.33758	0.33758	0.25923	0.33123	0.30575	0.19311	0.39545
7	0.04802	0.19621	0.13504	0.09739	0.25887	0.25887	0.33049	0.64667	0.64667	0.33049	0.64667	0.15861	0.19861	0.25427
8	0.03530	0.07788	0.07725	0.01779	0.07584	0.16015	0.13682	0.1432	0.10517	0.15187	0.06036	0.10219	0.12309	0.12399

	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70
1	4.54088	4.1761	3.31447	4.38365	4.60256	4.0641	3.37013	1.74497	2.16107	1.83571	4.69872	3.95455	4.78344	4.09554		
2	0.70927	1.0283	1.18074	0.65534	0.72447	1.09356	1.30335	1.00777	1.2361	1.14182	0.63624	1.0927	0.63365	0.99861		
3	159	159	159	159	159	156	156	154	149	147	156	154	157	157		
4	0.22522	0.23366	0.30836	0.23474	0.07793	0.14396	-0.13154	-0.08586	0.15474	0.05444	0.03506	0.05656	0.144304	0.08109		
5	0.39373	0.28293	0.22737	0.37518	0.15816	-0.12273	-0.14175	-0.07966	0.340581	0.062792	0.20048	-0.02067	0.08215	0.13897		
6	0.31950	0.21293	0.28037	0.20154	0.12268	0.09509	-0.17281	-0.14462	-0.08505	-0.00228	0.79995	0.02549	0.11746	0.23187		
7	0.23115	0.28263	0.30528	0.31044	0.09628	0.12294	0.04765	-0.07655	-0.14462	-0.02248	0.83237	-0.02644	-0.17071	0.02298		
8	0.20312	0.11531	0.01959	0.18480	0.15144	-0.13115	0.23072	-0.01547	0.071052	0.11955	0.20949	0.10354	-0.14635	-0.07269		

SAS

OBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
1	4.28025	3.88462	3.80128	3.42208	4.12418	4.11842	4.60339	4.27309	3.98089	4.25478	4.50955	4.35669	3.97861	4.18421
2	4.09599	1.18028	1.32187	0.96190	0.92733	0.69938	0.69938	0.93788	1.07698	0.80785	0.56619	0.80870	0.98350	0.94435
3	4.08243	0.32457	0.02551	0.62737	0.11334	0.07085	0.17587	0.01541	0.10279	0.14084	0.08533	0.15919	0.06528	0.06030
4	0.10374	-0.01391	-0.09456	0.05152	0.07759	0.08755	0.16641	0.02474	0.05153	0.02019	0.07732	-0.07875	0.03061	-0.06030
5	0.12463	0.11183	0.13551	0.11855	0.16492	0.27820	0.17671	0.10373	0.15681	0.15968	0.09833	0.12045	0.12045	0.03203
6	0.07019	-0.04365	-0.11021	-0.10466	0.20949	0.31376	0.11909	-0.02668	-0.09553	-0.07057	-0.06611	0.07351	-0.04651	-0.16489
7	0.46751	-0.76209	-0.06902	0.55607	0.59001	0.12419	0.10433	0.04523	0.55976	0.10756	0.18971	0.08143	0.06499	0.10188

OBS

OBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
1	4.16842	4.15789	4.03684	3.6	4.53684	4.47368	3.98396	4.25632	4.49632	4.27682	3.89474	3.95812	3.78723	3.78723
2	0.61198	0.87063	1.00488	1.26742	0.70987	0.72502	0.13942	0.87051	0.74362	1.22373	0.97175	0.92245	1.06848	1.06848
3	0.11786	-0.02687	-0.16009	0.35937	0.32160	0.51481	0.13942	0.03923	0.02472	0.05908	0.14861	0.02363	0.10477	0.10477
4	0.03209	0.03133	0.02783	-0.06431	0.05918	0.05784	0.12519	0.11901	0.04950	0.08958	0.11817	0.02379	0.00822	0.00822
5	0.16374	0.06304	0.02316	-0.16725	0.09208	0.12383	0.02670	0.13376	0.05925	0.07947	0.26675	0.25982	0.11503	0.09748
6	0.04072	0.02872	0.19402	-0.05857	0.02762	0.05402	0.10258	0.13593	0.07956	0.04818	0.24609	0.07546	0.06130	0.06130
7	0.13737	0.20412	0.05356	0.04559	0.16992	0.19978	0.16840	0.19220	0.16092	0.09387	0.07507	0.04361	0.14138	0.14138

OBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
1	4.11361	4.1623	4.52356	4.43455	4.41885	4.26455	4.15783	4.28272	3.96316	3.8	3.67722	4.03141	4.50262	4.50262
2	0.76884	0.85214	0.70949	0.75718	0.80292	0.81468	0.86035	0.92538	1.14259	1.07003	1.23262	1.34665	0.78051	0.78051
3	0.10079	0.15201	0.09540	0.15821	0.12671	0.13358	0.12134	0.11002	0.11517	0.08463	0.158	0.158	0.191	0.191
4	0.00434	0.10123	0.08616	0.10514	0.08428	0.09352	0.10216	0.10476	0.10237	0.05856	0.02472	0.03552	0.10901	0.10901
5	0.00453	0.15134	0.07906	0.13045	0.13757	0.11700	0.11368	0.09634	0.10493	0.04256	0.39221	-0.03641	0.10674	0.10674
6	0.00458	0.18102	0.11037	0.09379	0.13474	0.07495	0.07678	0.07346	0.03424	0.03195	-0.10829	-0.05447	0.16913	0.16913
7	0.21497	0.14761	0.11432	0.08469	0.19326	0.08328	0.07631	0.10367	0.11336	0.00973	0.07519	0.12611	0.02694	0.02694

OBS

OBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
1	4.42932	4.48168	4.1623	3.88482	3.73545	4.60733	4.51032	4.46597	4.48168	4.34031	4.43455	3.86911	4.16794	3.34737
2	0.72109	0.73825	0.92897	1.02461	1.06883	0.67103	0.71703	0.73100	0.67934	0.86718	0.69188	0.99400	0.84159	1.12939
3	0.191	0.191	0.191	0.191	0.189	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191
4	0.08425	0.18420	0.07210	0.12262	0.06728	0.07030	0.09697	0.07951	0.03491	0.08963	0.02693	0.12718	0.04617	0.05262
5	0.02828	0.04901	0.06521	0.04367	0.09729	0.16307	0.13201	0.04159	0.03619	0.08103	0.09537	0.12228	0.07738	0.03764
6	0.02866	0.10094	0.11465	0.11873	0.11338	0.14934	0.15016	0.05910	0.10518	0.17134	0.20071	0.07229	0.05513	0.03661
7	0.05934	0.1285	-0.03517	-0.04098	-0.06243	0.13873	0.13438	0.07143	0.05809	0.07167	0.14327	-0.09612	0.13081	0.03833
8	0.09257	0.18207	0.06227	0.07022	0.06306	0.19996	0.23327	0.13035	0.17606	0.13184	0.23857	0.07617	0.09552	0.11909

SAS

Q05	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
1	2.23158	1.80851	1.81768	3.81579	3.80628	4.05236	4.51832	4.08421	3.64921	4.30366	3.66492	3.71204	4.81255	4.52632
2	1.29327	0.99424	0.974632	1.07041	1.06986	0.971912	0.787019	0.927683	1.10381	0.789362	1.07252	1.00305	0.822359	0.781291
3	1.190	188	181	190	191	191	191	190	191	191	191	191	191	190
4	0.05818	-0.22003	-0.0465	-0.047088	-0.01397	0.0993214	-0.005172	0.0352965	0.174285	0.118838	0.201539	0.196367	0.675049	0.080128
5	0.175826	0.080558	0.188839	0.0592342	0.0740667	0.061625	-0.006737	0.105092	0.102354	0.175105	0.13214	0.168511	0.651749	-0.006269
6	-0.159404	-0.102525	-0.094182	0.0645234	0.0720236	0.14995	-0.00293	0.041772	0.239074	0.208068	0.237711	0.190028	0.160416	0.143096
7	0.130596	-0.02881	-0.029632	-0.016371	4.3E-04	0.0337915	-0.046116	-0.125954	-0.012188	0.101489	0.0136987	-0.015999	0.0174823	-0.080898
8	0.162098	0.08821	0.082626	-0.054653	C	0.0257594	0.183947	0.113212	-0.016616	0.0792173	0.0275005	0.0084717	0.143652	0.154735

Q05

Q05	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
1	4.62304	3.05759	3.12042	3.3822	3.25131	4.78534	4.87958	4.65959	4.53403	4.7644	4.52356	4.63874	4.31937	4.47644
2	0.699092	1.37317	1.41464	1.32804	1.83603	0.471275	0.342055	0.627776	0.176456	0.472384	0.614063	0.580713	0.812787	0.655519
3	191	191	191	191	191	191	191	191	191	191	191	191	191	191
4	0.0333528	0.771788	0.615124	0.0369126	0.055997	0.107462	0.116353	0.168049	0.0255913	0.142558	0.075212	0.113128	0.0418177	0.140866
5	0.228978	0.118593	0.0180541	0.072813	0.0272025	0.191722	0.156394	0.150598	0.214215	0.1359	0.0738513	0.175226	0.125119	0.0967097
6	0.0736012	0.0530356	0.0278164	0.0834284	0.0474134	0.0902280	0.139252	0.0683405	0.274932	0.177624	0.110419	0.216839	0.209047	0.178283
7	0.144244	0.0376121	0.0465776	0.0702866	0.0970522	0.118033	0.193684	0.101671	0.153178	0.209224	0.119522	0.170811	0.142494	0.130933

Q05

Q05	V52	V53	V54	V55	V56	V57	V58
1	4.70681	4.53927	4.20419	4.56021	4.43979	3.65263	4.48734
2	0.569308	0.621778	0.937625	0.536541	0.72205	1.06178	0.763309
3	191	191	191	191	191	190	158
4	0.0560326	0.0743467	0.0742784	0.199282	0.157051	0.067976	0.118504
5	0.190482	0.131502	0.0734135	0.177952	0.0730628	-0.017753	0.110557
6	0.0849794	0.079792	0.123183	0.13445	0.161179	-2.6E-04	0.164239
7	0.115551	0.0277027	0.0168309	0.0461395	0.0050941	0.0050941	0.240747
8	0.119981	0.09721	0.0806883	0.10052	0.134803	0.134062	0.205566

OUS_	TYPE_	NAME_	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
9	CORR	Q6	0.314208	0.452069	0.293078	0.292368	0.201139	1	0.208299	0.292636	0.183688	0.311144	0.517764	0.225413
10	CORR	Q7	0.200301	0.335831	0.327243	0.268732	0.199353	0.208299	0.292636	0.234813	0.139866	0.35571	0.245568	0.272259
11	CORR	Q8	0.340271	0.335831	0.327243	0.268732	0.199353	0.208299	0.292636	0.234813	0.139866	0.35571	0.245568	0.272259
12	CORR	Q9	0.206042	0.213994	0.143131	0.125941	0.124126	0.183688	0.311144	0.35571	0.101884	0.295385	0.192127	0.123393
13	CORR	Q10	0.131683	0.400957	0.223155	0.295097	0.204152	0.311144	0.35571	0.295385	0.101884	0.195403	0.139540	0.2614
14	CORR	Q11	0.219356	0.430579	0.260937	0.297184	0.19989	0.517764	0.245568	0.323599	0.192127	0.395403	0.1	0.196159
15	CORR	Q12	0.236725	0.240148	0.204426	0.272122	0.0688410	0.225113	0.272259	0.197364	0.123393	0.2614	0.196159	1
16	CORR	Q13	0.339404	0.256012	0.300043	0.290421	0.157343	0.296692	0.271516	0.28624	0.0972232	0.241693	0.218416	0.161749
9	0.296692	0.339593	0.120792	0.216694	0.16598	0.198857	0.216405	0.143933	0.14379	0.203712	0.109663	0.277916	-0.075178	0.072956
10	0.271516	0.330584	0.281763	0.375082	0.188937	0.253171	0.255863	0.235354	0.188365	0.230477	0.098469	0.051608	-1.13981	0.133774
11	0.28624	0.405075	0.101214	0.219464	0.143576	0.057052	0.166244	0.174339	0.174339	0.240284	0.020562	-0.24281	-0.071745	0.147434
12	0.0972232	0.214223	0.141224	0.330808	0.237579	0.17346	0.113544	0.094146	0.239449	0.32432	0.27133	0.230492	0.0486647	0.212448
13	0.210416	0.295842	0.227171	0.280476	0.19719	0.202316	0.380231	0.288303	0.247473	0.325273	0.257462	0.079566	0.0241434	0.147621
14	0.163587	0.217367	0.177743	0.177743	0.180223	0.210261	0.185105	0.159696	0.159696	0.202714	0.127582	0.226420	0.0035188	0.226478
15	0.161749	0.300158	0.383412	0.297539	0.338371	0.266884	0.381688	0.272836	0.252095	0.241857	0.072583	-0.211837	-0.068081	0.054072
16	0.509736	0.220913	0.192405	0.109115	0.0690802	0.201374	0.182169	0.160293	0.183508	0.0731766	-0.893501	-0.039026	0.103115	0.103115
9	0.223472	0.174431	0.345523	0.005566	0.0510636	0.221428	0.246365	0.119264	0.0343112	0.211767	0.251435	0.487788	0.109754	0.101681
10	0.10749	0.105592	0.851589	0.232505	0.0622871	0.252562	0.335614	0.064435	-9.1E-04	0.241878	0.0571903	0.308052	0.0900790	0.1020202
11	0.2909	0.137384	0.202647	0.0226691	0.0748999	0.243043	0.22585	0.232452	0.141193	0.179968	0.325347	0.213206	0.9333701	0.213206
12	0.0209801	0.10778	0.26962	0.175747	0.135265	0.153972	0.210844	0.0883469	0.302452	0.153221	0.266457	0.266192	0.8483533	0.0517062
13	0.248197	0.279144	0.244176	0.17769	0.190365	0.167232	0.294255	0.113579	0.074362	0.255513	0.263894	0.430369	0.259882	0.177332
14	0.163587	0.217367	0.177743	0.177743	0.180223	0.210261	0.185105	0.159696	0.159696	0.202714	0.127582	0.226420	0.0035188	0.226478
15	0.266736	0.170378	0.177743	0.177743	0.180223	0.210261	0.185105	0.159696	0.159696	0.202714	0.127582	0.226420	0.0035188	0.226478
16	0.31608	0.20945	0.190572	0.0536727	0.156734	0.222612	0.222612	0.257353	0.173333	0.163181	0.232599	0.162773	0.14189	0.14189
9	0.0266293	0.157321	0.0670601	0.129396	0.173949	0.288195	0.280825	0.213742	0.16225	0.213942	0.25121	0.199624	0.205409	0.217537
10	0.132408	0.116830	0.192393	0.174655	0.0962123	0.31226	0.100018	0.085697	0.193314	0.0618297	0.150607	0.128444	0.151854	0.2475773
11	0.10831	0.220441	0.206405	0.102381	0.062293	0.31877	0.177298	0.126215	0.126215	0.0786039	0.118661	0.128444	0.141191	0.2174924
12	0.25968	0.046693	0.777133	0.0633115	0.0057899	0.03574	0.23565	0.045696	0.035612	0.0932124	0.0559944	0.232544	0.277497	0.17127
13	0.193126	0.23361	0.166991	0.165795	0.0424526	0.211344	0.0891961	0.23369	0.119251	0.118673	0.095606	0.228959	0.25876	0.287078
14	0.128105	0.200319	0.095879	0.150034	0.178578	0.357806	0.118593	0.273238	0.168973	0.168973	0.21236	0.158492	0.168005	0.222474
15	0.163116	0.189918	0.078403	0.080567	0.084708	0.102395	0.223306	0.195578	0.237325	0.0815999	0.158163	0.168499	0.187578	0.307601
16	0.131235	0.185549	0.120827	0.0851371	0.108516	0.249499	0.2635903	0.154708	0.116081	0.0754824	0.135949	0.119906	0.119906	0.399607
9	0.266853	0.263549	0.150127	0.372782	0.139292	0.0548226	0.0326826	0.014076	0.0737784	0.0480213	0.0644853	-0.829929	-0.048629	0.0288333
10	0.210521	0.263716	0.227827	0.286608	0.0097855	0.0699543	0.0763226	0.0107249	0.0107249	0.0435066	0.1303	0.0460933	0.0626217	0.0032685
11	0.334922	0.131127	0.246898	0.433674	0.101174	0.333691	-0.033612	-0.021426	-0.033083	0.0950566	0.143984	0.063187	0.022782	0.0196793
12	0.154514	0.273703	0.111474	0.230872	0.121895	0.3355961	-0.024767	-0.011792	0.103029	-0.063281	0.159621	0.034091	0.0623991	0.016476
13	0.230569	0.25121	0.207953	0.357334	0.0405995	0.002962	0.152511	-0.091171	-0.079079	-0.00603	0.3325626	-0.080306	0.0736754	-0.13219
14	0.32771	0.145605	0.17734	0.52498	0.225931	0.0791506	0.0431495	-0.134452	-0.083422	0.130004	0.11619	-0.24198	-0.019553	0.041003
15	0.196464	0.246407	0.272278	0.092478	0.251719	0.048644	0.023433	0.051394	-0.065332	0.130004	-0.12744	-0.031916	-0.084815	-0.062085
16	0.208186	0.183548	0.301813	0.257457	-0.006329	0.0891092	-0.143957	-0.0586968	0.0495082	0.12508	0.139921	0.0369962	0.118496	0.038539

QBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
9	0.129648	0.070822	0.052347	-0.17247	0.134408	0.0403527	0.0988222	0.133451	0.0611234	0.105163	0.0840944	0.727576	0.923585	-0.030605
10	0.086757	0.131599	-0.18111	0.099519	0.203478	0.149173	0.18491	0.183171	0.0811454	0.081092	0.122925	0.1819598	0.108674	0.153851
11	0.078977	0.150508	-0.070436	0.030385	0.067309	0.093583	0.102305	0.059072	0.0584533	0.114078	0.120953	-0.007886	0.0259122	0.0666197
12	0.101083	0.101879	-0.060277	0.034983	-0.01311	0.0567349	0.0970522	0.0665813	0.0534292	0.107075	0.132253	0.0503723	0.125146	0.1017261
13	0.110296	-0.022377	-0.11777	0.001487	-0.100619	0.103289	0.0204069	0.0608835	-0.03273	0.0610221	0.117539	-0.020932	0.1202036	0.101812
14	0.193173	-0.001046	-0.13192	-0.076104	0.19535	0.152059	0.103264	0.0608835	0.108338	0.0918465	0.112222	0.0146746	0.0335871	0.050982
15	0.044263	0.046037	-0.029282	-0.0275	-0.027975	0.107788	0.103898	0.0279226	0.0049996	-0.0281686	-0.041838	0.0678965	0.0655224	0.101059
16	0.123495	5.9E-04	-0.07321	0.0313643	0.156582	0.0247503	0.227545	0.0859861	0.177596	-0.0320405	0.0308653	0.145817	0.125313	0.004328
QBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
9	0.0309533	0.0279059	0.0491385	0.0344533	0.083278	0.0528873	0.144989	0.108883	0.105498	0.0927276	-0.071105	0.154452	0.0836375	-0.056132
10	0.0920137	0.258692	0.120889	0.0211895	0.203761	0.169182	0.180502	0.234597	0.053203	0.125656	-0.02578	0.152836	0.107211	-0.09429
11	0.130775	0.0760278	0.055097	0.061493	-0.002111	0.070668	0.134052	-0.004236	-0.058293	-3.5E-04	-0.07836	0.128311	-0.019835	-0.009745
12	-0.062942	0.0383553	0.033273	0.048434	0.033293	0.019639	0.085146	0.110511	0.155125	-0.0031	-0.051199	-0.027288	-0.0261834	-0.059616
13	0.0496211	0.20981	0.085662	-0.031254	0.104501	0.0306699	0.175332	0.174861	0.019167	0.318956	0.135928	0.0911708	0.0258028	-0.027785
14	0.156138	0.027035	0.020495	-0.023111	0.160815	0.103267	0.248985	0.0526681	0.0626944	0.125601	0.0691144	0.181911	0.168525	0.158156
15	-0.06648	0.101232	0.060345	0.133566	0.0157396	0.0031828	0.0806277	0.021877	0.03196	-0.0247097	-0.06149	0.090702	-0.061883	0.112249
16	0.0622473	0.0534189	-0.108614	-0.03953	0.0439445	-0.066659	0.218305	0.129596	0.0571866	0.090739	-0.126316	0.163062	0.0526318	-0.146985
QBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
9	-0.015169	0.152492	0.0571687	0.192618	0.208525	0.128434	0.151946	0.0462083	0.092693	0.0525936	0.0656457	0.0398474	0.0909913	0.142214
10	-0.019708	0.189152	0.166827	0.270156	0.129743	0.135989	0.161086	0.0869416	0.128138	0.0263518	0.08413	-0.033259	0.0778071	0.0866783
11	0.032709	0.136675	0.0631355	0.047913	0.071595	0.0423888	0.0243509	0.0404559	-0.021288	0.0751276	0.0497546	-0.046838	0.113725	0.153805
12	0.038016	0.071114	0.105409	0.118866	0.109868	0.0243509	0.103132	0.0778381	-0.178591	0.0521493	0.121033	-0.028828	0.0825817	0.0528526
13	-0.130663	0.104329	0.200077	0.18819	0.190561	0.170515	0.114957	0.167607	0.0760621	0.0650154	0.015593	0.071289	-0.042766	0.110199
14	0.0761243	0.167162	0.16438	0.28649	0.263507	0.166192	0.163194	0.15861	0.175897	0.0759665	0.072567	0.0430405	2.8E-04	0.0185105
15	-0.113209	0.0921007	0.0394078	0.057046	0.004657	0.0076158	0.0733641	0.0363884	0.0249486	0.063631	0.0917771	-0.002155	-0.044798	0.051769
16	-0.126155	0.176362	0.128986	0.152202	0.0923192	0.14734	0.103328	0.04477	0.0815478	0.150187	0.0931972	0.0047428	0.209745	0.143137
QBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
9	0.018857	-0.080368	0.0707917	-0.00422	0.0969095	0.0279225	0.115402	0.120718	-0.053612	0.0404012	0.062608	0.0161451	-0.02352	0.0658712
10	-0.140513	-0.017682	0.0267056	0.055847	0.0583674	0.0146108	0.162438	0.0679063	0.0227618	-0.0567414	0.0747134	0.0887354	0.138706	0.0054451
11	-0.091321	-0.154995	0.003824	0.002373	0.0722665	0.0423133	0.14006	0.110231	0.0718217	0.0425917	0.0359955	0.0662445	0.221323	0.011933
12	-0.171083	0.0668855	0.048258	0.205042	-0.025042	-0.11737	-0.083054	0.0351175	0.0819283	0.186057	0.0889905	-0.093435	-0.028679	0.240501
13	-0.05683	0.0434963	0.027079	0.100777	0.124448	0.0627716	0.0652169	0.0737891	0.073687	0.0288827	0.019581	0.0446903	0.197274	0.0693997
14	-0.140538	-0.013595	0.0634665	0.126298	0.129365	0.003575	0.021284	0.123493	0.113493	0.0700289	0.0700348	0.11182	0.034384	0.0931777
15	-0.094174	0.042358	0.10401	-0.081563	0.0103962	-0.11764	0.0129005	0.0253204	0.0582897	0.081081	0.152225	0.106459	-0.0434	0.0325188
16	0.0024694	0.0229755	-0.022078	0.0226769	0.0597548	0.0442011	-0.015012	0.0388958	-0.032526	-0.053386	0.105203	0.103303	0.20555	0.118955
QBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
9	0.078556	0.0722667	-0.051609	-0.01921	-0.025544	0.118815	0.252723	0.120489	0.040707	0.080688	-0.00078	-0.037608	0	0.133424
10	0.089975	0.110281	0.163923	0.154003	0.146251	0.258811	0.265303	0.096564	0.11512	0.113685	0.127995	-0.028367	0.217685	0.011004
11	-0.004444	0.181428	0.121191	0.181558	0.157882	0.058199	0.11397	0.0847344	0.060028	0.185947	0.03811	0.0019824	0.141429	0.011318
12	-0.004284	0.181928	0.004453	0.0657137	0.0560692	0.0634459	0.130599	0.0907234	0.0570439	0.0393033	0.073824	0.122812	0.0463552	0.0821538
13	0.146717	0.161527	0.156018	0.0969978	0.089583	0.0622242	0.104597	0.0963468	0.104807	0.122181	0.124128	-0.002198	0.164473	0.0608958
14	0.221607	0.286893	0.127477	0.149448	0.104184	0.262198	0.261518	0.158531	0.100732	0.259502	0.152121	0.052724	0.0796747	0.060915
15	0.050034	0.104317	0.116284	0.0816084	0.0811923	0.0384848	0.060687	0.0631331	0.102552	0.168993	0.127735	-0.002869	0.0610658	0.062307
16	0.0761495	0.0783548	0.121835	0.195473	0.137684	0.0809541	0.0398957	-0.072211	-0.16102	0.105921	-0.015174	0.102845	0.187283	-0.002943

SAS

SS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
9	0.044635	0.027311	-0.16497	0.913164	0.936626	0.696036	0.385223	0.773747	0.582127	0.136971	0.129291	0.283273	0.048497	0.911857
10	0.0078119	-0.11189	0.022071	0.433057	0.024146	0.130629	0.023741	0.126427	0.128804	0.140003	0.102397	0.843116	8.1E-04	0.149305
11	0.0162563	-0.07865	0.0708238	0.0284967	0.0238578	0.672219	0.526546	0.118105	0.167131	0.252401	0.211198	0.131227	0.188368	0.0258306
12	-0.140713	0.046213	0.314613	0.0248535	0.0425802	0.1175098	0.6695394	-0.047334	0.0425787	-0.01303	0.0900892	0.0477741	0.0792088	0.0770372
13	0.171305	0.203233	0.051643	-0.11832	-0.33829	0.0204526	0.118889	0.0221423	-0.028346	0.0330491	0.041017	0.154416	0.101395	0.11013
14	0.104928	-0.69728	-0.01943	0.0450374	0.0403692	0.023526	0.159337	0.13612	0.0992638	0.217428	0.166619	0.117354	0.155659	0.101514
15	0.000367	0.047071	0.084035	0.0785159	0.112164	0.040311	-0.116887	-0.024398	0.206227	0.127606	0.146741	0.0847502	0.0217611	0.0688701
16	-0.146436	-0.06615	0.0785235	0.0700192	0.0367748	0.0935285	-0.111557	0.159665	0.127401	0.0770828	0.12795	0.043986	0.0116196	0.0095247

OBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
9	0.171362	-0.02722	-0.06749	-0.15337	0.213573	0.0914081	0.0561086	0.197719	0.166598	0.162086	0.0894238	0.0286312	0.112426	0.0135633
10	-0.003356	-0.011532	-0.018267	0.300185	-0.019648	0.139403	0.0817438	0.228792	0.192456	0.0969896	0.0990923	0.202135	0.310793	0.068463
11	-0.009181	0.065283	0.095467	0.0526289	0.072279	0.099093	0.1067	0.051726	0.130309	0.115706	0.0614423	0.101418	0.050342	0.100909
12	0.0471143	0.006168	-0.019661	0.271256	0.0178763	0.146222	0.134012	0.0497043	-0.070106	0.032226	-0.055109	7.2E-04	-0.05033	0.0116071
13	0.0802265	0.184881	0.148434	-0.03715	0.0704024	0.106717	0.01215	0.0913546	0.0827363	-0.004867	0.0425256	0.071971	0.0685798	0.0132621
14	0.145641	0.095623	0.028009	0.0495572	-0.052921	0.0678651	0.0761502	0.164292	0.153018	0.106714	0.0673689	0.065352	0.108913	3.2E-04
15	0.0873612	0.20271	0.17071	0.156324	0.076283	0.0862897	-0.030859	-0.026557	0.001921	-0.115927	0.0347121	0.0679834	0.045001	0.0455332
16	-0.013379	0.168378	0.113236	0.0955243	0.0374137	0.110254	-0.11763	0.0604958	0.0629015	0.111701	0.0477204	0.0874232	0.0748791	0.0675666

OBS	V52	V53	V54	V55	V56	V57	V58
9	0.0468584	0.08982	0.001922	0.201144	0.0781476	-0.033343	0.148465
10	0.115412	0.0739288	0.0824656	-0.044621	-0.0424432	0.0784096	0.145694
11	0.167405	0.103035	0.19976	0.160897	0.159532	-0.051932	0.150199
12	0.084617	-0.035482	0.0344224	0.0501627	0.007941	0.021057	0.0760763
13	0.071046	0.065577	0.104722	0.107288	0.121037	0.204958	0.236128
14	0.086192	0.21555	0.252071	0.025073	0.11283	0.094451	0.287088
15	0.081976	-0.03863	0.0948744	0.025805	0.102399	-0.009277	0.050145
16	0.101694	0.0769738	0.261226	0.122884	0.0766091	0.115088	0.0909768

OBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
17	CORR	Q14	0.308347	0.386563	0.398202	0.282934	0.173463	0.339593	0.334584	0.405075	0.214223	0.295842	0.399858	0.300158
18	CORR	Q15	0.180529	0.204234	0.101735	0.076318	0.8284795	0.128792	0.201763	0.101214	0.141224	0.227371	0.0749858	0.383412
19	CORR	Q16	0.174749	0.133214	0.231388	0.056633	0.216694	0.375082	0.219464	0.238088	0.280476	0.198478	0.297539	0.297539
20	CORR	Q17	0.144032	0.236265	0.17753	0.213875	0.0394995	0.165987	0.18937	0.143576	0.173746	0.292376	0.143023	0.338371
21	CORR	Q18	0.0811973	0.175127	0.144616	0.213897	0.144512	0.198857	0.353377	0.0587052	0.173346	0.292376	0.143023	0.266884
22	CORR	Q19	0.260384	0.234182	0.245998	0.210156	0.101581	0.216405	0.255863	0.186244	0.143344	0.380231	0.185105	0.381688
23	CORR	Q20	0.172926	0.278991	0.183036	0.200401	0.115253	0.143933	0.25354	0.081978	0.0943446	0.284303	0.156691	0.272836
24	CORR	Q21	0.160172	0.211545	0.198224	0.105932	0.0779357	0.14379	0.188365	0.174339	0.239449	0.247573	0.105929	0.252095
OBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
17	0.509736	0.092029	0.210963	0.283615	0.273871	0.195625	0.299953	0.190364	0.277061	0.0193099	-0.22239	-0.109818	0.155616	
18	0.220913	0.128963	0.35967	0.406423	0.363297	0.368272	0.33547	0.319008	0.318771	0.055346	-0.129457	-0.038434	0.101308	
19	0.192405	0.218963	0.35967	0.397584	0.279363	0.329239	0.329239	0.319301	0.280169	0.280169	-0.072905	-0.029031	0.043396	
20	0.189115	0.283615	0.406523	0.397167	0.407041	0.306633	0.185406	0.288301	0.208972	0.0614475	-0.071311	-0.045276	0.070014	
21	0.069002	0.273871	0.363297	0.397584	0.407041	0.306633	0.185406	0.288301	0.208972	0.0614475	-0.071311	-0.045276	0.070014	
22	0.261374	0.319582	0.270363	0.346633	0.414391	0.414391	0.506621	0.239038	0.207472	0.0921202	0.161339	-0.095505	-0.001328	
23	0.182149	0.209953	0.33567	0.328239	0.485406	0.398382	0.50621	0.239038	0.207472	0.0921202	0.161339	-0.095505	-0.001328	
24	0.168293	0.190364	0.319591	0.288301	0.270363	0.346633	0.414391	0.414391	0.506621	0.239038	0.207472	0.0921202	0.161339	
OBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
17	0.290978	0.174989	0.212044	-0.034731	0.160602	0.310712	0.322629	0.240717	0.133269	0.299923	0.203483	0.459114	0.128529	0.056087
18	0.070292	0.071727	0.109326	-0.066002	-0.039459	0.169831	0.279303	0.14493	0.10035	0.12086	0.162703	0.182752	0.153691	0.131347
19	0.275629	0.244593	0.139826	-0.02746	0.0370791	0.328086	0.301811	0.15688	0.141676	0.206161	0.0500842	0.305825	0.215871	0.101384
20	0.14435	0.0830984	0.0493336	-0.02719	-0.008951	0.277373	0.221369	0.134898	0.101385	0.154322	0.149973	0.240625	0.181461	0.0635139
21	0.143673	0.097291	0.0947427	0.0294508	-0.001434	0.22715	0.258525	0.0537682	0.132511	0.154011	0.05212	0.236614	0.167891	0.102311
22	0.188048	0.147919	0.154184	-0.03289	0.169539	0.18909	0.235408	0.196212	0.199023	0.23497	0.241239	0.300333	0.245335	0.173481
23	0.139349	0.151866	0.0979969	0.017489	0.160992	0.263894	0.232315	0.150041	0.8998775	0.199473	0.0852685	0.297646	0.0957167	0.0636944
24	0.147373	0.106572	0.210573	0.0806254	0.0573345	0.169559	0.283704	0.0540837	0.088987	0.248525	0.139231	0.267586	0.188846	0.121715
OBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
17	0.0833485	0.14431	0.151361	0.206261	0.12416	0.34163	0.305203	0.226094	0.287686	0.182	0.241238	0.292408	0.195573	0.384682
18	0.120836	0.141282	0.0464221	0.0769724	0.04239	0.100188	5.0E-04	0.636959	0.172409	0.082857	0.139335	0.289023	0.151793	0.20114
19	0.131607	0.1376	0.348774	0.151936	0.025434	0.304763	0.083936	0.784037	0.170611	0.189067	0.2286	0.410678	0.39212	0.223028
20	0.036574	0.0443804	0.223234	0.195043	0.074205	0.12523	0.1P-313	0.205967	0.231632	0.142412	0.170584	0.290566	0.335523	0.165234
21	0.0794256	0.135851	0.212648	0.249215	0.17593	0.168307	0.133091	0.226112	0.246833	0.28242	0.189262	0.350491	0.308687	0.099453
22	0.131192	0.268158	0.129173	0.111096	0.0821201	0.129979	0.023088	0.236166	0.202206	0.141536	0.247197	0.284969	0.133769	0.26735
23	0.011147	0.16043	0.191127	0.114427	0.0116593	0.220479	0.0901336	0.150848	0.176972	0.130364	0.183847	0.284447	0.253192	0.132796
24	0.112303	0.0795872	0.0304111	0.071719	0.0512889	0.165143	0.0294886	0.070616	0.142941	0.153963	0.0550414	0.257335	0.211191	0.277906
OBS	Q55	Q56	Q57	Q58	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
17	0.264799	0.233974	0.275149	0.336357	0.0965341	0.0740378	-0.048022	-0.059526	-0.019409	0.095705	-0.0241682	-0.01527	-0.026591	0.0227838
18	0.130881	0.132616	0.174989	0.156244	-0.003416	-0.042552	0.046871	0.049623	0.113312	-0.084698	-0.071252	-0.19809	0.028026	0.06945
19	0.229945	0.35416	0.160543	0.247399	-0.033883	-0.055754	-0.070074	-0.026267	-6.3E-04	0.132122	-0.0842204	-0.071246	-0.058309	0.01263
20	0.229945	0.35416	0.160543	0.247399	-0.033883	-0.055754	-0.070074	-0.026267	-6.3E-04	0.132122	-0.0842204	-0.071246	-0.058309	0.01263
21	0.231505	0.35117	0.146143	0.247235	-0.033883	-0.055754	-0.070074	-0.026267	-6.3E-04	0.132122	-0.0842204	-0.071246	-0.058309	0.01263
22	0.140713	0.237359	0.168854	0.187944	-0.01289	0.188854	0.133777	-0.011719	0.133328	-0.0501124	-0.026687	-0.027923	-0.061003	-0.066865
23	0.26019	0.230841	0.156709	0.222773	0.0692461	0.3057489	0.044339	-0.044339	-0.044339	-0.044339	-0.044339	-0.044339	-0.044339	-0.044339
24	0.176741	0.227988	0.257529	0.240485	-0.017525	-0.0748570	-0.009771	-0.154483	-0.121568	-0.134261	-0.012714	-0.032669	0.038103	-0.001463

SAS

	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
085	0.143235	-6.0E-04	-0.52744	0.731874	0.804597	0.702681	0.191569	0.129004	0.118329	0.507068	0.127821	0.665702	0.172475	-0.575692
17	0.850017	-0.005707	0.007008	-0.040558	-0.625634	-0.10061	-0.0058323	0.210321	0.202012	0.0612855	0.355199	0.147549	2.3E-04	
18	0.706161	0.096038	0.058725	0.052803	0.044616	0.036287	0.0488235	0.727664	0.0419462	0.03199	0.090877	0.24831	-0.03361	0.045937
19	0.8280406	0.289317	0.017344	0.111116	-0.0043594	0.0574383	0.0574383	0.140945	0.0747422	0.0550066	0.0409658	3.5E-04	0.0094064	
20	0.8280406	0.289317	0.017344	0.111116	-0.0043594	0.0574383	0.0574383	0.140945	0.0747422	0.0550066	0.0409658	3.5E-04	0.0094064	
21	0.8280406	0.289317	0.017344	0.111116	-0.0043594	0.0574383	0.0574383	0.140945	0.0747422	0.0550066	0.0409658	3.5E-04	0.0094064	
22	0.8280406	0.289317	0.017344	0.111116	-0.0043594	0.0574383	0.0574383	0.140945	0.0747422	0.0550066	0.0409658	3.5E-04	0.0094064	
23	0.8280406	0.289317	0.017344	0.111116	-0.0043594	0.0574383	0.0574383	0.140945	0.0747422	0.0550066	0.0409658	3.5E-04	0.0094064	
24	0.8280406	0.289317	0.017344	0.111116	-0.0043594	0.0574383	0.0574383	0.140945	0.0747422	0.0550066	0.0409658	3.5E-04	0.0094064	
085	0.157445	0.109778	0.0597993	0.0549947	0.100007	0.163338	0.342817	0.145579	0.0718677	0.540258	-0.054471	0.20784	-0.371935	-0.057676
17	0.499299	0.106019	0.613176	0.728072	0.925228	-0.085557	0.140747	0.032819	0.032371	0.049171	0.015437	-0.02846	-0.91013	-0.097743
18	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
19	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
20	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
21	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
22	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
23	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
24	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
085	0.157445	0.109778	0.0597993	0.0549947	0.100007	0.163338	0.342817	0.145579	0.0718677	0.540258	-0.054471	0.20784	-0.371935	-0.057676
17	0.499299	0.106019	0.613176	0.728072	0.925228	-0.085557	0.140747	0.032819	0.032371	0.049171	0.015437	-0.02846	-0.91013	-0.097743
18	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
19	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
20	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
21	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
22	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
23	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289
24	0.115856	0.129926	0.13321	0.035693	0.100231	0.25772	0.135575	0.072193	0.072193	0.0826443	-0.106825	0.099882	0.070781	-0.002289

SAS

	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
08S														
17	-0.05556	-0.057098	0.121994	0.0902719	0.105338	0.125603	-0.050518	0.0200026	0.14849	0.202698	0.211926	0.0890796	0.101066	0.0465462
18	-0.0520412	-1.2E-04	-0.039872	-0.076024	-0.043651	-0.099414	-0.066241	-0.092097	0.106661	0.0370492	0.038138	0.115338	-0.15984	-0.0196004
19	0.027129	0.046328	0.0546618	0.0648905	0.0256406	-0.06179	-1.11176	-0.034463	0.182415	0.077058	0.113442	0.0782609	-1.55645	-0.131179
20	-0.089043	-0.034836	-0.11205	0.0657236	-0.0775439	-0.002372	-0.22808	0.0219558	0.117614	0.098497	0.118396	-0.045768	-0.23595	0.0282004
21	0.155677	-0.03155	-1.33801	-0.17285	-0.15751	0.078183	-0.148424	-0.07658	0.582654	0.665144	0.085778	-0.02629	-0.18362	-0.125751
22	-0.165678	-0.00509	7.023782	-0.02566	0.020933	0.0366415	-0.05337	-0.18815	0.591845	0.089417	0.105342	0.0851616	0.0898749	0.10975
23	-0.18031	-0.16591	0.007539	-0.211144	0.0356068	-0.027086	-0.112041	0.097392	0.128535	0.140997	0.11135	0.0470136	-0.045037	0.0039877
24	0.049452	-0.045401	0.0552459	-0.094187	-0.04611	-0.032236	-0.00556	-0.08438	-0.025013	-0.045091	-0.032783	0.0377112	-0.11206	0.0362075
08S														
17	0.0411551	0.114208	0.0462487	0.042034	0.0698555	0.111377	0.0553183	0.0867758	0.192508	0.188128	0.142035	0.169575	0.125325	0.14412
18	-0.054251	0.112608	-0.09777	0.046911	0.0649915	0.0863819	-0.034757	0.018248	-0.03661	-0.06959	-0.106968	-0.007848	-0.009635	-0.04907
19	-0.075983	-0.18919	-0.023636	-0.09271	-0.178486	0.254041	-0.0639929	0.15305	-0.03679	0.0344073	-0.044982	0.0946542	-0.040963	0.034468
20	-0.104387	0.095038	0.0365446	-0.0212945	-0.17583	0.136552	0.099357	0.057237	0.0627363	0.0262595	-0.027582	0.102557	0.0491419	9.2E-04
21	-0.040598	0.0478471	-0.00197	6.8E-04	0.004913	0.183556	0.0973604	0.154501	0.122708	0.060084	0.11206	0.146569	0.105617	0.0595032
22	-0.012272	0.232449	0.170893	0.108315	0.538726	0.0422378	-0.021716	0.0421304	0.0886803	0.0231606	0.138213	0.12648	0.0561861	0.0318716
23	-0.029362	0.113521	0.0506224	0.0512207	-0.315294	0.145674	0.114424	0.089566	0.115084	0.055216	0.0808366	0.221091	0.125037	0.0966209
24	-0.16366	0.176621	0.0221189	0.0299258	-0.046152	-0.016047	-0.044477	0.0328286	-0.083192	-0.03374	-0.163582	-0.086911	-0.098931	-0.021887
08S														
17	0.253936	0.179546	0.20677	0.239781	0.239781	0.213821	0.0871472	0.143021	0.192508	0.188128	0.142035	0.169575	0.125325	0.14412
18	-0.0192531	-0.03795	-0.030587	-0.0328934	-0.0328934	-0.0172564	-0.126245	-0.0199582	-0.03661	-0.06959	-0.106968	-0.007848	-0.009635	-0.04907
19	0.137333	0.0772197	0.0096538	0.0683219	0.0683219	0.0301263	-0.079136	-0.06394	-0.03679	0.0344073	-0.044982	0.0946542	-0.040963	0.034468
20	-0.0408758	-0.024962	-0.069356	-0.027405	-0.027405	-0.026855	-0.03259	-0.027418	0.0627363	0.0262595	-0.027582	0.102557	0.0491419	9.2E-04
21	0.156321	-0.008862	0.019824	0.0211298	0.0211298	0.0567513	0.0268922	0.116919	0.122708	0.060084	0.11206	0.146569	0.105617	0.0595032
22	-0.025813	-0.190887	0.0157738	-0.0712887	-0.0712887	-0.0562058	-0.076188	0.122479	0.0886803	0.0231606	0.138213	0.12648	0.0561861	0.0318716
23	0.190796	0.0333572	-0.11732	-0.0126184	-0.0126184	-0.005364	0.186254	0.0338179	0.115084	0.055216	0.0808366	0.221091	0.125037	0.0966209
24	-0.072803	0.0041652	-0.040551	-0.040551	-0.040551	-0.021812	-0.025483	0.0230778	-0.083192	-0.03374	-0.163582	-0.086911	-0.098931	-0.021887

OBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
25	CORR	Q22	0.239904	0.239369	0.191241	0.280221	0.081188	0.203712	0.230477	0.244294	0.324432	0.252573	0.20714	0.241857
26	CORR	Q23	0.110819	0.0401693	-0.055844	0.140363	0.181171	0.109663	-0.084639	0.020566	0.197373	0.221462	0.127528	0.0072863
27	CORR	Q24	-0.063566	0.112857	-0.042663	0.140896	0.255927	0.277916	0.331608	-0.024281	0.238492	0.079366	0.226428	-0.211837
28	CORR	Q25	-0.025614	3.1E-04	1.6E-04	0.050655	0.100239	-0.075178	-0.131981	-0.087145	0.0486647	0.241434	0.0055188	-0.068081
29	CORR	Q26	0.0193973	0.0857608	-0.020841	-0.034232	0.0846397	0.072456	0.133774	0.114734	0.212448	0.147621	0.0726188	0.0204072
30	CORR	Q27	0.210837	0.333205	0.230491	0.250479	0.139742	0.223412	0.10749	0.2909	-0.0269801	0.248197	0.183587	0.266736
31	CORR	Q28	0.106714	0.185775	0.0829933	0.230542	0.0875555	0.117431	0.105592	0.137384	0.10778	0.279144	0.217367	0.170378
32	CORR	Q29	0.249068	0.220871	0.242448	0.194851	0.16704	0.145523	0.0851569	0.202647	0.26062	0.244176	0.135052	0.177743
OBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
25	0.183588	0.277061	0.218777	0.220169	0.208972	9.207427	0.2576	0.19453	0.232952	1	0.18197	0.113831	0.0344736	0.108834
26	0.0751766	0.0193099	0.0056346	0.0738634	0.0614475	0.0921202	0.0282778	0.0229773	0.141008	0.18197	0.257102	0.300873	0.0931593	0.10233
27	-0.093501	-0.22239	-0.129457	-0.072905	-0.071311	-0.016139	-0.192539	-0.023766	-0.111345	0.113831	0.257102	0.300873	0.0931593	0.10233
28	-0.039026	-0.109818	-0.033434	-0.029031	-0.045276	-0.095505	0.0078662	1.3E-04	-0.036762	0.034736	0.300873	0.0931593	0.10233	0.100171
29	0.143115	0.155616	0.101308	-0.043596	-0.070014	-0.091328	0.157339	0.079952	0.130934	0.108834	0.0931593	0.10233	0.100171	0.100171
30	0.34608	0.209078	0.0702922	0.275679	0.14435	0.143673	0.188048	0.139349	0.147373	0.233885	0.0890947	-0.273819	-8.4E-04	-0.007714
31	0.20945	0.174989	0.0873727	0.244593	0.0830984	0.0897291	0.147919	0.151066	0.165752	0.156721	0.092861	0.331771	0.092861	0.231675
32	0.190572	0.212044	0.109326	0.139826	0.0495336	0.0947427	0.154184	0.0979969	0.210573	0.284858	0.162915	0.12221	0.101858	0.141762
OBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
25	0.233865	0.156721	0.284858	0.038057	0.224211	0.277004	0.204426	0.115326	0.0734992	0.252595	0.200649	0.300752	0.0690142	0.411884
26	0.0600947	0.0720955	0.162915	0.171945	0.0548172	0.175274	0.106324	0.0050451	0.1063201	0.121051	0.170805	0.209331	0.0934024	0.132657
27	-0.073819	0.033711	0.12221	0.347405	0.230326	0.0425619	-0.085845	-0.136321	-0.045008	-0.163379	0.115342	-0.0461795	-0.002601	-0.042781
28	-8.4E-04	0.0920612	0.101628	0.114282	0.189277	0.0708653	-0.043513	-0.14825	-0.099261	-0.036691	0.110744	-0.029403	-0.002601	-0.042781
29	-0.007714	0.462352	0.17057	0.0709656	0.225412	0.190845	0.142363	0.0552193	0.0911616	0.0632903	0.135389	0.0684142	0.0688904	0.0462851
30	0.462352	0.17057	-0.036935	0.083803	0.19062	0.322583	0.245345	0.454409	0.240918	0.206518	0.161367	0.309573	0.289721	0.0720081
31	0.144903	-0.144903	-0.15292	0.287636	0.0725602	0.286755	0.116144	0.059213	0.206518	0.179234	0.253594	0.282263	0.100368	0.100368
32	0.17057	0.144903	1	0.266118	0.26317	0.148398	0.179277	0.102635	0.0753958	0.191474	0.211735	0.215046	0.097089	0.0491942
OBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
25	0.0040507	0.140844	0.0945098	-0.013785	-0.018988	0.190789	0.185918	0.174346	0.102463	0.165405	0.0902742	0.193985	0.255121	0.225859
26	-0.07722	0.15829	-0.021373	0.013785	-0.015402	-0.02186	0.0892975	-0.004607	0.04662	0.10902	0.014052	0.029983	0.134535	0.0978672
27	-0.069787	0.028186	-0.083119	0.024322	-0.062165	-0.017349	0.095139	-0.037633	-0.04135	0.177125	0.0123784	-0.095193	0.0815428	-0.138181
28	-0.087093	0.179678	-0.123368	-0.019695	-0.058717	-0.108653	-0.025849	-0.10148	-0.098669	-0.131322	-0.105088	-0.065935	-0.080212	-0.114524
29	0.0914599	0.172375	-0.009454	0.0932173	0.094349	-0.00742	-0.111635	-0.11754	-0.066343	-0.084894	-0.17287	0.0879377	0.060685	-0.0521057
30	0.0046774	0.158779	0.108648	0.171391	0.0357132	0.194893	0.138248	0.14732	0.0273484	0.098823	0.133029	0.242469	0.308605	0.308605
31	0.0788033	0.0531727	0.088542	0.077032	0.030304	0.134253	0.11582	0.150021	-0.038674	0.131559	0.194473	0.0565483	0.247944	0.247944
32	-0.01171	0.25138	-0.01167	0.138724	0.0235725	0.111748	-0.005872	0.049087	-0.4E-04	0.180573	0.0046553	0.0131227	0.194575	0.185978
OBS	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68
25	0.119449	0.186244	0.292665	0.229793	0.072939	-0.01629	0.0802832	0.0765808	-0.002447	0.0760554	-0.003113	-0.113535	0.0395374	-0.196138
26	0.0160694	0.119729	0.117119	0.173377	-0.062941	0.104416	0.136917	0.0457038	-0.074082	-0.21365	0.065619	0.0220181	-0.063153	-0.092955
27	-0.050106	-0.035043	0.0192268	0.112592	0.164153	0.0404794	0.16166	0.122965	0.073365	0.0730959	0.103128	0.103128	-0.037684	-0.0195
28	-0.190027	-0.103558	-0.004001	-0.040948	0.149434	-0.050202	-0.052965	0.153133	0.103907	0.305496	-0.266778	-0.027093	-0.037684	-0.074144
29	0.1299482	0.214179	0.287402	0.0721404	0.084075	0.0481745	-0.101937	0.053133	0.103907	0.305496	-0.266778	-0.027093	-0.037684	-0.074144
30	0.239482	0.214179	0.287402	0.0721404	0.084075	0.0481745	-0.101937	0.053133	0.103907	0.305496	-0.266778	-0.027093	-0.037684	-0.074144
31	0.151743	0.168535	0.108724	0.239997	0.0546187	0.108564	-0.0921784	0.041957	0.069096	0.0552456	-0.059311	-0.084164	-0.099037	-0.0525616
32	0.0688405	0.0795077	0.207155	0.224486	-0.011535	0.17856	-0.0522493	0.0328493	-0.098968	0.0552456	-0.059311	-0.084164	-0.099037	-0.0525616

SAS

ONS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
25	-0.35971	-0.55396	-0.19864	-0.06015	.0313997	-5.2E-04	.0905003	.0163529	.0320782	0.038624	-.023025	0.119977	0.105507	.0514619
26	-.0283768	-.202454	-.095127	-.059099	.0110883	-.0508331	-.027004	.0548529	-.030451	.0104122	.0044013	-.033079	0.100045	0.101222
27	0.118551	-.104153	-.050151	-.055045	0.167378	0.209009	-.0510483	.0664384	0.105951	.01846874	0.107789	-.0233084	-.001544	.0055247
28	8.9E-04	.0443598	.0684011	-.016766	-.061671	-.015383	0.110981	0.165092	0.102627	.081332	.0043106	-.011824	.0180088	.0233107
29	0.015665	-.135002	-.152761	0.163709	-.021526	0.015134	.046717	.0929207	.0146165	.0958005	.0685659	.0538584	.0991663	0.12331
30	.0693898	.0366789	.0865582	0.063998	.0366789	.0865582	.0233058	.0816331	0.082838	.0713267	.0685291	0.033555	0.180134	.0883388
31	0.100053	0.213527	0.146918	-.122141	0.033584	0.120933	.0775269	-.0662468	-.0227471	.05286125	7.2E-04	-.107298	.006451	.0455003
32	0.13478	-.103108	0.12568	0.113086	-.021091	0.137055	.085515	-.044702	0.051295	-.031646	-.054321	-.039329	.0756252	
ONS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
25	-.027093	.0241869	-.014497	-.009717	0.158152	0.103611	0.216486	.0755665	0.105486	.0227335	0.111819	.0112166	0.115669	0.004046
26	-.001615	-.088234	-.078068	-.094785	-.009612	.0059367	0.109018	.0527161	0.134173	.031369	.0498936	-.019796	-.065772	-.071628
27	-.038435	.0412014	.0406174	-.035121	.0747667	.0139387	.029018	.0949191	0.109113	.0352783	.053097	.0389261	0.10145	0.121962
28	.00114475	0.159882	.0101372	.0056572	.0313055	-.000319	.0439691	0.076899	0.135015	.037353	.0532695	.0274205	.024901	.060299
29	0.0300925	0.159882	.0275173	.0853723	0.106002	-.00611	.0184449	.0988659	.008995	.070513	.0911814	.032907	.054768	.059164
30	0.125071	0.159006	.0416293	0.109425	.0427001	0.271257	0.129814	.0545952	.071721	.025316	.0915591	.0384621	.035321	
31	.0661368	.0647963	.3.8E-04	.0533672	.003407	.012985	.0533966	.0692108	.079473	.0793316	.0920465	.0340103	.0177365	
32	-.096413	-.030867	-.106133	-.131646	.0480862	-.039907	0.136901	-.005087	.0597338	.0284112	-.071493	0.236347	0.102181	-.025609
ONS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
25	-.047378	.0431309	0.18252	.0925082	.0802859	.0640129	.0407922	.0817929	-.040052	-.010182	.0012631	.0133959	-.011909	0.122773
26	.094838	0.112764	.079084	-.010081	-.0759714	.0959714	-.070686	.0204651	0.044416	-.070645	.019371	.157349	-.047011	.0655018
27	0.12448	.0120634	.0055694	.0385866	-.025795	5.8E-04	.0829029	.002906	.037515	-.103413	.042846	.0342963	.0011427	-.006572
28	0.13563	.002984	-.010571	.073958	-.090592	-.056277	.0019006	.0331911	.0438622	.043757	.0641753	.0233605	.001127	-.006572
29	0.17555	.042849	0.170954	0.210808	0.23365	0.160023	0.127002	.0872001	.0523777	.071215	.011706	.036284	.0751916	-.050109
30	.052871	.0831961	0.16260	0.129847	.0826633	0.101819	0.051326	0.119294	.0632556	0.216573	0.202563	0.157402	.0082754	0.143316
31	.025270	-.030036	0.116626	0.172556	0.165214	.059968	.0885504	0.127426	.038125	0.147826	0.170313	0.182144	.003014	.0672559
32	.021696	.0033036	-.035009	-.041995	-.044534	-.059177	.043746	-.040569	-.074048	-.03797	-.059544	-.098518	-.005886	0.106261
ONS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
25	-.033822	-.006106	-.018361	.0074574	0.171243	-.021533	-.023144	-.043689	.0268461	0.197807	.0473728	0.128545	-.006053	0.15877
26	.060844	-.018922	.0895691	-.052694	0.181064	-.080942	-.069721	.0128786	-.015477	.0456124	.0353674	-.018188	-.068912	0.15877
27	.069831	.108187	.047806	0.144886	0.2225	-.065193	.006312	-.063727	.0401662	.0895174	-.019954	.155103	.001479	.0482801
28	.069551	.141093	0.096536	0.134444	-.092145	.088255	.005333	0.0428	.0244411	.0712029	.001626	.006594	.0506251	.0146118
29	0.10359	.170714	.019265	-.011232	-.032554	-.038134	.04472	-.038811	0.122824	-.007964	-.095412	.001274	0.185013	
30	.048142	.0034312	.054003	-.004731	1.5E-04	0.15274	.034435	.0162018	.0694616	-.01018	.0394605	.038724	.0826297	.0929257
31	.135377	.0046932	.037544	.069879	.005569	.017534	.091916	-.064764	.0038419	.019677	-.054584	-.078093	0.120114	.0471937
32	.0252203	-.006266	-.111278	.0061768	.0970129	0.015065	-.046496	-.005191	.100407	.0556379	0.060032	.054962	.0228947	-.065632
ONS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
25	.0226153	.0317128	.0128207	.0349942	.0203104	.0580944	-.020341	-.028727	-.072228	.0187615	0.066047	.0312045	0.004208	.0975487
26	.0201931	0.040447	-.127059	.055082	0.10975	.0196363	-.093482	.0010968	.0182507	.008573	.021404	.0467181	-.024605	0.14127
27	.0320263	.0332681	-.077036	-.067643	.0708934	.0488323	0.017481	0.01768	.047435	-.057038	.010139	.0367787	-.065903	0.122933
28	.0441956	7.3E-04	.004182	.080516	.0021737	.003011	.006014	.004008	.029322	.0012202	.0279855	-.110523	0.147191	
29	0.100531	0.064319	.004775	0.116445	.0108298	0.123123	.0846113	0.0469051	.0096911	-.001079	0.1616	0.100524	.0490071	
30	.0139181	0.134609	0.126751	.0481646	.0340821	.089591	.030051	.006817	.0183544	0.118554	.011302	.0595385	0.101716	.0992092
31	.0325941	0.128285	0.047869	.025271	.0037533	0.004241	.0670383	.0327033	.062955	.0461928	.0609331	.031934	-.060977	-.046804
32	.0601596	0.115882	.0367137	.0367137	.0367137	-.0500679	-.085129	.048437	-.036217	-.005198	.0033421	-.011765	-.0.10365	-.0.10365

SAS

OBS V24 V25 V26 V27 V28 V29 V30 V31 V32 V33 V34 V35 V36 V37
 25 .0652448 -.078566 .0101919 .0114499 .0288888 .0098326 -.090378 -.024158 -.032873 -.080032 0.099781 .0552538 .0418783 .0695455
 26 0.076423 0.019184 .0501535 -.196725 -.215412 -.053914 0.159907 .0896537 -.073959 -.054868 -.09104 .0294199 0.155852
 27 0.2594 -.021689 .021316 -.155598 -.135351 .0416515 0.157908 .0896537 -.073959 -.054868 -.09104 .0294199 0.155852
 28 7.4E-04 0.172411 0.123148 .0240823 .0337881 .0032473 .0225477 -.01017 .089902 .067039 .0095535 0.118215 .0820978 0.195068
 29 .0427046 .0022181 0.04331 .132681 .094882 .122123 .073291 -.01016 .089902 .067039 .0095535 0.118215 .0820978 0.195068
 30 -.043789 .004202 0.060139 0.198725 .144293 .017401 .0590381 0.101123 .0988332 .0243768 .0636142 .0624882 0.082307
 31 -.001999 .0598682 .0892767 0.164511 0.135622 .013824 .095108 .0308882 -.050583 .030208 .045093 -.003463 -.026752 -.092744
 32 .0033628 .0130984 .0481394 -.042935 -.056181 0.204781 .0146073 .0533669 -.018197 0.100074 .0704346 0.120251 0.087195 .0479281

OBS V38 V39 V40 V41 V42 V43 V44 V45 V46 V47 V48 V49 V50 V51
 25 0.124991 0.106214 0.040928 0.106307 .0734328 0.118177 0.117536 -.007354 -.027901 0.10726 .0313881 .0170514 .0249805 .0249944
 26 -.021938 -.11E-04 .0240739 -.005218 .0432076 -.031641 -.003656 -.111537 -.136609 -.108759 -.170816 -.043651 .0149764 -.058535
 27 0.007883 -.075782 -.087215 -.097264 .0612152 -.004383 .0957622 .0501931 -.011428 0.127312 .023138 -.012631 -.062033 -.08462
 28 .0084421 .079791 .0696693 .0666501 -.022479 .0363228 0.10445 0.04516 .008656 .054997 .025534 -.040364 .0433668 .060459
 29 -.116797 .0248819 .0682313 .0485918 0.133685 .0376216 .0307897 0.153102 .0048454 .0641679 .0772965 .062498 .133244 .026416
 30 0.083256 0.160401 0.104253 .081826 .0354005 0.109716 .042451 -.001815 .0167019 0.057178 0.112663 0.145191 .0544032 0.133195
 31 -.001502 .0614947 .0349481 .0859088 -.012904 0.12934 .0341757 .0962362 .0494418 0.11242 .0691539 .0611138 .030226 .0546244
 32 .0876672 0.123551 .0481044 .0718838 0.074453 .0296284 0.130035 .0325471 .0546644 0.13715 .0084166 .0931473 .0187154 .0669116

OBS

V58

V57

V56

V55

V54

V53

V52

25 -.011743 -.023229 .0535844 0.157004 -.013818 -.0112098 .0687282
 26 -.125893 -.121279 .084905 -.115043 -.044216 .0096067 .0523888
 27 -.008997 -.016514 -.036075 .0105411 .045127 .0610874 .0676301
 28 -.076424 -.08622 .007373 .0581248 .025532 .076301 .076301
 29 0.023332 .0435435 0.156937 .0992908 0.109217 0.101909 .0612484
 30 .0247966 .0281907 .0263355 .0570784 .010992 .0134986
 31 -.050625 .0361548 .086144 .075784 .157531 .011592
 32 0.121884 .0129763 .0729663 .0381985 0.126827 0.085663

SAS

OBIS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12		
33	CORR	Q30	-0.186646	-0.012097	0.1614891	-0.492866	0.163359	-0.055656	0.232505	-0.5226891	0.175747	0.17769	0.127412	-153092		
34	CORR	Q31	-0.055347	0.111568	-0.095793	0.149761	-0.098076	-0.510096	-0.622871	-0.748999	0.133265	0.190165	0.153561	-0.538816		
35	CORR	Q32	0.433223	0.287811	0.307608	0.26636	0.342507	0.221428	0.252562	0.243043	0.153972	0.167252	0.217928	0.211926		
36	CORR	Q33	0.273754	0.382586	0.38969	0.270329	-0.0979018	0.246365	0.335614	0.22585	0.216844	0.294252	0.535958	0.222932		
37	CORR	Q34	0.268851	0.185062	0.402261	0.106401	-0.118994	0.119264	0.064435	0.232452	-0.0883469	0.113579	0.169876	0.4842565		
38	CORR	Q35	0.310682	-0.578045	0.112549	-0.121902	-0.0490331	-0.034342	-9.1E-04	0.141193	0.35028452	0.067362	0.0772053	0.0481199		
39	CORR	Q36	0.311659	0.315693	0.321525	0.307638	0.738468	0.211767	0.241878	0.261239	0.153221	0.255513	0.282956	0.11406		
40	CORR	Q37	0.213367	0.293364	0.281264	0.253546	0.281702	0.251435	-0.551903	0.179968	0.266457	0.263894	0.24691	0.226517		
OBIS	TYPE	NAME	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	
33	CORR	Q38	0.536727	-0.34731	-0.66002	-0.02746	-0.002719	0.291508	-0.03289	0.017489	0.0806254	0.038057	0.171945	0.342005	0.114282	
34	CORR	Q39	0.156734	0.160602	-0.39459	-0.370791	-0.098851	-0.001434	0.169539	0.160992	0.573345	0.224211	0.0548372	0.230328	0.189277	
35	CORR	Q40	0.226612	0.310712	0.169831	0.320086	0.277373	0.22715	0.18909	0.263894	0.176559	0.175274	0.0425019	0.25019	-0.019845	
36	CORR	Q41	0.26159	0.326659	0.279393	0.301811	0.221369	0.255255	0.231408	0.232315	0.283704	0.204426	0.106324	-0.058545	-0.34513	
37	CORR	Q42	0.227353	0.280777	0.149493	0.15638	0.134858	0.573682	0.196212	0.150041	0.119326	0.0050451	-1.36221	-0.14825	0.655293	
38	CORR	Q43	0.173333	0.232269	0.18015	0.141676	0.101385	0.132511	0.199023	0.0889775	0.088987	0.734492	0.186201	-0.045008	0.0911616	
39	CORR	Q44	0.354682	0.259923	0.17086	0.206161	0.154322	0.154011	0.23497	0.199478	0.248525	0.252595	0.121051	0.016379	0.0056691	
40	CORR	Q45	0.163181	0.283463	0.162703	0.050842	0.1409973	0.05212	0.241239	0.0852285	0.139231	0.200649	0.170805	0.0135342	0.10734	
OBIS	TYPE	NAME	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
33	CORR	Q46	-0.36935	-0.15292	0.26118	1	0.22756	0.0469957	-0.044307	0.061102	0.252321	0.0804397	0.104576	0.040499	0.517654	-0.03851
34	CORR	Q47	0.287636	0.20317	0.22756	1	0.093445	0.5236897	0.0499142	0.107858	0.154315	0.154315	0.154315	0.154315	0.154315	0.154315
35	CORR	Q48	0.19062	0.275602	0.140398	0.469957	0.093445	0.336397	0.330175	0.178962	0.231302	0.231302	0.231302	0.231302	0.231302	0.231302
36	CORR	Q49	0.322283	0.280755	0.179277	0.044307	0.0536897	0.339397	0.349314	0.112688	0.261922	0.261922	0.261922	0.261922	0.261922	0.261922
37	CORR	Q50	0.245345	0.116144	0.102635	0.0061402	0.0959142	0.230175	0.349314	0.112688	0.261922	0.261922	0.261922	0.261922	0.261922	0.261922
38	CORR	Q51	0.094409	0.299213	0.073958	0.252321	0.178962	0.112688	0.178962	0.112688	0.261922	0.261922	0.261922	0.261922	0.261922	0.261922
39	CORR	Q52	0.20918	0.206518	0.191474	0.0604397	0.124115	0.233105	0.263962	0.144031	0.708752	0.159713	0.058594	0.0830453	0.161993	0.161993
40	CORR	Q53	0.161387	0.179234	0.211735	0.104576	0.160551	0.152362	0.245942	0.062159	0.159743	0.387991	1	0.286778	0.115993	0.0343776
OBIS	TYPE	NAME	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
33	CORR	Q71	0.163379	0.281581	0.0028199	0.152569	-0.056159	0.0483132	-0.094615	-0.078658	-0.045972	-1.10937	0.167125	0.0040117	-0.0551	-0.037343
34	CORR	Q72	0.098004	0.035805	0.135058	0.100407	0.071221	0.0736089	-0.078161	0.120129	0.12982	0.031572	0.059784	-0.133978	0.161287	0.151958
35	CORR	Q73	0.229002	0.201882	0.425217	0.261226	0.0617828	0.0870949	0.055666	0.0917255	-0.007908	0.847054	0.6042089	-0.02189	0.097613	0.074912
36	CORR	Q74	0.304504	0.271995	0.219632	0.227946	0.159908	0.108597	-1.25751	-0.95878	-0.04034	0.100777	0.045189	-0.05319	0.092014	0.0581533
37	CORR	Q75	0.268567	0.141587	0.129497	0.1086	0.0765193	0.202179	-0.34123	0.0431983	0.016694	0.063669	0.0849270	-1.113292	0.136256	0.187043
38	CORR	Q76	0.0711663	0.085037	0.236257	0.0997346	0.611534	0.275366	-0.056198	0.125376	-0.014097	0.043137	0.054182	0.0361512	0.0533923	0.0533923
39	CORR	Q77	0.123237	0.210484	0.158277	0.318107	0.0012443	0.661481	-1.12815	-0.05886	-0.152453	-0.066729	0.130424	-0.069491	0.0310424	-0.019946
40	CORR	Q78	0.225293	0.166071	0.0478591	0.239449	0.050761	7.8E-04	-1.071422	-0.036222	-0.14024	-0.004991	0.0210921	-0.069491	0.0310424	-0.019946

08S	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
33	0.110931	-0.569679	-0.147167	-0.049649	-0.024258	-0.075043	-0.026603	-0.058618	-0.06659	0.572024	-0.038924	-0.061013	-0.042761	-0.047741
34	0.0481598	0.0421912	0.109753	-0.10514	0.203547	0.179994	0.048748	-0.023315	0.167817	-0.152281	-0.19209	-0.104573	-0.045725	0.0761579
35	0.0656362	-0.119474	-0.115366	-0.315127	0.070719	0.094966	0.159513	0.161953	0.108872	0.159513	0.0513283	-0.117753	-0.104567	-0.009782
36	0.1170529	-0.03678	-0.159713	-0.362223	0.096344	0.060465	0.287923	0.120814	0.0928605	0.089681	0.039972	-0.039972	-0.169843	0.143512
37	0.0790329	0.025538	-0.10711	0.0909122	0.10711	0.060786	0.087892	0.170914	0.161349	0.035358	0.01705	-0.045251	0.055266	0.041107
38	0.154551	-0.036233	0.0695661	-0.09098	0.029323	-0.050149	0.049693	0.153335	0.101921	0.046097	0.0508295	0.233881	0.031822	0.0336059
39	0.0230636	-0.04423	-0.122944	-0.08098	0.0744377	0.10565	0.103924	0.021498	0.071858	0.0427508	-0.002638	0.0350214	0.0549221	-0.111683
40	0.0215161	-0.08247	-0.036824	-0.062555	-0.022492	-0.020699	0.0779322	-0.01008	-0.036703	-0.013755	-0.010044	0.0350214	0.113758	-0.019296
08S	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
33	-0.041294	0.0612053	-0.043004	-0.198912	0.177725	-0.042868	0.0213052	0.044493	0.0187251	0.0185091	-0.015645	-0.0601673	0.079982	-0.011999
34	-0.124257	0.060338	0.0241538	0.0274723	0.01608	0.061886	0.0699306	0.0669222	0.0526187	0.118248	-0.0064949	-0.0551403	0.121404	0.207582
35	0.0861977	0.0898332	0.0480358	0.170337	0.0950515	0.039617	0.129809	0.0864523	0.0366094	0.064423	-0.071465	0.1378	0.0093345	0.0245975
36	0.146859	0.160492	0.109345	0.021513	0.167889	0.105779	0.181117	0.202515	0.056181	0.0482991	-0.096104	-0.0950504	0.0159944	-0.052309
37	0.135651	0.0800359	-0.072831	-0.058785	0.116684	0.025661	0.11482	0.105899	-0.054588	0.114634	-0.114634	-0.02028	0.0194284	-0.095205
38	0.0834743	-0.0123339	-0.0159743	-0.022829	-0.049558	0.0298315	0.03905	0.0298315	0.077907	0.0717697	-0.038733	-0.066231	0.0386161	0.0342123
39	0.0944316	-0.027684	-0.106128	-0.057873	0.0221638	-0.031462	0.0979879	0.030296	-0.075752	0.0405923	0.019899	0.106011	-0.06611	-0.179084
40	0.0567537	-0.019329	0.0215977	-0.016002	0.0337584	0.0788414	0.0366973	0.126523	0.131513	-0.084498	-0.001542	0.0619406	0.0343387	-0.02841
08S	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
33	0.0236103	0.0599043	-0.097302	0.0587916	-0.041081	-0.023348	-0.041057	0.0566749	-0.065024	-0.056283	-0.047949	-0.077306	-0.060833	0.010034
34	0.061955	-0.008458	0.002407	0.120041	0.152222	0.12504	0.107557	0.171043	-0.017341	0.041652	0.0782985	0.049685	0.0718506	0.105408
35	-0.035304	0.125613	0.0186049	0.0586528	0.0336556	0.075572	0.075572	0.120423	0.119597	0.045566	0.013656	-0.05199	0.0915204	0.105408
36	-0.04404	0.125844	0.250899	0.251404	0.210559	0.19602	0.1667	0.128652	0.171241	0.106583	0.0728074	0.01282	0.114765	0.098708
37	-0.13504	0.204462	0.124772	0.182687	0.129639	0.097604	0.097604	0.113394	0.052218	0.0231349	-0.017827	-2.21-02	0.183801	0.155103
38	0.022614	0.115765	0.175927	0.126691	0.104026	0.0879974	0.0547362	0.128323	0.025403	-0.038702	0.0526898	0.0526898	0.208681	0.0935114
39	-0.137385	0.107885	0.134623	0.20571	0.154818	0.110196	0.113114	0.108953	0.039638	0.019307	0.049369	-0.109566	0.108204	0.0886824
40	0.0884362	0.0915702	0.0907543	0.0498734	0.0328861	-0.003853	0.0490169	0.108666	0.073684	0.0476297	0.0453784	-0.011453	0.093841	0.0354999
08S	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
33	0.0305604	-0.027905	0.132534	0.026319	0.159745	0.0374352	-0.071768	0.116108	-0.094507	0.104825	-0.0491364	0.0086047	0.0978148	-0.03006
34	0.131116	0.0260097	-0.025963	0.061689	0.167253	0.0895964	-0.048304	0.108217	-0.079712	0.0920552	-0.038279	0.0279246	0.0861065	0.0634183
35	-0.19708	-0.021595	0.109098	-0.013993	0.0596797	-0.00641	0.124276	0.203507	0.0904788	0.0660208	0.153192	0.0562072	0.0393905	0.0811806
36	0.035307	0.067598	0.0211939	0.0454049	0.009325	0.0859696	0.0859696	0.113409	0.0919358	0.079368	0.1674298	0.110375	0.116507	0.116507
37	0.0338387	0.066598	0.0211939	0.0454049	0.009325	0.0859696	0.0859696	0.113409	0.0919358	0.079368	0.1674298	0.110375	0.116507	0.116507
38	0.132594	0.0886848	0.0833448	0.124504	0.006612	0.121051	0.0467293	0.180722	0.109145	-0.094141	0.073762	-0.0659042	0.0884293	-0.036619
39	-0.031918	0.11547	0.0329104	-0.054718	-0.050401	0.139166	0.120864	0.133829	-0.022262	0.031918	0.100444	0.118859	0.128522	0.0049606
40	-0.056615	0.0954005	0.120924	0.0188638	0.103345	0.022478	0.0786697	0.109311	-0.016666	0.113067	0.145391	0.0481779	0.0619408	0.146602
08S	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
33	0.0709131	0.0541356	0.0020276	0.0487642	-0.0255558	-0.025278	-0.028416	-0.040488	-0.014282	-0.029602	0.0257431	0.0451311	0.0443408	-0.027086
34	0.129721	0.0606308	-0.024474	0.111997	0.166338	0.116895	0.0613595	0.0260352	-0.065222	0.0246201	-0.0915925	0.0936488	0.073652	0.0891391
35	-0.02139	-0.031274	0.1098834	0.0751055	0.0401597	0.114613	0.133591	0.106549	0.087895	0.0510487	0.0520229	0.065925	-0.0046435	0.013228
36	0.0422935	0.1708531	0.140775	0.0576422	0.106681	0.101703	0.135666	0.0994328	0.0905632	0.113948	0.140414	0.0573868	0.176314	0.084234
37	0.1173593	0.0955931	-0.015944	0.141737	0.0697585	0.0725362	0.132988	0.0715797	0.0220645	0.0598836	0.0841473	0.0538073	0.0839853	-0.123149
38	0.116428	0.1722	-0.08136	0.102844	0.10585	0.06842741	0.0864848	0.0510995	0.111449	0.0415634	0.0080475	0.107103	0.0122524	-0.009506
39	0.0820477	0.108712	0.072556	0.106964	0.0613177	0.116534	0.0688266	0.039819	0.0288715	0.163620	0.1111468	0.015834	0.0061925	-0.033695
40	0.0413508	0.0020585	-0.068796	0.0520122	0.111758	0.099277	0.0897078	0.0466361	-0.027528	0.0166521	0.0083315	0.0084395	0.0134947	0.037639

SAS

OBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
33	-.013967	-.119181	-.007366	-.079053	-.150274	.0556949	.0291913	.0103934	-.105325	.0633389	-.057361	-.010719	0.108455	-.0675968
34	0.0433962	.0614339	0.170739	-.0875342	.0213166	.0583019	0.110216	0.246471	-.017632	.0482118	.0851397	.0708333	.0592621	0.0586663
35	-.0199317	.08841585	-.0071117	-.045849	-.070023	.0301285	-.053151	-.013055	.0932703	.0866936	0.146893	0.16068	-.062707	.0710197
36	.0231567	.0090715	.0348753	.0347796	-.013546	-.001637	-.031976	.0044866	.0873899	0.113887	0.126923	0.189609	.0629772	0.155046
37	-.168261	-.065246	-.050422	.0413181	-2.2E-04	-.009216	-.119073	.0456671	.0179054	.0639965	0.237761	0.182591	.0845535	-.031882
38	.0333733	.0711787	0.046347	-.021501	-.049619	-.068143	-.000307	.0231262	0.142992	.0770667	0.111609	0.256594	.0731654	0.093434
39	-.05151	-.053032	-.03101	.0068308	.0016316	.0150146	.0183339	-7.3E-04	.0776867	0.146036	.0947217	.0677662	0.120227	0.103669
40	.0363038	.0123802	.0831585	0.033726	.0795897	.0058128	0.112387	.0538379	.0384259	.0953566	.0625501	0.115971	0.309753	0.311004

OBS

OBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
33	.0941086	-.015161	-.025997	-.002594	.0579754	-9.06775	0.108326	.0097739	-.014683	0.107948	-.007867	.0832882	.0436854	.0161207
34	-2.9E-04	0.169738	.0989852	.0722246	.0929158	.0569945	.0526597	.0382828	-.014627	.0257017	.003352	.0490789	-.03751	.0600678
35	.0780054	.0420315	.0082727	.0218154	.0267508	0.136673	0.153109	.0207353	.0188022	.0775383	7.8E-04	.0763819	.0817716	.0699757
36	0.13631	.0627638	.0308279	.0880416	.0433823	0.221458	0.129469	.0989284	.0873549	0.13385	.0082684	0.133197	.0752295	0.128875
37	-.010287	0.166164	0.154711	0.141411	.0280666	.0715072	-.011744	.0350709	.0913103	.0693645	.0256454	0.151817	0.180567	0.121927
38	-.003814	0.127406	.0835914	.0011271	.0293474	.0228377	-.015181	0.004177	.0562539	.0971376	.0496732	0.073458	.0650495	.0711622
39	.0388704	.0294451	.0104582	.0034395	.0846405	.011201	.0814817	.0304003	.0712133	.0312562	.0488048	.0281419	.0890729	
40	0.235166	.0752438	.0548638	.0339808	.0100597	.0887823	0.115032	.0114516	0.101827	.0464497	-.034398	-.047186	.0140777	-.0.0026

OBS

OBS	V52	V53	V54	V55	V56	V57	V58
33	-.0.111	-.036054	.0505218	.0152C59	.0655349	0.135641	.0357927
34	.0335149	.0385287	0.146682	0.104746	.0811067	0.139371	.0116302
35	.0615665	.0231401	.0867678	.0921287	0.144651	.0623423	0.109572
36	.0704498	0.10939	.0958039	0.167961	0.212934	-3.7E-04	0.16989
37	.0932014	.0297568	.0189969	0.108863	0.174488	-.027938	1.3E-04
38	0.129513	.0725184	.0642554	.0243131	.0656318	0.152795	.0812726
39	.0716429	.0884946	.0433435	0.194772	0.111163	.0105919	.0748721
40	.0897991	.0628969	.0062186	0.132102	.0872345	0.148228	0.209732

SAS

OBS	_TYPE_	_NAME_	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
41	CORR	Q38	0.381547	0.331941	0.43945	0.467314	0.310508	0.487788	0.308052	0.365347	0.266192	0.430369	0.334187	0.28217
42	CORR	Q39	0.0427247	0.147985	0.027605	0.128658	0.0962276	0.109754	0.0908796	0.213206	0.0483533	0.258982	0.112854	0.196218
43	CORR	Q40	0.0898533	0.0497085	0.0317059	0.070459	0.0280094	0.101681	0.1020202	0.0933701	0.0517062	0.177342	0.119096	0.133962
44	CORR	Q41	0.0216836	0.1922734	0.0217218	0.148032	0.0235011	0.0266293	0.132406	0.108431	0.059568	0.193126	0.128105	0.16315
45	CORR	Q42	0.2908664	0.1922991	0.281493	0.219621	0.0778887	0.157321	0.116838	0.220441	0.0446053	0.236361	0.200319	0.188918
46	CORR	Q43	0.0733775	0.121227	0.110991	0.20561	0.011729	0.0670601	0.192893	0.206405	0.0771133	0.166991	0.0858579	0.0703403
47	CORR	Q44	0.113491	0.102504	0.134281	0.135049	0.017779	0.129396	0.170465	0.183381	0.0633115	0.165195	0.150934	0.085867
48	CORR	Q45	0.143595	0.132499	0.143549	0.0976394	0.075848	0.1173949	0.0962123	0.0622563	0.0075099	0.0424526	0.178578	0.084788
OBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
41	0.323599	0.459114	0.102752	0.305825	0.240625	0.236614	0.300333	0.297646	0.261586	0.300752	0.209391	0.0461705	-0.029463	0.664145
42	0.167173	0.120529	0.153691	0.181461	0.127891	0.242535	0.0957167	0.108846	0.0901182	0.0934024	0.0934024	-0.002601	-0.0294	0.688904
43	0.141899	0.056087	0.131347	0.113484	0.0635139	0.102311	0.173481	0.0636944	0.121715	0.0411884	0.122657	-0.042781	-0.003091	0.0462851
44	0.131235	0.0833485	0.120836	0.131607	0.0396574	0.0474256	0.133192	0.0141147	0.112303	0.0040507	-0.07722	-0.069787	-0.087093	0.0914599
45	0.165549	0.144937	0.141282	0.1376	0.0443084	0.135051	0.298158	0.16043	0.093872	0.108044	0.15629	0.0328186	0.179678	0.172375
46	0.120297	0.151361	0.0468221	0.346774	0.227234	0.212648	0.128173	0.191127	0.0301411	0.0945098	-0.021373	-0.088319	-0.123368	-0.009454
47	0.0851313	0.206261	0.0769724	0.133936	0.115454	0.249216	0.114427	0.173719	0.015105	0.013785	0.0243322	0.043322	0.019695	0.932173
48	0.108515	0.124116	0.042339	0.025434	0.0974205	0.17593	0.0821201	0.0015653	0.0512889	-0.018988	-0.015402	-0.062165	-0.058717	0.094349
OBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
41	0.309575	0.283594	0.215046	0.040499	0.114046	0.103321	0.361086	0.260538	0.0592494	0.333705	0.286778	1	0.157605	0.0448049
42	0.269751	0.242263	0.097089	0.0517654	0.202464	0.123453	0.131931	0.102588	0.0830453	0.0564274	0.115993	0.157605	0.346597	0.0448049
43	0.0720081	0.100368	0.091942	-0.03851	0.161564	0.113073	0.302399	0.112877	0.161983	0.055587	0.0343776	0.0448049	0.238597	0.0448049
44	0.0088174	0.0788633	-0.01171	-0.040473	0.0666818	0.0606056	0.012652	0.072495	0.090014	-0.00087	0.006087	0.021836	0.346597	0.0448049
45	0.158779	0.0531727	0.25130	0.141249	0.123663	0.329709	0.085375	0.271353	0.175761	0.254102	0.265705	0.201069	0.152002	0.179279
46	0.108648	0.0889542	0.010167	0.012845	-0.159046	0.105205	0.163477	0.215137	0.170628	0.0791686	-0.032106	0.184717	0.0224598	-0.068056
47	0.0713391	0.0977032	0.0138724	0.016659	0.0405381	0.178368	0.163409	0.186603	0.110841	0.0406694	0.0252771	0.143688	0.0312683	-0.00127
48	0.0357132	0.0383044	0.0233725	-0.006644	-0.008648	0.152853	0.110513	0.165794	0.145594	-0.021018	0.0317761	0.122815	-0.095759	0.0267801
OBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
41	-0.021836	0.201069	0.164717	0.143688	0.122515	0.279153	0.164271	0.320264	0.15328	0.232817	0.200881	0.298578	0.268363	0.337313
42	0.238352	0.152602	0.0224598	0.0312683	-0.095759	0.0842593	0.075592	0.0412333	0.0102711	0.0934425	0.171943	0.124467	0.0312171	0.289173
43	0.423556	0.179219	-0.06056	-0.00127	0.067801	0.0637427	-0.029889	0.059667	0.0412892	0.0478045	0.112559	0.008866	0.020224	0.216495
44	1	0.073793	0.151437	0.1155601	0.159886	0.108743	0.101292	0.124334	0.0129859	0.0337052	0.147955	0.016214	-0.016805	0.213835
45	0.0743753	0.0556538	1	0.0556538	0.0841471	0.178788	0.0841471	0.099272	0.0761829	0.0737052	0.0000714	0.169571	0.175117	0.19617
46	0.0751437	0.0556538	1	0.0556538	0.0841471	0.178788	0.0841471	0.099272	0.0761829	0.0737052	0.0000714	0.169571	0.175117	0.19617
47	0.015601	0.0041471	0.520076	1	0.496257	0.196861	0.196861	0.201128	0.276956	0.19193	0.19193	0.312925	0.21125	0.0396311
48	0.159806	0.178788	0.344405	0.496257	1	0.198368	0.157018	0.156222	0.166253	0.141463	0.190453	0.141602	-0.0078256	0.0078256
OBS	Q55	Q56	Q57	Q58	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
41	0.312065	0.278579	0.280494	0.377643	0.0881094	0.0515391	0.0863144	-0.052668	0.0465932	0.087643	0.120242	-0.020668	-0.006917	0.0261911
42	0.110894	0.11994	0.209076	0.10859	-0.14429	-0.004277	-0.048334	0.0839516	0.0504761	0.036919	0.039502	-0.07457	0.0021921	-0.006977
43	0.002054	0.19315	0.197045	0.071674	-0.077871	-0.105079	0.015079	0.178356	0.152114	0.0082389	-0.003707	-0.123351	0.0396569	-0.088234
44	0.007402	0.141774	0.093112	0.136937	-0.030683	-0.158777	0.091697	0.041467	0.0917807	0.032164	-0.130567	-0.093303	0.011456	-0.055185
45	0.175407	0.12257	0.35329	0.134339	0.0309192	0.0691073	0.025094	0.0367042	0.020316	0.0184781	-0.131337	0.0032218	0.0453245	0.0453245
46	0.403228	0.347423	0.531034	0.177678	0.089408	0.112362	-0.0367	0.0567123	0.0033829	0.033656	-0.074215	0.0699662	0.158786	0.158786
47	0.256404	0.185979	0.0621497	0.105095	0.120877	0.152122	0.0368982	0.080271	0.0633848	0.0701506	0.0728500	0.030019	0.02294857	0.158786
48	0.0900708	0.160411	0.103503	0.0753804	0.0948801	0.0170597	-0.001404	0.0787217	0.05988212	0.0783793	-0.11465	0.0799587	0.0294857	0.158786

DBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
41	-0.142017	-0.024069	-0.067149	-0.0086903	0.102425	0.543401	0.187675	0.084936	0.248602	0.140523	0.36224	0.587966	0.075677	-0.039015
42	-0.141751	0.0655423	0.0755434	0.011363	-0.35611	0.121071	0.183337	0.079115	0.076206	-0.05032	-0.24683	-0.12188	-0.01204	-0.036271
43	-0.102118	-0.038806	-0.004811	-0.211356	-0.065603	0.006952	-0.145517	-0.004163	-0.011998	-0.04582	-0.16652	-0.10205	-0.033662	-0.083475
44	0.113302	-0.043636	-0.095432	-0.0856608	-0.056126	-0.058522	-0.149028	-0.008308	-0.006968	-0.03258	-0.1531	-0.03025	-0.021961	-0.027858
45	0.0356073	-0.092123	-0.117846	-0.025974	-0.0079479	-0.0459668	0.111214	0.115048	0.036732	0.0895412	-0.0825236	-0.021432	0.0420312	0.108101
46	0.114496	-0.072962	-0.009831	-0.0523833	0.0620059	0.0238241	0.311277	0.137138	0.198528	0.0593909	0.0719121	0.133277	0.0603336	0.218257
47	0.172928	0.145301	-0.037268	0.047316	0.0910605	0.143354	0.103314	0.178194	0.012554	0.11853	0.165135	0.165002	0.0739499	0.213301
48	0.0197849	-0.0439221	-0.095812	-0.007763	0.0639563	0.0508048	0.0289024	0.141578	0.0874205	0.0679979	0.0491116	0.182705	0.0712103	0.148149
DBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
41	0.088337	0.100271	0.0217054	0.00156	0.027781	0.0628045	0.239702	0.196355	0.117917	0.060595	-0.043026	0.0725869	0.277717	-0.057491
42	-0.077908	0.0830473	-0.055339	-0.027752	-0.119689	-0.021309	0.0831257	-0.043503	-0.060047	0.030799	0.1089197	-6.5E-04	-0.034289	0.101594
43	-0.057205	-0.029033	-0.0726029	-0.202379	-0.050188	-0.067476	-0.013499	-0.16588	-0.106667	0.050134	-0.0298476	-0.071695	-0.031613	-0.02157
44	0.318245	0.0240829	0.0449992	0.0302414	-0.027559	-0.00335	2.2E-04	-0.071012	-0.128611	0.0095457	-0.0802566	-0.057553	0.06399	-0.058821
45	0.192641	0.073737	0.0308645	0.015834	0.0906576	0.054355	0.081732	-0.110432	0.0677397	0.0336221	-0.003798	0.0773847	0.0960854	-0.095821
46	0.1324	0.251087	0.130831	0.004259	0.0635862	0.084166	0.0673515	0.025931	0.1896633	0.176675	0.0789582	-0.086898	0.00273	0.031871
47	0.175365	0.286335	0.124408	0.0915347	0.0837523	0.031023	0.095563	0.0291444	0.0849136	0.112459	0.112949	0.0971517	-0.04505	0.035076
48	0.151022	0.0846092	0.141024	0.110834	0.0462134	0.0374255	0.0734629	0.0497088	0.0758776	0.0455239	0.0282549	0.0229096	-0.036392	-0.014667
DBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
41	-0.06888	0.148271	0.152764	0.167995	0.183368	0.13421	0.160521	0.169435	0.114533	0.0737943	0.095877	-0.030662	0.0292013	0.248073
42	-0.11848	-0.19527	0.1135534	-0.031469	-0.022406	-0.058941	-0.042015	-0.145203	-0.012007	0.09815	-0.021037	-0.040311	0.0436722	0.037843
43	-0.113659	-0.13795	-0.061899	-0.044931	0.0617041	-0.140638	0.043727	-0.060661	-0.057776	-0.024659	-0.054178	-0.153714	0.0672063	-0.004683
44	-0.07302	-0.04314	0.12154	-0.016703	0.008565	-0.131078	0.143312	-0.046121	-0.093166	-0.127959	-0.061178	-0.140459	0.0367887	-0.095797
45	-0.10634	0.149782	0.0996308	0.113852	0.052174	0.0974991	0.0422868	0.010858	0.165697	-0.093155	0.033883	0.140995	0.104579	0.075205
46	-0.02502	0.17889	0.0802919	0.167303	0.052981	0.129813	0.0979335	0.055149	0.108898	0.0518494	0.103732	0.110609	0.104156	0.100131
47	-0.16292	0.062244	0.0344658	0.159447	0.15141	0.170977	0.0949266	0.102351	0.110711	0.149538	0.174052	0.142539	0.123946	-0.030385
48	0.0056411	0.102419	-0.047834	0.0730256	0.0824576	0.119942	0.0097698	-0.030199	0.0482248	0.0728436	0.121152	-0.036163	0.0087142	-0.114876
DBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
41	-0.042019	0.0177808	-0.0740393	-0.040084	-0.0374579	-0.021804	0.0177331	0.096584	-0.110086	0.149628	0.107017	0.125949	0.0508331	-0.0223365
42	-0.06704	0.0236444	-0.120698	-0.100184	0.0573187	-0.11612	-0.078594	-0.005207	-0.114123	-0.055	0.06231	0.158943	0.0434729	-0.018674
43	0.075177	0.0324519	-0.00908	-0.038568	0.0350848	0.106675	-0.151108	-0.005913	-0.168306	-0.04801	0.134191	0.0540874	-0.037799	-0.046269
44	-0.063704	-0.171153	0.0343954	-0.024113	-0.0960812	-0.084087	-0.105134	-0.125051	-0.071177	-0.069507	-0.175599	-0.08419	-0.042066	-0.005826
45	0.0495586	-0.14652	0.174017	-0.199541	0.0699063	0.054304	0.113399	0.206065	0.0959258	0.115142	0.136469	-0.0874637	0.105619	0.0184769
46	0.0389609	-0.095777	0.0810051	0.107164	0.105321	0.144223	0.0835981	0.0403449	0.187484	0.0492027	0.040168	0.042363	0.0889649	0.0656414
47	-0.17153	-0.038273	-0.061454	-0.002849	0.0437699	0.125545	0.119221	0.172258	0.17626	0.136079	0.135309	0.050446	-0.089342	0.12774
48	-0.07987	-0.11393	-7.4E-04	0.006557	-0.07793	0.0956912	0.191762	-0.087061	0.0695886	0.013914	-0.033193	0.0514562	-0.086425	0.01326
DBS	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	
41	0.0022173	0.015782	-0.007599	0.104576	0.0720017	0.177259	0.136068	0.0896557	0.043727	0.119476	0.0996159	-0.034592	0.119273	0.015742
42	0.018077	-0.021079	-0.00915	0.0630132	0.0503025	-0.002242	-0.046841	-0.043308	-0.004472	-0.050107	-0.082201	-0.063399	0.042756	-0.0600788
43	0.017998	-0.027896	-0.05686	0.024262	0.0900519	0.009646	-0.104461	-0.033862	-0.121942	-0.04216	-0.084346	0.0573374	-0.091956	0.0753193
44	0.126235	0.084305	0.011254	-0.029838	0.0021566	0.0416699	0.056464	-0.17135	0.012976	0.031016	-0.035949	0.0077425	-0.013424	0.0596282
45	0.049795	0.0640418	0.0934655	0.109025	0.0588171	0.177924	0.037818	0.093038	0.141309	0.0253556	-0.042714	0.0906572	0.0416748	-9.4E-04
46	0.019533	0.114455	0.123337	0.15944	0.014571	0.092126	0.0992149	0.125078	0.142189	0.120324	0.0675953	-0.0511784	0.129551	-0.047892
47	0.1042	0.137457	0.140476	0.207787	0.110365	0.148477	0.196879	0.195855	0.163083	0.193246	0.101138	0.0711365	0.11245	-0.038715
48	0.0666603	0.158538	0.0351584	0.138927	0.0764174	0.0510857	0.125571	-0.034635	0.075139	0.0321645	-0.076147	0.117583	-0.020728	-1.1E-04

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QBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
41	0.0040095	0.0040088	0.0731179	-0.008807	-0.005007	0.033407	-0.05916	0.314951	0.10473	0.691047	0.130812	0.0460475	0.101325	0.0406269
42	0.138075	-0.016035	0.077602	-0.056326	-0.07127	-0.07127	-0.028127	0.100037	0.0460198	-0.08332	-0.02813	0.0764525	0.0233367	-0.048254
43	0.0059817	0.104119	0.0320938	-0.13351	-0.08704	0.140715	0.0049739	-0.016446	0.0951011	-0.0634	0.11152	0.139757	-0.001293	0.008308
44	0.148843	-0.015911	0.089738	-0.14108	-0.113686	-0.139599	-0.146451	0.0129386	0.0288932	-0.04204	-0.01145	0.110091	0.0024274	0.093179
45	0.0127461	0.081237	0.0484877	-0.07938	-0.058771	-0.039991	-0.014138	0.0363598	0.100411	0.118158	0.148586	0.251393	0.134534	0.120771
46	0.010197	-0.005987	0.0015015	0.126807	0.103258	-0.054071	-0.059349	0.6797866	0.081913	0.12311	0.184713	0.0101671	0.035468	-0.120722
47	0.0499129	0.005498	0.006551	0.186875	0.124617	0.100371	-0.036656	0.006832	0.16232	0.131271	0.155212	0.0466443	0.0413914	-0.028236
48	-0.043736	0.017299	-0.002173	0.0615781	0.0497025	0.009276	-0.071776	0.125335	0.160305	0.105018	0.113248	0.0776287	0.0287647	-0.02105

QBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
41	0.0789314	0.118034	0.0707507	0.125182	0.068596	0.142413	0.076678	-0.009289	0.150269	0.148352	-0.041395	0.0780405	0.10055	0.0635596
42	-0.04365	0.27671	0.193908	0.180904	0.0593173	-0.077672	-0.115459	-0.051335	-0.122867	-0.153455	-0.09157	-0.093907	-0.04433	-0.075876
43	0.059532	0.21213	0.202918	0.197972	0.156288	-0.05926	-0.122908	0.042249	-0.052531	-0.120522	-0.020727	-0.142455	-0.047042	-0.086953
44	-0.00003	0.12187	0.149496	0.156388	0.0650969	0.029831	-0.041165	0.134317	-0.044358	-0.07796	0.032804	-0.08659	-0.020724	-0.077814
45	0.16304	0.166132	0.137185	0.166002	0.221763	-0.084686	0.027997	-0.007684	-0.002232	0.0286816	0.100218	0.0295864	0.139114	-0.015236
46	-0.092211	-0.021975	-0.044305	-0.048532	-0.055704	0.150097	0.0988808	0.180519	0.074514	0.199804	0.118886	0.137021	0.192693	0.0889112
47	-0.167716	0.075761	-0.0121863	0.0090446	0.109407	0.182545	0.130317	0.236559	0.152945	0.156741	0.101186	0.153215	0.0902715	0.109556
48	0.005	-0.012589	-0.00131	-0.047677	0.0993171	0.0476627	0.0367036	0.184597	0.0658841	0.038124	0.0301513	0.0825403	0.132228	-0.004469

QBS	V52	V53	V54	V55	V56	V57	V58
41	0.160383	0.0135871	0.0308088	0.112707	0.127199	-0.027268	0.187051
42	-0.062066	-0.106013	0.0749872	-0.012562	0.0278369	-0.08656	-0.08656
43	-0.061386	-0.155977	0.060489	-0.06307	-0.03396	0.171168	-0.033808
44	-0.028922	-0.056527	0.0511244	-0.007	-0.016775	0.102968	-0.021806
45	-0.028894	-0.03316	0.200869	0.162489	0.2057	0.156019	0.150115
46	0.182297	0.262739	0.044906	0.083109	0.0676646	-0.06175	0.100899
47	0.278375	0.296501	0.124115	0.16799	0.133947	-0.039966	0.0836982
48	0.149946	0.117383	0.0542071	0.106591	0.0137186	0.0800587	0.138076

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OBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
49	CORR	Q46	5.272483	0.407082	0.381548	0.25887	0.160155	0.288155	0.31226	0.318757	0.053574	0.211344	0.357846	0.182305
50	CORR	Q47	0.19278	0.212716	0.263131	0.306419	0.133624	0.280425	0.100018	0.177298	0.023565	0.089196	0.178593	0.253106
51	CORR	Q48	0.105818	0.330314	0.381055	0.3332049	0.1432	0.21342	0.085696	0.281533	0.23369	0.275338	0.159578	0.237325
52	CORR	Q49	0.127219	0.216656	0.337528	0.0610079	0.105179	0.16225	0.193314	0.126215	0.0458612	0.119351	0.16608	0.237325
53	CORR	Q50	0.173306	0.223337	0.25923	0.246998	0.151874	0.213942	0.06186039	0.0932124	0.218261	0.164973	0.0815999	0.18163
54	CORR	Q51	0.134063	0.233532	0.193123	0.158611	0.0600369	0.25121	0.150607	0.170661	0.0555606	0.21238	0.198163	0.186099
55	CORR	Q52	0.154778	0.266216	0.305705	0.190619	0.102193	0.199624	0.298727	0.12444	0.223544	0.229959	0.158492	0.186099
56	CORR	Q53	0.0649296	0.236477	0.193111	0.256918	0.123093	0.205409	0.151854	0.147191	0.277497	0.183576	0.186005	0.187978
49	CORR	Q46	0.24949	0.34153	0.100188	0.304763	0.12523	0.168307	0.229979	0.120679	0.165143	0.190709	-0.02186	-0.138633
50	CORR	Q47	0.263303	0.30520	0.0839136	0.186311	0.133091	0.103288	0.0901336	0.294886	0.185918	0.082975	-0.01344	-0.00702
51	CORR	Q48	0.154708	0.226094	0.2636999	0.0784057	0.205967	0.226112	0.236166	0.150848	0.0970676	0.171346	-0.00607	-0.117535
52	CORR	Q49	0.116081	0.287686	0.1728097	0.170611	0.231632	0.240853	0.202209	0.142941	0.10243	0.04662	-0.01135	-0.096849
53	CORR	Q50	0.0754624	0.182	0.082057	0.149067	0.142412	0.268542	0.141539	0.138361	0.155405	0.10902	0.171125	-0.068343
54	CORR	Q51	0.135677	0.241238	0.139335	0.2286	0.170584	0.188262	0.241197	0.181947	0.056614	0.0902742	-0.103088	-0.017887
55	CORR	Q52	0.199449	0.292488	0.280223	0.410678	0.290566	0.389496	0.284447	0.237735	0.193953	0.0259983	-0.095193	0.079377
56	CORR	Q53	0.17006	0.195573	0.151793	0.392212	0.336523	0.306887	0.137569	0.253192	0.25121	0.134535	-0.0815428	-0.080212
49	CORR	Q47	0.194893	0.136253	0.111748	0.058629	0.0866736	0.230291	0.214641	0.162277	0.161498	0.252145	0.133028	0.279153
50	CORR	Q48	0.138248	0.11582	0.095872	0.087098	0.0249509	0.284045	0.151746	0.122572	0.111981	0.219622	0.174708	0.164271
51	CORR	Q49	0.14732	0.150021	0.049087	0.086158	0.017099	0.0837038	0.0977733	0.226246	0.111918	0.139689	0.177959	0.320264
52	CORR	Q50	0.0273484	0.038674	0.46204	0.002259	0.003551	0.157645	0.166578	0.288135	0.0894718	0.0785891	0.0345193	0.15328
53	CORR	Q51	0.0498823	0.031559	0.180573	0.213777	0.0296191	0.161911	0.0563635	0.16118	0.155672	0.113243	0.0420442	0.232817
54	CORR	Q52	0.138308	0.194473	0.0046958	0.029754	0.088873	0.250971	0.122736	0.145978	0.0649976	0.123199	0.13372	0.200881
55	CORR	Q53	0.1334029	0.0565483	0.131227	0.068269	0.059819	0.236511	0.289738	0.231033	0.178331	0.217559	0.162341	0.298578
56	CORR	Q54	0.242469	0.256527	0.194575	0.0145719	0.117474	0.315985	0.297305	0.0552937	0.124922	0.224671	0.248542	0.268363
49	CORR	Q41	0.108743	0.12465	0.201263	0.0239133	0.198368	1	0.250246	0.320814	0.292911	0.234303	0.26549	0.316411
50	CORR	Q42	0.0560697	0.248077	0.196861	0.196861	0.114546	0.250246	1	0.345667	0.283666	0.234392	0.246328	0.234704
51	CORR	Q43	0.124334	0.049272	0.206413	0.201128	0.157018	0.320814	1	0.295956	0.201109	0.184341	0.245708	0.235288
52	CORR	Q44	0.0312989	0.22553	0.276956	0.156222	0.292911	0.283666	0.295956	1	0.377562	0.192784	0.319959	0.211323
53	CORR	Q45	0.0337052	0.215972	0.176279	0.149193	0.186253	0.234392	0.214392	0.101109	0.377562	1	0.151574	0.253733
54	CORR	Q46	0.147955	0.0800714	0.175546	0.197325	0.141463	0.264328	0.184341	0.192784	0.151574	0.177531	0.217531	0.15025
55	CORR	Q47	0.0161214	0.169571	0.312925	0.115083	0.312925	0.230184	0.245708	0.319959	0.253733	0.217531	0.345925	0.189605
56	CORR	Q48	0.016805	0.172511	0.211139	0.21125	0.146062	0.2461635	0.113335	0.235288	0.125353	0.15025	0.345925	0.127998
49	CORR	Q55	0.273386	0.176351	0.232495	0.255936	0.0751374	0.01611	-0.103688	-0.034325	0.378459	-0.045786	-0.11325	-0.0197221
50	CORR	Q56	0.220898	0.226565	0.147545	0.175695	0.0492446	-0.009871	-0.059373	-0.15946	-0.115375	0.181323	-0.128856	-0.058092
51	CORR	Q57	0.174475	0.208237	0.087494	0.22234	0.123474	-0.04117	0.0451137	-0.061687	-0.089183	-0.010139	-0.042523	-0.077649
52	CORR	Q58	0.2224	0.166331	0.097704	0.093705	0.0947903	0.150732	-0.053698	-0.060859	-0.085143	-0.020588	-0.0784391	-0.0542995
53	CORR	Q59	0.148662	0.242098	0.22573	0.0997821	0.0503559	0.129668	0.0257747	-0.148607	-0.059127	0.0488847	-0.0802981	-0.117452
54	CORR	Q60	0.137689	0.207163	0.0752937	0.148955	0.0549029	0.199714	0.0717483	-0.108159	-0.025283	0.036967	-0.022207	-0.059532
55	CORR	Q61	0.367894	0.041623	0.2251	0.182836	0.0939941	-0.012105	-0.035163	-0.04778	0.0244566	0.0249519	0.0238014	-0.04
56	CORR	Q62	0.233821	0.322834	0.179311	0.221061	-0.044635	0.0027405	0.1112	0.0277147	-0.001957	0.0610177	-0.026031	-0.019331

OBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
49	0.784666	0.035059	0.256014	-0.095909	0.085339	0.738179	-0.025489	-0.29311	-0.03001	0.060364	0.598872	0.056936	-0.81741	0.120897
50	0.0463197	-1.15205	-0.105879	-0.16886	-7.2E-04	0.0404686	-0.735093	0.893163	0.904336	0.472967	0.030661	0.801096	0.013577	0.281352
51	0.0954744	0.615187	-0.26209	0.544595	0.062762	0.984393	0.0629386	0.14652	0.6698903	0.682366	0.0030301	0.2660375	-0.57876	0.056359
52	0.0859762	3.5E-04	-0.05204	0.0046023	0.177205	0.579619	0.113516	0.160923	0.13874	0.0818137	0.151019	0.11715	0.681187	0.743128
53	0.245152	-0.32616	-0.04862	-0.117875	0.099581	0.871719	0.0874774	0.191949	0.0311799	0.6653373	0.080068	0.125353	0.036852	-0.030719
54	0.234437	-0.10763	-0.05351	-0.33364	0.668914	0.10916	0.053276	-0.33657	-0.005948	0.134569	0.169317	0.6293304	0.934386	0.003557
55	0.837829	-0.162062	0.025287	0.0103741	0.893179	0.13563	0.0842755	0.064426	0.552515	0.064413	0.162417	0.0642453	0.930004	0.190496
56	0.19999	0.031853	0.0033951	0.6241279	0.923617	0.903422	0.0626	0.111908	0.106912	0.148448	0.103276	0.148448	0.996429	0.150032
OBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
49	0.075684	0.104429	-0.07227	-0.077601	-0.11956	0.0880297	0.134979	-0.28854	-1.60771	0.285044	-1.54782	0.164278	-0.046946	0.0846796
50	0.070528	0.078361	-0.06152	-0.027277	-0.20755	0.158027	0.022801	-0.10481	0.150448	0.100767	-0.52457	-0.01845	0.036932	-0.118995
51	0.044204	0.042801	-0.04535	0.037211	-0.264333	0.002592	0.0666993	-0.67991	0.083169	0.0859655	0.831886	0.0469028	-0.012618	0.011082
52	0.0977107	0.033956	0.163292	0.0429592	0.097057	-0.020708	0.211362	0.104527	-0.102053	0.042836	-0.03069	0.112061	0.043165	-0.047719
53	0.0977107	0.033956	0.163292	0.0429592	0.097057	-0.020708	0.211362	0.104527	-0.102053	0.042836	-0.03069	0.112061	0.043165	-0.047719
54	0.0794392	0.018844	0.059867	0.0429499	0.141633	0.0949378	0.358428	0.786341	0.067488	-0.72626	-0.028714	-0.51132	0.0095799	0.109934
55	-0.39487	0.027934	0.239182	0.242234	0.15465	0.124016	0.462146	0.120508	0.264133	0.113514	0.131497	0.088459	0.081018	0.046262
56	-0.25264	0.0915516	0.101419	0.104223	0.642343	0.105734	0.379209	0.430548	0.0447293	0.0983101	0.133213	0.137303	0.0278361	0.0657015
OBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
49	0.043844	0.095697	0.050167	0.061575	-0.022491	0.164207	0.227471	0.117209	0.106899	-0.362841	-0.01562	0.0974152	0.750025	-0.072096
50	0.052757	0.022465	0.069344	0.0838283	0.0490203	0.144844	0.1481658	0.122563	0.0925905	0.0542675	0.0919646	0.09894	0.0095925	0.102565
51	0.033629	-0.01986	0.041215	0.068081	0.11503	0.107761	0.078444	0.345594	0.181666	0.0845464	0.594074	0.154361	-0.028094	6.4E-04
52	0.119425	0.024219	0.068593	0.0398679	0.0290202	0.113884	0.0767991	0.109809	-0.00851	-0.004664	0.854311	0.20214	-0.00372	0.0804558
53	0.054008	0.0494399	0.149433	0.13846	0.100354	0.0092171	0.0658487	0.128955	-0.07625	-0.006646	-0.05053	0.11224	-0.07197	0.0256402
54	-0.05086	0.076715	0.177844	0.060065	0.165037	0.101931	0.112466	0.0591065	0.0897087	0.0493013	0.0366838	0.018944	-0.01904	0.10102
55	-0.003074	0.108068	0.151872	0.047739	0.0595933	0.059567	0.052344	0.0826049	0.118047	0.16823	0.033392	0.114426	0.12871	0.02811
56	-0.63089	0.752335	0.142626	0.0940223	0.19698	-0.003329	0.723412	0.134535	0.286002	0.226838	0.103581	-0.078838	-0.087624	0.0718278
OBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
49	0.10303	0.087556	0.177434	0.179655	0.13967	0.184969	0.132391	0.0654337	0.0942639	0.234369	0.11263	0.0264913	0.352748	-0.02085
50	0.141039	0.082589	0.063065	0.0781221	-0.033365	0.155175	0.148322	0.121087	0.120204	0.154575	0.5117092	-0.028745	0.215141	0.0736911
51	0.028437	0.026943	0.040456	0.104226	-0.016468	0.095193	0.122201	-0.026022	0.030371	0.152108	0.0606293	-0.180394	0.018928	-0.095559
52	0.053693	0.053693	0.0748134	0.121459	0.0407266	0.025193	0.115046	0.040677	0.176356	0.157826	0.101134	0.166087	0.621168	-0.055544
53	0.027721	0.0589227	0.151096	0.0340568	-0.034895	0.0239785	-0.02351	0.0163536	0.122129	0.099256	-0.004484	-0.026855	-0.02455	0.318178
54	0.022059	-0.047917	-0.117134	0.0384387	0.036686	0.0959875	0.110421	0.099534	0.0660228	0.044874	0.0889438	-0.04438	-0.041322	0.0542863
55	-0.03613	0.127178	0.097478	0.132196	0.0409053	0.188047	0.137734	0.129836	0.114613	0.111875	0.0615995	0.101768	-0.016514	0.0607226
56	-0.037675	0.027028	-0.008439	0.025815	0.050094	0.118103	0.080363	0.0711009	0.0895772	0.0655719	0.0850722	-0.0144	2.6E-04	

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	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
49	-0544718	-0551462	-0533968	0.112991	0.112488	0.162628	0.0046745	0.11034	0.105103	0.079374	0.182563	0.0792442	0.0423838	-0.013122
50	0.0511465	0.057063	-0.00619	0.0189395	0.022027	0.032807	-0.070575	0.0766683	0.0377645	0.139443	0.0347468	-0.035952	0.0214796	-0.036682
51	0.0122161	-0.088272	-0.149915	0.1112797	0.139647	0.0658841	-0.010574	0.130083	0.111974	0.131041	0.0304441	-0.052679	0.070436	-0.063201
52	-0.066699	-0.032071	0.052445	0.0834867	0.106571	0.177606	-0.029645	0.0200836	0.152612	0.0964689	0.175088	0.055336	-0.004383	-0.00052
53	0.0833604	-0.15265	-0.002834	-0.004281	0.0272322	0.163672	0.0483039	0.0644648	0.0216789	-0.03501	0.0072276	0.0341168	0.0655151	0.0078952
54	0.065534	-0.065034	-0.029037	-0.062266	-0.146226	-0.061195	-0.0358	0.0069393	0.0069393	0.127067	0.0870975	0.0465964	0.032371	-0.024665
55	-0.338943	0.0453825	0.029759	0.004287	0.057204	0.0061001	-0.069864	0.072115	0.0452702	0.0675536	0.104511	0.0349235	0.0312465	0.0430704
56	-0.090873	0.108839	0.0500002	0.13616	0.081302	0.0745227	-0.067424	0.084065	0.0387559	0.100179	0.103805	0.0757079	-0.045186	0.0609272

OBS

	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
49	0.109236	0.0849324	0.0859773	4.5E-04	-0.052378	0.125023	0.146912	0.120354	0.159888	0.128239	0.053028	0.0706744	0.0581691	0.0838863
50	0.125453	0.029164	0.041955	-0.04428	-0.070765	0.126673	0.140421	0.0327448	0.195352	0.105849	0.120106	0.0555417	0.0927904	0.0337557
51	0.123863	0.101956	0.012913	0.0904332	-0.048066	0.0462713	0.0733678	0.0763685	0.187928	0.0792255	0.131469	0.143118	0.160745	0.0751666
52	0.014979	0.004495	0.0321407	0.011432	-0.001455	0.0475052	0.0042168	0.046321	0.131109	0.074104	0.111132	0.255517	0.0717683	0.0591173
53	0.102336	0.058209	0.0453173	0.0627947	0.0816331	0.0256295	0.076594	-0.020113	0.124976	0.165503	0.152097	0.237639	0.272461	0.0331902
54	0.036481	0.040016	0.097701	0.0778531	0.038024	0.0909246	0.0822696	0.0762039	0.147165	0.0646691	0.107104	0.041155	0.0092887	0.0472188
55	0.0259678	5.4E-04	-0.029684	0.0264979	-0.022597	0.180898	0.0865852	0.162401	0.10664	0.096429	0.150947	0.0524704	0.0636682	0.0979969
56	0.092694	0.102613	0.0900763	0.132543	0.0142541	0.164665	0.105664	0.0832833	0.0310416	-0.003516	0.109039	-0.018098	0.051945	-0.040377

OBS

	V52	V53	V54	V55	V56	V57	V58
49	0.100279	0.164811	0.031518	0.191464	0.043982	0.044202	0.133314
50	0.0372457	0.1311487	0.052646	0.185299	-0.068692	-0.068692	0.0822242
51	0.058950	0.0403235	-0.033302	-0.018928	0.0830592	-0.06282	-0.090524
52	0.119822	0.105513	-0.017273	-0.0197623	0.113197	0.0370403	-0.045934
53	-0.0798302	-0.020595	-0.024069	0.0645688	-0.042332	-0.0758333	-0.0660848
54	-0.0663935	-0.0811532	0.0365969	-0.0749505	-0.029367	-0.10287	0.0047363
55	0.118714	0.0786364	0.0242566	0.106238	0.0267114	-0.078427	-0.01139
56	0.109536	0.0826349	-0.00331	-0.0211988	0.0113244	0.0018575	0.0698731

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OB\$	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
57	CORR	Q54	0.37312	0.297614	0.395451	0.254307	0.123999	0.217537	0.245773	0.374924	0.144627	0.287078	0.222247	0.307601
58	CORR	Q55	0.225722	0.303739	0.319504	0.231157	0.203123	0.286853	0.210521	0.334922	0.154514	0.230569	0.32771	0.194646
59	CORR	Q56	0.233668	0.282993	0.212393	0.282633	0.115321	0.263549	0.237116	0.273703	0.25121	0.145605	0.246407	
60	CORR	Q57	0.368346	0.227337	0.260037	0.305288	0.091593	0.150127	0.227472	0.246698	0.11474	0.207953	0.17734	0.272278
61	CORR	Q58	0.254749	0.345128	0.201505	0.31044	0.184804	0.372872	0.286608	0.15874	0.230872	0.357334	0.52498	0.251719
62	CORR	B1	0.077073	0.15816	0.212658	0.096295	0.151414	0.139292	0.0897855	0.101174	0.121895	0.040595	0.0225931	0.0492478
63	CORR	B2	0.14396	-0.12273	0.095083	0.122964	0.111165	0.0548226	0.0698943	0.333443	0.0325963	0.020862	0.0797506	0.0548644
64	CORR	B3	-0.131554	0.071475	-0.172281	0.047655	0.230712	0.0328826	0.0763228	-0.033012	-0.024767	0.132511	0.0431495	-0.023433
OB\$	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
57	0.399607	0.304682	0.20114	0.223028	0.165234	0.0994353	0.26735	0.132179	0.277905	0.225859	0.0978672	-0.138181	0.0114524	0.0521057
58	0.208186	0.264799	0.103081	0.292424	0.229945	0.234841	0.237359	0.234841	0.227556	0.186244	0.119459	0.160694	-0.050106	0.129949
59	0.183588	0.233974	0.312616	0.412474	0.35416	0.35117	0.168854	0.168854	0.257529	0.292665	0.119729	-0.005083	-0.103558	0.0021662
60	0.301813	0.275149	0.150649	0.280412	0.160944	0.148143	0.176709	0.227773	0.240485	0.229793	0.172177	0.192268	-0.016353	0.0248702
61	0.257427	0.336357	0.150244	0.363247	0.247399	0.274235	-0.018794	-0.018794	-0.0592601	-0.171525	0.229793	0.172177	-0.004001	-0.0721404
62	-0.006329	0.095311	-0.043416	-0.117794	-0.033463	-0.011282	-0.01289	-0.01289	-0.0592601	-0.171525	0.229793	0.172177	-0.004001	-0.0721404
63	0.0891092	0.0740378	-0.043416	-0.117794	-0.033463	-0.011282	-0.01289	-0.01289	-0.0592601	-0.171525	0.229793	0.172177	-0.004001	-0.0721404
64	-0.143957	-0.048022	-0.046871	0.0902867	-0.070074	0.146953	-0.013777	0.0808639	-0.009771	0.0802832	0.0136917	0.16766	-0.050202	-0.119137
OB\$	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
57	0.308605	0.287944	0.165978	-0.039795	0.112781	0.299164	0.419342	0.278369	0.169832	0.279901	0.263112	0.337313	0.289173	0.216495
58	0.239482	0.157743	0.0688406	0.183370	0.080204	0.251024	0.268657	0.711063	0.312377	0.229299	0.312865	0.113094	-0.009034	
59	0.214179	0.15835	0.079507	0.183581	0.035805	0.251882	0.271905	0.11507	0.095037	0.210484	0.106071	0.218593	0.17904	0.19375
60	0.267407	0.186729	0.207155	0.024189	0.135056	0.252317	0.239632	0.172495	0.222254	0.158277	0.6478901	0.260024	0.200026	0.071042
61	0.18594	0.239997	0.224406	0.152569	0.100407	0.211226	0.227946	0.1082	0.097316	0.118107	0.239449	0.573643	0.10849	0.071674
62	0.071472	0.0546187	-0.111632	0.056159	0.071221	0.0617828	0.159908	0.0765101	0.011534	0.0012443	0.050119	0.0851034	-0.14429	-0.071871
63	-0.08818	0.0108564	0.17856	0.0483132	0.0736858	0.070909	0.108397	-0.020179	0.027366	0.0661401	7.8E-04	0.535391	-0.004277	-0.101079
64	0.103043	0.0291784	-0.052249	-0.094615	-0.078161	0.0435666	-0.125751	-0.124323	-0.056198	-0.073207	-0.167422	0.0863144	-0.008334	-0.009427
OB\$	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
57	0.213835	0.19617	0.0396311	0.022939	0.0078256	0.205113	0.246766	0.206109	0.105135	0.104307	0.205003	0.189505	0.127998	1
58	0.077042	0.175407	0.403228	0.256404	0.0900708	0.276098	0.276098	0.178475	0.2224	0.148862	0.137689	0.367894	0.238321	0.263985
59	0.141774	0.12257	0.347423	0.165979	0.104411	0.176351	0.276098	0.208237	0.166331	0.242098	0.207163	0.441623	0.322834	0.299668
60	0.0934312	0.32329	0.533034	0.0621497	0.105503	0.232455	0.147555	0.0687494	0.0797443	0.22573	0.0752857	0.2251	0.179311	0.34649
61	0.117697	0.134339	0.177678	0.105095	0.0753804	0.255936	0.175695	0.22234	0.0983703	0.0997621	0.143896	0.182836	0.221061	0.234566
62	0.140463	0.0309192	0.113643	0.120877	0.048801	0.0751374	0.0492046	0.123474	0.0947905	0.0503559	0.0490297	0.040635	0.0509287	0.0509287
63	0.158777	0.091873	-0.093608	0.125122	0.07671	-0.009871	-0.009871	0.041117	0.150732	0.129668	0.0199714	0.121205	-0.005406	0.0964016
64	0.0978541	-0.025994	0.112362	0.0360902	-0.001404	-0.103608	-0.059373	0.0451137	-0.055698	0.0257747	0.0717483	-0.035163	0.1112	-0.104055
OB\$	Q55	Q56	Q57	Q58	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
57	0.263995	0.299668	0.34649	0.234666	0.0509287	0.064016	-0.101055	-0.041533	-0.080131	0.0791552	0.091787	-0.06533	0.0585423	-0.015967
58	1	0.27563	0.132971	0.390918	0.115177	-0.04566	-0.06308	-0.05513	-0.034582	0.040232	0.055129	-0.099389	0.065942	0.038558
59	0.27563	1	0.27563	0.132971	0.390918	0.115177	-0.04566	-0.06308	-0.05513	-0.034582	0.040232	0.055129	-0.099389	0.065942
60	0.132971	0.201973	1	0.246687	0.088576	0.092694	-0.068724	-0.01501	0.076213	-0.024443	0.037951	-0.116216	0.0250452	0.011916
61	0.390918	0.156043	0.246687	1	0.0429047	0.141746	0.012114	-0.094389	-0.0533	0.071256	0.040106	0.0345873	0.20291	-0.089629
62	0.115777	0.0832074	0.008576	0.0429047	1	0.0049955	0.114123	-0.0618352	0.0447291	0.112913	0.012364	0.021364	0.0697537	0.0641386
63	-0.045656	-0.044789	0.023946	0.141115	-0.0049955	1	-0.203784	-0.049977	-0.035911	0.0973333	0.102271	0.0576003	0.0228555	0.0910306
64	-0.06308	-0.037743	-0.006895	0.102114	-0.0049955	-0.203784	1	-0.057956	0.073606	-0.15E-04	-0.036079	-0.114566	-0.136001	-0.064188

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DBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
57	0.1081178	0.0698706	0.0019902	0.0501886	0.0608321	0.0874065	0.229202	0.0776988	0.134837	0.128212	0.0413761	0.0315882	0.140388	0.0336202
58	0.114604	0.029362	0.034812	0.074424	0.167879	0.0952134	0.126125	0.19592	0.154521	0.0498401	0.0151005	0.025132	0.0443547	0.0489578
59	0.123879	0.076318	0.063529	0.0168124	0.0748134	0.073226	0.033325	0.163913	0.095313	0.051342	0.0728215	0.0068048	0.1408003	0.0267367
60	0.0963899	0.081186	0.031761	0.068156	0.003456	0.0316914	0.160174	0.234921	0.0803072	0.0616425	-0.02926	0.0294128	-0.057439	-0.014591
61	0.1029238	0.080937	0.051123	0.0225436	-0.002739	0.1021137	0.1021137	0.171943	0.0890004	0.113088	0.088345	0.047881	-0.012408	0.0626598
62	0.0867687	0.0656452	0.0372612	0.0354705	0.0686833	0.125155	0.152155	0.15707	0.13069	0.162968	0.146951	0.049899	0.330397	0.138324
63	0.0291151	0.0028319	9.4E-04	0.0504436	0.195394	0.166485	0.165549	0.040633	0.0261853	0.106239	0.110487	0.0029723	0.0159229	0.0985553
64	0.0795214	-0.049159	-0.037399	0.0229925	-0.135548	0.0116327	-0.115994	0.122404	0.0849659	0.133246	0.0122489	0.0175791	0.128531	0.0727159
DBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
57	0.116632	0.0396141	0.0239869	0.156571	0.0575802	0.0826236	0.246604	0.161399	-0.015926	0.257128	-0.123767	0.150035	0.0181615	-0.027805
58	0.155287	0.241126	-0.009048	0.04252	0.0572832	0.0826094	0.149163	0.038878	0.147753	0.111622	0.060003	-0.024221	0.0353757	-0.070807
59	0.042011	0.041171	0.0925232	0.0952049	0.100768	0.10301	0.158858	0.169334	0.147834	0.065427	0.059325	0.025341	-0.050192	-0.021555
60	-0.00573	0.0609614	-0.06931	0.00236	0.002873	0.152184	0.152184	0.171943	-0.064908	0.059942	0.028813	0.18393	0.01153	-0.077172
61	0.031354	0.0683329	0.075304	0.054232	0.164136	0.088665	0.171943	0.022078	0.079296	0.032043	0.038358	0.190883	0.112254	0.032515
62	0.133295	0.110315	0.026931	0.140423	0.163026	0.2280801	0.051498	0.0449305	0.1032	0.179256	0.0211363	0.030535	0.168435	0.0356235
63	0.041544	0.046343	-0.052861	0.132517	0.0216651	0.2280801	0.051498	0.0449305	0.1032	0.179256	0.0211363	0.030535	0.168435	0.0356235
64	0.0736389	0.127823	0.156648	0.206829	0.0527717	0.11491	0.0423352	0.115194	0.177414	0.113123	0.404871	-0.075502	-0.022772	0.0242279
DBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
57	-0.04492	0.157372	0.090478	0.0760453	0.102629	0.115104	0.112906	0.171926	0.0901534	0.148534	0.136388	0.185297	0.109295	0.136885
58	-0.02079	0.12979	0.144277	0.202256	0.16836	0.161643	0.105224	0.178669	0.147914	0.0775279	0.0824483	0.0140798	0.0692439	0.119857
59	-0.074955	0.156838	0.0997501	0.251978	0.143169	0.185688	0.117611	0.2073266	0.103086	0.0308601	0.0513664	0.031993	0.0813822	0.105071
60	-0.118057	0.0474712	-0.013203	0.0371119	0.145411	0.0796893	0.0078735	0.503296	0.937104	0.0222988	0.0208363	0.0441179	0.0724698	0.028659
61	0.0522971	0.0916653	0.0802564	0.132049	0.127314	0.107566	0.118671	0.0890711	0.050276	0.0495111	0.0042185	-0.009123	-0.08921	0.106496
62	0.202236	0.174728	0.274867	0.27416	0.282616	0.22389	0.24702	0.264105	0.172992	0.0273176	0.094263	0.087232	0.259452	0.124567
63	0.168551	0.0530935	0.0634641	0.124038	0.061807	0.154895	0.078452	0.0355889	0.149735	0.0706736	0.0107043	-0.04207	0.0371168	0.043365
64	0.0199302	0.0539399	-0.013694	-0.0113	0.029384	0.102753	0.164676	0.152551	0.041817	0.122831	-0.051533	0.0454635	-0.062274	-0.017843
DBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
57	-0.035049	0.0358833	0.0442705	0.017459	0.174255	0.0209377	0.0373833	0.0745951	0.094422	-0.075617	0.0902644	0.127989	0.0738832	0.122279
58	-0.02637	-0.022098	0.0927755	0.065600	0.094474	0.0085622	0.111032	0.215203	0.106066	0.153054	0.123805	0.043566	0.0944808	0.1221073
59	-0.05112	-0.0193	0.135782	0.011023	0.082493	0.0267789	0.119641	0.042492	0.116908	0.085188	0.0896439	0.0071878	-0.085859	0.1499382
60	-0.006564	-0.031591	0.026316	0.110065	0.093179	0.034651	0.0461447	0.0941315	-0.008365	-0.066488	0.118117	0.03327	0.0853588	0.0882162
61	-0.21181	0.095149	0.036817	0.105716	0.0368174	0.146226	0.292624	0.0223286	0.034668	0.118117	0.10245	-0.03515	0.074292	-0.047688
62	0.0610363	0.0895149	0.0928289	0.156075	0.147987	0.240947	0.240947	0.0822817	0.094799	0.203404	0.117619	0.0695666	0.187572	0.316499
63	0.116155	0.0345914	-0.059228	0.071122	-0.032793	0.0041463	0.0812847	-0.063163	0.0060944	-0.063163	0.01178	0.158023	0.0447287	-0.018662
64	-0.094046	0.104646	-0.011244	-0.065695	0.175655	0.047575	0.16374	0.139404	0.141854	-0.128786	-0.121992	-0.134897	0.109273	0.109273
DBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
57	0.0584188	0.0722255	0.169665	0.138536	0.215034	0.0752723	0.0232337	-0.052301	-0.068176	0.0686699	0.0535516	0.0567045	0.130449	0.0902847
58	0.150676	0.179697	0.151951	0.210457	0.0835169	0.169336	0.179414	0.129123	0.142636	0.195841	0.227378	0.0565312	0.0980602	-0.043374
59	0.0487213	0.0496974	6.2E-04	0.021521	-0.003567	0.139862	0.115051	0.128416	0.184787	0.090068	0.108989	0.116038	0.103345	0.0726317
60	-0.00265	0.0251596	0.0695991	0.078184	0.0821937	0.0399834	0.061133	0.035212	-0.031393	0.037354	0.033352	0.0253872	0.0231508	0.0763118
61	-0.0766321	0.139739	0.116805	0.15117	0.0634287	0.131097	0.225782	0.0870959	0.0312902	0.032902	0.0862403	-0.019806	0.0291564	9.7E-04
62	0.159559	0.213427	0.165895	0.066436	0.0572906	0.150319	0.212882	0.129117	0.158076	0.088632	0.095132	0.177033	0.110059	0.115499
63	0.0507708	0.104813	0.105831	0.114162	0.113902	0.0361505	0.0124828	-0.071741	0.105012	0.155083	0.0678095	-0.020672	0.107285	0.115213
64	-0.031624	0.043883	0.0407288	-0.07108	-0.086509	-0.024236	0.10501	0.092107	0.0802876	0.0116479	0.0848550	0.0802356	0.0023879	0.0786233

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OBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
57	-.084819	-.046508	-.016768	.0093309	.0121588	.0332969	-.010525	.0700229	0.152225	0.103597	0.127122	0.157982	.0660848	0.135401
58	-.037158	-.012565	-.013459	.0511947	-.0116768	-.100621	-.004748	0.043168	0.15596	0.175528	0.129563	.0521219	0.084903	.0429614
59	-.056592	.0522349	-.016936	-.0317128	-.029672	.082441	-.072938	-.033528	.0800603	0.042662	0.103748	.0654249	-.117321	.0124941
60	0.0388465	.0520785	.0160419	-.016988	-.034428	.0986136	-.004445	-.066909	.0754903	0.102025	0.14597	0.136318	-.010088	.0259832
61	.0294505	-.006751	0.047503	.0225148	-.033167	.0844079	0.13233	.0024084	.0758886	0.188298	.0614894	.0291667	.0488371	.0449506
62	0.109242	-.003474	0.163337	0.113903	0.135029	-.008167	-.073205	.0853472	0.159467	0.271758	0.194864	0.212746	0.131193	0.189789
63	-.018883	-.001772	.0745101	.0047559	.0486363	0.525744	0.173586	-.007342	.0947922	0.065245	0.101868	.0285602	.0240506	0.096799
64	0.46042	0.136238	.0537729	-.101604	-.125573	-.132699	-.130447	-.015445	-.135495	0.007424	-.0.12166	-.002367	-.0.08547	-.067867

OBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
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57	.0789827	0.177782	0.144072	0.161009	0.073188	.0148673	-.002218	-.035557	.0462285	.0434275	.0047668	.0044804	.0747522	.0468436
58	-.954232	.0178616	-.006383	-.015425	-.042423	0.157711	0.111344	0.139794	.0574121	0.190932	.0054316	0.155021	0.17575	0.130768
59	0.054122	.0095397	-.006909	0.025825	-.003256	0.172299	.0450518	.0787799	.0045352	.0899989	.0718191	.0892769	.0873697	0.101737
60	-.035418	.0510081	.0273804	.0901506	-.0240827	-.011112	-.007184	-.053497	-.049152	.0102641	-4.9E-04	-.031237	-.032898	-.056955
61	.0565987	.0546144	.0177735	.004961	-.105693	0.254747	0.162983	0.174199	.0425064	0.127099	.0360861	.0609425	.0421774	.0195129
62	0.220354	-.039496	0.025273	0.051066	0.145261	0.243376	0.164705	0.112085	0.163579	0.255094	0.246174	.0591672	0.163403	0.223926
63	-.062458	0.164981	0.161404	0.144151	0.181411	.0442106	0.121473	.0492361	.0561269	0.13132	.0759172	.0767585	-.0.00902	0.121585
64	-.077735	-.101019	-.097458	-.006001	-.016595	.0676871	-.013242	.0460819	-.020532	.0174512	0.116997	.0069498	.0321551	-.094178

OBS	V52	V53	V54	V55	V56	V57	V58
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57	0.04871	1.3E-04	0.10802	0.131831	.0.156193	.0720182	0.180772
58	0.18419	0.157298	-.0969371	0.138868	0.119025	.0321251	0.111992
59	-.0345008	.0284741	-.092174	0.039577	0.102198	-.037556	.0656102
60	-.024347	-.0534448	.0539052	.0489567	0.111572	.0866087	0.117657
61	0.186468	0.103354	.0622239	0.16935	0.118295	0.106921	0.219319
62	0.19037	0.142619	.0500522	0.207819	0.178757	.0836659	0.152402
63	0.109742	.0697502	0.12351	0.104666	0.135279	0.211081	0.170041
64	0.145496	.0287453	-.061779	-.076492	.0267348	-.042986	-.0.00332

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QBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
65	CORR	B4	0.0316032	-0.079666	-0.14462	-0.076542	-0.05477	0.014876	-0.161226	-0.021405	-0.0101792	-0.091171	-0.134452	0.051394
66	CORR	B5	-0.085886	0.0349581	-0.08505	-0.025065	0.0710952	-0.0737784	0.0107249	0.0153083	0.030322	-0.079079	-0.063422	-0.066532
67	CORR	B6	-0.1454741	-0.0227492	-0.002728	-0.002048	0.0119355	0.0480213	0.0435066	0.0950566	0.0963281	-0.060609	0.0130564	0.12124
68	CORR	B7	0.1454741	-0.0227492	-0.002728	-0.002048	0.0119355	0.0480213	0.0435066	0.0950566	0.0963281	-0.060609	0.0130564	0.12124
69	CORR	B8	0.0356056	-0.062067	0.0225469	0.0225469	0.0103347	0.0664485	0.1303	0.143394	0.1560621	-0.080306	-0.024108	-0.031916
70	CORR	B9	0.1443404	0.0822185	0.11746	-0.017071	-0.146351	-0.048629	0.0826217	-0.022782	0.0623991	-0.0736754	-0.019553	-0.084815
71	CORR	B10	0.0810947	0.133918	0.231677	-0.022928	-0.072694	0.0288333	0.0032665	0.0196793	-0.016476	-0.013219	-0.041003	-0.062085
72	CORR	B11	0.0824332	0.103744	0.124603	0.0670919	0.146751	0.129618	0.0086757	0.0789977	0.101983	0.110296	0.193773	0.034263
QBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
65	0.046966	-0.059526	-0.094623	-0.132612	-0.066433	-0.095338	-0.111719	-0.044351	-0.154483	0.0765008	0.0457038	-0.056579	0.122965	0.153113
66	0.0495082	-0.094999	-0.11372	0.132612	-0.046286	-0.078021	-0.113328	-0.014841	-0.121568	-0.002447	-0.074982	-0.0273365	-0.0730959	0.103907
67	0.12908	0.095705	-0.046068	0.0842204	-0.007233	-0.031372	0.0601124	0.0582332	0.014261	0.060594	0.021471	-0.0233365	0.0640448	0.365496
68	0.139281	0.0241692	-0.01298	-0.01298	-0.061758	-0.046205	-0.006687	-0.036956	-0.012714	-0.003113	0.0265619	0.179902	-0.026778	-0.031253
69	0.046966	-0.01298	-0.061758	-0.061758	-0.046205	-0.006687	-0.036956	-0.012714	-0.003113	0.0265619	0.179902	-0.026778	-0.031253	0.365496
70	0.046966	-0.01298	-0.061758	-0.061758	-0.046205	-0.006687	-0.036956	-0.012714	-0.003113	0.0265619	0.179902	-0.026778	-0.031253	0.365496
71	0.046966	-0.01298	-0.061758	-0.061758	-0.046205	-0.006687	-0.036956	-0.012714	-0.003113	0.0265619	0.179902	-0.026778	-0.031253	0.365496
72	0.046966	-0.01298	-0.061758	-0.061758	-0.046205	-0.006687	-0.036956	-0.012714	-0.003113	0.0265619	0.179902	-0.026778	-0.031253	0.365496
QBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
65	0.033708	0.0419557	0.0328493	-0.078858	0.120129	0.0291725	-0.055878	0.0331483	0.1253376	-0.112946	-0.036222	-0.032668	0.0639516	0.178326
66	0.074341	0.0690696	-0.098968	-0.045972	0.12982	-0.007908	-0.054034	0.0836094	-0.01444	-0.132875	-0.14024	0.0485952	0.0640761	0.152114
67	0.074341	0.0690696	-0.098968	-0.045972	0.12982	-0.007908	-0.054034	0.0836094	-0.01444	-0.132875	-0.14024	0.0485952	0.0640761	0.152114
68	0.020822	0.102582	0.159339	0.167125	0.0259784	0.0042089	-0.0475189	0.0849374	0.041097	0.035888	0.040991	0.037643	0.036919	0.0082389
69	-0.130285	-0.059311	0.0430601	0.0401117	0.0133978	-0.02189	-0.053519	-0.113292	0.046182	-0.066729	-0.069491	-0.020668	0.120457	-0.073351
70	-0.044771	-0.084164	0.0430601	0.0401117	0.0133978	-0.02189	-0.053519	-0.113292	0.046182	-0.066729	-0.069491	-0.020668	0.120457	-0.073351
71	0.025616	-0.09037	0.065659	-0.037343	-0.015958	0.017912	0.0581533	0.187943	0.0333923	0.139424	0.019446	-0.064152	0.009677	-0.08234
72	0.0693858	-0.10053	0.13478	0.110931	0.0481598	0.0696362	0.0170529	0.0790329	0.154451	0.0238636	0.025161	0.0142017	-0.014751	-0.102118
QBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
65	0.041467	0.0367042	-0.0327	0.0802715	0.0787277	-0.034325	-0.015946	-0.061687	-0.014889	-0.159861	-0.049131	-0.04778	0.0277147	-0.041533
66	0.041467	0.0367042	-0.0327	0.0802715	0.0787277	-0.034325	-0.015946	-0.061687	-0.014889	-0.159861	-0.049131	-0.04778	0.0277147	-0.041533
67	0.032164	0.0468741	0.0031829	0.0701506	0.0783703	0.045786	-0.115375	-0.081683	0.060959	-0.148607	0.108159	0.0244586	-0.001957	-0.080131
68	0.130667	0.11337	-0.04215	0.0728508	0.0783703	0.045786	-0.115375	-0.081683	0.060959	-0.148607	0.108159	0.0244586	-0.001957	-0.080131
69	0.09303	0.0362318	0.04215	0.038019	0.0799587	0.019229	-0.045095	-0.001036	0.020183	0.088847	0.059327	0.0275283	0.0245914	0.079152
70	0.041467	0.0367042	-0.0327	0.0802715	0.0787277	-0.034325	-0.015946	-0.061687	-0.014889	-0.159861	-0.049131	-0.04778	0.0277147	-0.041533
71	0.055185	0.0453245	0.069462	0.032881	0.0288857	0.130911	0.0390463	0.177409	0.022995	-0.017382	0.053532	0.0775364	-0.019331	0.0589423
72	0.0173202	0.0366073	0.114496	0.158086	0.10567	0.10567	0.10567	0.10567	0.10567	0.10567	0.10567	0.10567	0.10567	0.10567
QBS	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68
65	-0.055513	-0.092593	-0.065724	-0.094389	-0.063816	0.0489977	-0.051956	0.427358	0.483532	-0.081596	0.074837	0.005634	-0.057652	-0.032146
66	-0.034582	0.076213	-0.11501	-0.0533	-0.0618352	-0.035911	-0.073606	0.427358	0.483532	-0.081596	0.074837	0.005634	-0.057652	-0.032146
67	0.0460232	0.074443	0.027531	0.0317266	0.0447291	0.073333	-0.51-04	0.483532	0.483532	-0.081596	0.074837	0.005634	-0.057652	-0.032146
68	0.051129	0.0379511	-0.15288	-0.040106	0.112913	0.102271	-0.136079	0.081596	0.074837	0.005634	-0.057652	-0.032146	-0.057652	-0.032146
69	-0.099894	-0.116376	0.021836	-0.0305873	0.0121364	0.076803	-0.115565	0.074837	0.005634	-0.057652	-0.032146	-0.057652	-0.032146	-0.032146
70	-0.065942	0.0250452	0.102769	-0.020291	0.0697537	-0.0228555	-0.136001	0.005634	0.074837	0.005634	-0.057652	-0.032146	-0.057652	-0.032146
71	0.065942	0.0250452	0.102769	-0.020291	0.0697537	-0.0228555	-0.136001	0.005634	0.074837	0.005634	-0.057652	-0.032146	-0.057652	-0.032146
72	0.174604	0.123879	0.0963899	0.102938	0.0861687	0.0289151	0.0792214	-0.122432	-0.051675	-0.0087136	0.105014	0.0948505	0.053112	0.392873

SAS

DBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
65	-120432	0.107205	0.210117	-0.095632	0.079414	-0.0417951	-0.083536	0.0453903	-0.012436	-0.031044	-0.100951	-0.053957	-0.082412	-0.0662819
66	-0.051675	0.155017	0.140756	-0.035125	0.161950	-0.006704	-0.026104	0.0464207	0.023139	0.012288	-0.059501	-0.0406337	-0.089354	0.016555
67	-0.008736	0.157691	0.121562	0.27478	0.163707	-0.070629	-0.010614	0.0563262	-0.005974	0.193577	-0.0321426	0.0195329	-0.0767654	-0.0345042
68	0.105014	-0.042100	-0.041083	0.113664	0.249164	0.142514	0.116046	0.0916687	0.128725	0.113056	0.161373	0.131713	0.062798	0.0911256
69	0.0944505	0.0441003	0.080822	0.0766403	0.186886	0.152254	0.124285	0.0919342	0.166627	0.208151	0.179916	0.0964293	-0.0873424	-0.052841
70	0.0531112	-0.0442018	-0.19324	0.206714	0.008258	0.012928	-0.019428	0.075052	-0.050502	0.091259	0.0017848	-0.0218055	-0.060496	-0.080994
71	0.392873	0.102581	0.025027	0.244748	0.100759	0.190069	0.136845	0.111123	0.0917336	0.144796	0.316842	5.1E-04	0.0434309	-0.050703
72	1	0.0530697	0.0200065	0.107041	0.181732	0.241852	0.232099	0.150235	0.166972	0.129422	0.138918	0.154	-0.0807095	0.153214
DBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65	-0.022843	0.0322772	-0.072804	0.0226595	-0.062801	-0.0701804	0.002032	-0.151183	-0.069848	-0.05264	0.037095	-0.041321	-0.12131	-0.051397
66	-0.044234	0.0218933	0.0393066	-0.024354	0.020387	0.062353	-0.043719	0.0319017	0.0605389	0.038456	0.017701	0.0593725	-0.0892805	-0.060294
67	0.044113	0.0713051	0.0215766	0.116357	0.0559695	-0.0271	0.0664706	0.0346665	0.0077683	-0.060454	0.0184352	0.037479	-0.089183	-0.012515
68	0.172497	0.143104	0.0608562	0.095266	0.203667	0.122912	0.043451	0.129638	0.116823	0.1400476	0.044116	0.0678169	0.210206	0.0355195
69	0.0900927	0.0400667	0.1891619	0.0786767	0.1861767	0.083117	0.0415556	0.0376517	0.137661	0.166145	-0.008234	0.364781	0.190518	0.144549
70	0.076374	0.0395505	-0.052505	-0.25069	-0.022909	0.0719419	-0.151608	0.0188774	0.0431961	-0.055168	-0.050442	0.055013	0.0051716	-0.049786
71	0.0293002	0.0311631	0.028116	0.060805	0.055226	0.0770995	-0.23599	0.0638602	-0.052820	0.0931076	-0.04411	0.114301	-0.063329	-0.021038
72	0.13279	0.176027	0.150523	0.0956346	0.0891423	0.148065	0.135908	0.109159	0.0140971	0.147445	-0.0222	0.145568	0.109499	0.0530277
DBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
65	-0.071736	-0.089044	-0.059121	-0.123437	-0.089393	-0.052023	-0.096606	-0.127516	-0.060733	0.129206	0.11074	0.130019	0.101854	0.144549
66	0.026722	-0.090976	0.0769613	0.003024	0.0960246	0.169556	0.036299	0.0026586	0.0891675	0.131313	0.110871	0.0725672	0.0712839	-0.0960271
67	0.0328499	0.014919	0.120783	-0.055946	-0.060535	0.0625663	-0.090304	0.038029	0.0646351	0.15676	0.157278	0.104507	0.093846	0.112411
68	0.124776	0.230693	0.161838	0.178466	0.107749	0.0408292	0.056228	0.0168631	-0.074199	0.0844092	0.136043	0.056025	0.136035	0.084161
69	0.132507	0.0234147	0.0220606	0.124314	0.0716311	0.0615517	0.0676732	0.15536	0.10099	0.122627	0.195967	0.045338	0.133318	0.067754
70	-0.015339	0.14211	0.169173	0.141277	0.076646	0.12799	0.0903464	0.0692463	0.128902	0.0793047	0.111492	0.0472008	0.282006	0.108528
71	0.0843296	0.078517	0.0396171	0.080526	0.0310218	0.104621	0.11408	0.077345	0.157345	0.146017	0.119229	0.0730782	0.215946	0.128929
72	0.0429731	0.170785	0.0825072	0.15034	0.0433009	0.153185	0.151167	0.162637	0.180018	0.136057	0.13065	0.132154	0.133654	0.188788
DBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
65	0.0799203	0.036037	0.067966	0.105619	0.109319	-0.073042	-0.029652	-0.050728	-0.035181	-0.009672	0.095765	5.5E-04	0.0366945	0.11053
66	0.070376	0.030162	0.05412	-0.05628	0.104166	0.132193	0.07133	-0.068744	0.01-04	0.0425851	0.004957	0.0073819	0.127432	1.3E-04
67	0.009477	0.0459443	0.060842	0.004224	-0.015185	-0.040663	-0.0284	0.112213	0.13645	0.0567285	0.066735	0.037819	0.0595398	0.174059
68	0.032019	0.068414	0.021439	0.0907137	0.11185	0.0368892	0.097717	0.080044	0.0205013	0.1866	0.15251	-0.02302	0.107662	-0.020749
69	0.140478	0.026027	0.021402	0.071399	-0.051083	0.0268186	0.078763	0.126894	-0.0904013	0.083139	0.0301207	-0.02321	0.107662	0.16033
70	0.0969425	0.140476	0.123451	0.133302	0.0144693	0.180425	0.137813	0.109822	-0.074349	-0.033198	0.0568903	0.071938	0.15202	0.130191
71	0.126971	-0.020003	0.00267	0.0937391	0.0904891	0.035721	0.035721	0.0957753	-0.041346	0.097222	-0.008358	-0.073087	0.034987	0.050623
72	0.000898	0.011336	0.164314	0.210691	0.354461	0.179599	0.0946625	0.0628231	0.101642	0.016494	0.106589	-0.072373	0.0661785	0.0875744
DBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
65	0.013693	-0.062876	0.031508	-0.0710821	-0.065743	-0.17919	-0.08467	-0.106467	-0.008459	0.008396	0.0659018	-0.036706	0.0836407	0.037384
66	-0.04076	-0.014687	0.063671	0.0661495	0.030516	0.10404	0.045333	0.018777	-0.069425	0.004708	0.0564807	-0.18251	0.0809872	-0.073284
67	0.036869	-0.030601	0.031926	0.025093	-0.018776	0.121366	-0.00854	-0.023718	0.058279	0.063463	0.020151	0.0319222	0.0621446	0.0803957
68	0.195983	-0.210621	0.045105	0.100231	0.0619807	0.0341265	-0.01371	0.051782	-0.03103	-0.02169	0.009143	-0.0711847	0.0551829	0.051029
69	0.0713201	0.127003	0.324288	0.114641	0.0707959	0.0558840	0.018947	0.016147	0.0544015	0.0590018	0.009281	0.009143	-0.15607	0.144767
70	0.006119	0.0147003	0.004188	0.0649855	-0.0131664	0.110063	0.033725	0.0235788	0.0278925	0.049352	0.009065	0.154146	0.18905	0.0616199
71	0.0826432	0.155852	0.104085	0.114359	-0.0143759	0.038411	0.0178076	0.0226946	0.0344839	0.0662052	0.106146	0.123952	0.0247869	0.0247869
72	0.236102	0.25619	0.13695	0.110519	0.106458	0.0313683	0.122201	0.0366504	0.0679224	0.0861688	0.13291	0.127529	0.131376	-0.041961

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OB\$	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
65	-.061166	0.318039	0.33138	.0847626	.0780122	.0101047	-.182724	-.037747	.0305682	-.152624	.0253276	.0401668	-.045161	-.088714
66	-.0409761	0.275958	0.289911	0.105589	0.122117	-.0654537	-.133751	-.049858	0.123814	-.006919	.0548774	.0336342	-.034631	-.037954
67	-.043181	0.327816	0.592334	.0546689	.0674582	-.036525	-.133751	-.049858	0.123814	-.006919	.0548774	.0336342	-.034631	-.037954
68	-.051171	-.009305	-.007193	.0343465	.0641252	0.129849	0.401388	0.224998	0.10412	.0366165	0.147162	.0672915	0.144952	0.18102
69	.0212773	0.144087	0.144168	.0252241	0.106323	0.479515	0.215447	.0048101	.0629702	.0860965	.0701361	.0216689	-.026707	0.112464
70	-.084395	.0513608	-.0105973	0.113343	.0661853	0.127114	0.127651	.00447348	0.055553	.0076552	0.060086	.0828893	.0073893	.086846
71	-.084996	.0750178	0.121484	0.199455	0.190954	0.143562	0.100516	.0985207	0.153083	0.139184	.0296107	0.125478	-.016495	-.083956
72	0.054984	0.109203	.0708034	0.170102	0.123108	0.207012	0.211157	0.153677	.0894366	0.218597	.0955103	.0765166	0.140533	.0873629

OB\$	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
65	-.095979	0.139567	0.101091	.0562572	0.142858	-.001048	-8.1E-04	-.012067	-.121179	-.193741	-.146034	-.181984	-.220948	-0.03254
66	-.015176	.0619875	.0983146	.0903943	0.143987	0.135499	0.08665	0.100755	.0179745	.0160763	-.014803	-.013784	-.007574	0.118032
67	-.099628	.0191169	0.028512	-.007054	0.070304	0.131046	.085257	-8.6E-04	-.002237	-.006574	-.059972	-.075865	-.129189	.0811976
68	0.160617	.0675577	.0611717	0.109224	0.106112	-.052638	.0814194	-.035336	.0347996	0.121672	.0143605	0.160178	.0454002	0.095697
69	-.019536	0.120891	0.11676	.0252563	0.160195	-.045833	.0214873	.0614832	-0.01787	.0688708	.0306968	.0527842	-0.10091	.0021082
70	0.111325	0.077121	0.11895	.0954111	.080861	0.166457	0.225743	0.145605	.0617474	0.040159	.0215221	-.002595	-.108869	.0524989
71	-.055388	.032275	.0355155	-.002579	-.039967	.0458064	.0873418	.0987405	.0552233	0.140146	.0837067	0.172922	0.160195	0.112429
72	.0663577	0.13812	0.154235	0.13776	.0391418	0.144076	0.186047	0.061983	.0897285	0.178954	0.211263	0.28331	0.309751	0.145461

V58

V57

V56

V55

V54

V53

V52

OB\$

OB\$	V52	V53	V54	V55	V56	V57	V58
65	-.031534	-.010368	0.195143	.0127062	.0177114	.0988738	-.167475
66	-.0870353	0.001136	0.153477	.0499069	.0434142	0.161199	-.060081
67	.0790125	.0626128	0.222563	0.125588	.0490006	.0294763	.0660963
68	.0569676	.0221749	0.100823	-.0125933	0.140124	.0798513	0.104171
69	.0712643	.0014897	.0799557	-.0390863	0.143321	0.104171	0.149006
70	0.136761	0.212142	0.212967	0.290267	0.223596	0.109711	0.149006
71	0.219632	0.18939	.0812968	0.110832	0.180032	-0.0442	.0419997
72	0.300405	0.207494	0.102899	0.12308	0.198054	0.151609	0.149023

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Q05	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
73	CORR	B12	-.032457	-.013191	-.011183	-.043863	-.076209	-.007082	-.031599	-.015058	-.101879	-.022577	-.001846	-.0464037
74	CORR	B13	-.022565	-.094561	-.147779	-.015021	-.006592	-.0052347	-.181111	-.070436	-.056027	-.011777	-.013192	-.029282
75	CORR	B14	-.0627367	-.0531525	-.0135521	-.104866	-.0556067	-.017247	-.099519	-.090385	-.0348963	-.001487	-.076104	-.029716
76	CORR	B15	-.0113344	-.0577559	0.11855	0.209449	-.059519	0.134408	0.067309	-.001311	-.100619	0.105289	0.19335	-.0279775
77	CORR	B16	-.0708258	0.087545	0.16492	0.213576	0.124191	0.040527	0.188773	0.935583	0.657349	0.105289	0.152506	-.017788
78	CORR	B17	0.175187	0.196441	0.278202	0.119095	0.104353	0.998822	0.18491	0.03205	0.970522	0.204009	0.103884	0.103898
79	CORR	B18	0.015161	0.247448	0.179716	-.026685	0.042334	0.133451	0.153171	0.055072	0.0665813	0.0608835	0.103236	0.0272356
80	CORR	B19	0.102792	0.0511535	0.103743	-.009553	0.059976	0.0641234	0.0871464	0.0534292	0.033273	0.108384	0.108384	0.0064996
Q05	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
73	5.9E-04	-.005707	0.096038	0.289377	-.073583	0.285808	0.229206	-.046441	-.095396	-.202454	-.104153	0.044598	-.135002	
74	-.041321	-.052744	0.005708	0.086725	0.017344	-.068556	0.005972	0.177359	-.111262	0.19864	-.095127	-.050751	0.684011	-.152781
75	0.0313643	0.731874	0.0195203	0.13116	0.33308	0.035959	0.0526608	0.060315	0.059099	-.055845	0.163786	0.016786	0.152781	
76	0.156582	0.080597	0.0414616	0.043594	0.018278	0.904764	0.0904764	0.095303	-.52E-04	0.048483	0.167378	0.061671	0.021526	
77	0.0247503	0.026281	0.10061	0.336628	0.523149	0.081733	0.581716	0.117187	0.095303	-.52E-04	0.048483	0.167378	0.061671	0.021526
78	0.227545	0.129004	0.0058323	0.0488235	0.547383	0.0488235	0.0474637	0.153999	0.082135	0.0905003	0.027004	0.051483	0.110981	0.046717
79	0.0559861	0.195006	0.0210321	0.072664	0.975146	0.142948	0.043743	0.029788	0.124699	0.035329	0.0548529	0.064384	0.160502	0.0592007
80	0.1177586	0.118329	0.0202012	0.0419482	0.0497422	0.120143	0.039744	0.0386216	0.066869	0.0320782	0.038451	0.105593	0.102627	0.144165
Q05	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
73	0.142783	0.213527	-.103108	-.169679	0.0421912	-.119474	0.031678	0.052588	0.038238	0.04428	0.08247	0.024069	0.055423	0.058806
74	0.0795318	0.146919	0.12568	-.141767	0.109753	-.115366	0.159713	8.0E-04	0.659661	-.122948	0.03824	0.071149	0.075514	0.044811
75	0.063982	0.125141	0.113486	0.049649	0.10514	0.11327	0.036223	0.090122	0.040098	0.048E-04	0.06255	0.0086903	0.011363	0.021156
76	0.0366789	0.033584	0.021691	0.024258	0.203547	0.074044	0.063444	0.107341	0.0233285	0.0744377	0.02492	0.102425	0.039641	0.065403
77	0.0866582	0.120538	0.137055	0.0759443	0.179594	0.0702719	0.060465	0.0308766	0.040119	0.10565	0.020695	0.051400	0.121071	0.006252
78	0.223058	0.075269	0.08515	0.026603	0.040878	0.0949466	0.287023	0.087892	0.046923	0.103924	0.077322	0.018675	0.103837	0.145317
79	0.081431	0.06468	0.002276	0.058613	0.025315	0.161953	0.122066	0.170914	0.0333835	0.0214986	0.01008	0.0894936	0.079415	0.004163
80	0.062833	0.022741	0.044702	0.006659	0.167817	0.108872	0.0286005	0.161349	0.101961	0.0718598	0.036781	0.0248602	0.076246	0.011988
Q05	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
73	0.083636	0.092123	0.073962	0.145301	0.0439221	0.0835959	-.115205	0.0615187	3.5E-04	0.052616	0.10763	0.162862	0.0031853	0.0890706
74	0.099432	0.117846	0.009831	0.037268	0.059812	0.256014	0.105879	0.026209	0.05284	0.048862	0.07351	0.0285287	0.0053953	0.0019902
75	0.0856608	0.029574	0.0238833	0.0047316	0.007763	0.0595909	0.160886	0.044595	0.046067	0.187875	0.033648	0.013364	0.0241279	0.0501886
76	0.056126	0.079978	0.0620059	0.0910605	0.063955	0.085335	7.2E-04	0.042762	0.162705	0.009581	0.065994	0.0493179	0.0920817	0.0608321
77	0.08522	0.099968	0.0330241	0.143353	0.0508048	0.0788179	0.0404686	0.094393	0.0579619	0.0871719	0.10916	0.03563	0.0903422	0.0874065
78	0.149028	0.11214	0.012477	0.103514	0.0289024	0.0735489	0.0649386	0.049386	0.113516	0.087474	0.053276	0.0842755	0.0626	0.229262
79	0.008308	0.115048	0.137138	0.178194	0.141578	0.029311	0.0893163	0.041652	0.163923	0.0519499	0.033657	0.0764426	0.111968	0.0776988
80	0.006996	0.0736732	0.194528	0.147254	0.0874205	0.03001	0.0904386	0.0669803	0.13874	0.0031799	0.0525215	0.108912	0.13483	
Q05	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68
73	0.029362	0.076318	0.081186	0.080937	0.0650452	0.0028319	0.049159	0.107205	0.155017	0.157691	0.0421808	0.0487093	0.0447018	0.102581
74	0.046412	0.063529	0.014363	0.051123	0.0372612	9.4E-04	0.073399	0.218117	0.130756	0.121592	0.043256	0.0708962	0.019524	0.025027
75	0.034024	0.0016812	0.068156	0.0025436	0.0504426	0.0229225	0.055632	0.095632	0.037155	0.27478	0.113664	0.0766403	0.206714	0.204748
76	0.0167879	0.0778134	0.033056	0.022739	0.0354705	0.195394	0.161958	0.0479434	0.161958	0.163707	0.249164	0.163886	0.0082588	0.100759
77	0.0992134	0.0733526	0.1012137	0.0686833	0.166485	0.116327	0.047841	0.046704	0.070699	0.112514	0.152329	0.0729028	0.198660	
78	0.156725	0.0333525	0.160174	0.222741	0.152755	0.165549	0.095356	0.0285434	0.10611	0.116846	0.124285	0.182369	0.136845	
79	0.19592	0.163913	0.0234921	0.034921	0.157407	0.040533	0.0053903	0.0044207	0.053262	0.0976687	0.0705502	0.0891932	0.111123	
80	0.154451	0.099513	0.0034012	0.0880804	0.153069	0.0267853	0.0049699	0.012436	0.0232137	0.0065974	0.128782	0.166627	0.0754266	0.09171336

OBS	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	C1	C2
73	0.0530697	1	0.555116	0.972645	0.220789	0.147649	0.904016	0.212655	0.230736	0.0490581	0.979311	0.431605	0.134543	0.0276979
74	0.0820066	0.555116	1	-0.022078	0.114029	0.0840137	-0.04976	-0.15808	0.0459109	0.0859109	0.0313889	0.034597	0.0485652	-0.0249774
75	0.167841	0.972645	-0.022078	1	0.0852452	0.2246	0.2246	0.215334	0.160578	0.144457	0.046648	0.0244322	0.141518	0.0669504
76	0.101732	0.220789	0.114029	0.0852452	1	0.299948	0.140935	0.14099	0.223828	0.112077	0.223828	0.112077	0.110519	0.070272
77	0.241852	0.147649	0.0840137	0.2246	0.299948	1	0.126599	0.236498	0.211949	0.201208	0.298499	0.063952	0.0371729	0.159565
78	0.230295	0.0904016	-0.04976	0.297742	0.140935	0.126599	1	0.186116	0.211949	0.203652	0.322478	0.156757	0.1371379	0.284605
79	0.152039	0.212655	0.15808	0.231934	0.14099	0.236498	0.186116	1	0.658051	0.338905	0.360263	0.186599	0.250642	0.206231
80	0.166972	0.0230736	0.074276	0.160578	0.223828	0.215334	0.279919	0.58051	1	0.325544	0.313444	0.165682	0.28483	0.180716
OBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
73	0.101931	0.0439877	0.0462159	0.0687165	0.022501	0.0677047	0.158163	0.12117	0.0336419	0.140148	-0.031787	0.101588	0.162257	0.207699
74	0.0944037	0.0461349	-0.067038	0.140199	-0.025848	0.1338014	0.0622266	0.0623271	0.0347213	0.174203	0.0010062	-0.0702443	0.143253	0.228804
75	0.202136	0.060414	-0.112037	0.110906	0.092406	0.0443784	0.10914	0.036871	0.036871	0.0940321	0.0042101	-0.020659	0.053679	0.056694
76	0.107042	0.05599	0.0204306	0.0934309	0.0807687	0.111556	0.0921823	0.145994	0.0934309	0.0783885	-0.066667	-0.03674	0.144723	0.271938
77	0.262323	0.22006	0.0637857	0.0602546	0.18345	0.241632	0.152691	0.195495	0.0742151	0.240145	-0.09804	0.224548	0.172411	0.179625
78	C.11255	0.251671	0.0930031	0.145813	0.165681	0.226557	0.26976	0.26976	0.27479	0.204677	-0.19042	0.216453	0.164504	0.0015073
79	0.264878	0.230673	0.306273	0.277503	0.303806	0.189014	0.303806	0.299843	0.271436	0.27832	0.702185	0.112824	0.165905	-0.00326
80	0.221128	0.210832	0.206505	0.257037	0.210015	0.118461	0.200972	0.242173	0.267477	0.319751	0.056113	0.0812348	0.16683	0.0602689
OBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
73	-0.14082	0.029086	0.0686447	0.055496	0.020691	-0.043406	1.21-04	-0.056737	-0.008497	0.479479	0.524685	0.445876	0.331739	0.0235595
74	0.069677	-0.03296	0.099992	0.020855	0.030236	0.0596974	0.0023005	0.041684	0.102954	0.338327	0.412906	0.582494	0.331303	0.0598548
75	-0.01167	0.0562339	0.115881	0.0795597	0.0692205	0.166495	0.101749	-0.01312	0.102954	0.068053	0.046495	0.021581	0.0964074	0.0078452
76	-0.032976	0.226339	0.113668	0.152055	0.102448	0.0688812	0.132947	0.037441	0.0709156	0.290131	0.212233	0.119787	0.218639	0.0645514
77	0.132462	0.103649	0.0750357	0.171212	0.185192	0.132964	0.137088	0.134181	0.063346	0.100904	0.146333	0.1346	0.087926	0.107845
78	0.130562	0.180325	0.211155	0.20831	0.129439	0.297993	0.236553	0.235231	0.230448	0.200107	0.214338	0.137373	0.199733	0.113808
79	0.015698	0.382709	0.183262	0.266018	0.19909	0.300576	0.281098	0.261682	0.244563	0.0344856	0.068041	0.109901	0.223319	0.0362224
80	-0.132018	0.281241	0.209458	0.320945	0.243265	0.265204	0.318975	0.253029	0.198385	0.134564	0.0798181	0.105481	0.22018	0.0545633
OBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
73	0.122247	0.0638914	0.099879	0.0644642	0.0600881	0.0839422	0.017177	0.117744	0.143357	-0.064904	0.0573327	-0.031094	-2.5E-04	0.0842699
74	0.138017	0.0624035	0.0869906	0.0948325	0.145085	0.153747	0.0498723	0.0326885	0.109797	-0.19079	-0.039201	-0.106034	-0.063516	0.092515
75	-0.02527	0.0301435	0.0354211	0.0224575	0.145428	0.016854	-0.101735	0.125632	0.150248	0.048439	0.0859356	0.0045388	-0.0495131	0.112817
76	0.196221	0.0602264	0.0867416	0.179525	0.190338	0.016427	0.0380303	0.109087	0.0625481	0.0859592	0.129678	0.129678	0.181546	-0.053393
77	0.159592	0.112521	0.0619802	0.109293	0.27166	0.0987988	0.0938929	0.139278	0.101618	0.072542	0.075581	-0.034283	0.147402	-0.025325
78	0.0695106	0.0429416	0.059425	0.140118	0.0682021	0.105982	0.153724	0.236531	0.137999	0.114918	0.195372	0.247427	0.295353	0.175047
79	-0.15834	0.168449	0.147667	0.217254	0.139258	0.151847	0.13122	0.228621	0.169962	0.090195	0.16205	0.0070225	-0.11638	0.214001
80	0.170239	0.019723	0.070065	0.236915	0.101603	0.0364203	0.0580119	0.270494	0.155539	0.0735589	0.0632313	0.0174504	0.020012	0.232523
OBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
73	-0.0765156	0.0736464	0.0366272	0.1130707	0.0471922	0.1030079	0.221175	-0.070549	-0.11102	0.0695695	-0.034327	0.0723033	-0.055759	
74	0.0965534	0.104499	-0.03274	0.0923194	0.0670994	-0.045196	-0.030633	-0.12214	-0.02363	0.0024913	0.039869	-0.031085	0.092515	
75	0.0898521	0.0968664	0.0550562	0.0842103	0.0530651	0.101943	0.15127	0.0818904	0.038582	0.114512	0.026738	0.179284	0.14776	0.0521015
76	0.0434039	0.14095	-0.026575	0.164418	0.109647	0.152534	0.0926274	0.099201	0.101246	0.037973	-0.00658	0.154343	0.123004	
77	0.15827	0.177933	0.066818	0.0897537	0.0416893	0.102367	0.0792709	0.030259	0.0225442	0.089406	0.11615	-0.06335	0.016945	0.106359
78	0.0700072	0.149413	0.049768	0.216704	0.239011	0.217136	0.227668	0.164016	0.164016	0.248606	0.238002	0.174527	0.102449	0.140138
79	0.17407	0.193714	0.152860	0.0824818	0.0520215	0.254235	0.286648	0.245015	0.252825	0.166187	0.239967	0.251923	-0.075334	
80	0.200055	0.207713	0.195804	0.2113828	0.12342	0.216372	0.239942	0.189662	0.172151	0.221673	0.152683	0.2066379	0.126678	0.0571988

SAS

OBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
73	-0.047038	-0.002166	-0.086135	0.548436	0.573528	0.128651	-0.057273	0.123667	0.124894	-0.779434	0.13589	0.531102	-0.37775	0.045859
74	-0.118571	0.148651	0.114767	0.370693	0.424149	-0.0760072	-0.070222	0.114423	0.072547	-0.029818	0.103323	-0.064841	-0.311897	-0.040465
75	-0.06991	-0.062467	0.170875	0.098812	0.070095	-0.0918889	0.029898	0.0919603	0.141754	-0.060841	0.274626	0.11570	-0.0872346	0.0818846
76	-0.080551	-0.004073	0.0413649	0.196491	0.237767	0.113595	0.173781	0.1445658	0.22769	0.183974	0.221396	0.102594	0.166738	0.199424
77	-0.081835	-0.15614	-0.17914	0.167614	0.131907	0.211584	0.128861	0.166914	0.090432	0.189006	0.103508	-0.0299104	0.0739047	0.1142
78	-0.189346	0.090648	-0.087993	0.17052	0.16837	0.204026	-0.620911	-0.955135	0.161208	0.258815	0.191941	0.189363	0.161312	0.222214
79	-0.224412	0.512483	-0.34844	0.049526	-0.016918	0.194567	-0.075035	-0.274416	0.131232	0.155923	0.165768	0.186353	0.162122	0.309467
80	-0.575975	-0.021222	-0.091467	-0.006032	4.5E-14	0.023847	-0.017151	0.172173	0.173889	0.210128	0.123363	0.142197	0.185444	0.256897
OBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
73	-0.03598	0.145372	0.128305	0.159794	-0.08112	-0.043402	-0.063161	-0.038033	0.0059838	0.372469	0.0944383	0.0777284	0.0551676	0.103163
74	3.2E-04	0.193691	0.159169	0.126527	-0.064346	-0.03284	-0.117697	-0.037353	-0.026219	-0.10506	0.0123503	-0.103241	-0.006302	-0.052679
75	-0.12144	0.137119	0.202554	0.191718	0.107448	-0.091464	0.0257288	0.127595	0.0615921	0.051674	0.0177662	0.078648	-9.8E-04	0.119321
76	-0.022441	0.126507	0.124616	0.146362	-0.070529	-0.09296	0.062368	0.047821	0.0371058	0.0904903	-0.042823	0.131567	0.13041	0.214028
77	-0.07032	0.138179	-0.092768	0.0495564	-0.026636	0.132153	0.168193	0.206953	0.0430774	0.158515	0.136897	0.20753	0.0321542	0.0970237
78	0.209932	0.008611	-0.031485	0	0.0709285	0.2091	0.257181	0.0260334	0.146659	0.236523	0.168929	0.282123	0.157831	0.258969
79	0.10199	0.064949	-0.0256411	0.0409104	0.0420227	0.160812	0.0285931	0.214776	0.146413	0.15131	0.102183	0.184078	0.076383	-0.003129
80	-0.0471599	0.0764584	-0.0121383	-0.0271594	0.0541859	0.156492	0.0300757	0.257808	0.149944	0.151435	0.147288	0.280924	0.12333	0.0162797
OBS	V52	V53	V54	V55	V56	V57	V58							
73	0.069757	0.119923	0.159724	0.155719	0.027436	-0.008892	-0.073824							
74	-0.007265	-0.0128497	-0.0248714	-0.088479	-0.046883	0.122355	-0.032902							
75	0.195511	0.172571	0.199604	0.125496	0.131051	0.111885	-0.025076							
76	-0.083214	0.101698	0.191635	0.119476	0.0307783	-0.000827	0.121812							
77	0.148569	0.194383	0.107196	0.222122	0.166583	-0.051991	0.11165							
78	0.18869	0.173069	0.155742	0.20774	0.247274	0.0836202	0.248078							
79	0.20497	0.168123	0.0937233	0.124726	0.196983	-0.0514965	0.159997							
80	0.263637	0.19644	0.185111	0.181008	0.249266	0.0513667	0.0604282							

OBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
81	CORR	B20	0.140846	0.320195	0.150681	-0.07857	0.10756	0.105183	0.081092	0.114478	0.010705	0.610221	0.918465	0.281686
82	CORR	B21	-0.0455863	0.077732	0.110583	-0.06611	0.189713	0.0840944	0.122925	0.020953	0.732253	0.317539	0.112222	-0.241838
83	CORR	B22	0.0853193	0.098755	0.0490379	0.073519	0.0814374	0.0727576	0.0819598	-0.007486	0.503723	0.020932	0.116746	0.678965
84	CORR	C1	0.1591119	0.080061	0.120495	-0.004651	0.0649949	0.9925385	0.108574	0.9259122	0.125116	0.012036	0.035871	0.655224
85	CORR	C2	0.0652262	0.046038	0.0324037	-0.016489	0.108188	-0.030605	0.1520351	0.0666197	0.0107261	0.101812	0.0550982	0.101059
86	CORR	C3	0.117461	0.0520095	0.16374	-0.040972	0.13737	0.0309533	0.9202137	0.062942	0.0496211	0.156138	0.066548	0.101059
87	CORR	C4	-0.026897	0.0601263	0.0863044	0.0328792	0.203125	0.258692	0.0760278	0.333553	0.20981	0.207535	0.101232	0.101232
88	CORR	C5	-0.016009	-0.025793	0.023465	-0.019402	0.0935656	0.0491385	0.120889	0.055097	0.3323273	0.0856662	0.0620495	0.603545
OBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
81	0.320405	0.070768	0.612055	-0.031199	0.055068	0.535748	0.1313504	0.0425638	-0.007653	0.038624	0.144122	0.184874	-0.001332	0.958005
82	0.0308653	0.127821	0.035199	0.090877	0.190033	0.0768224	-0.028219	-0.18325	-0.029529	-0.023025	0.004404	0.107789	0.0043196	0.685856
83	0.145817	0.065702	0.0294754	0.024831	0.040958	0.0361015	-0.006448	-0.13311	0.053103	0.119977	0.030379	0.0233084	-0.11824	0.538564
84	0.125313	0.172475	0.147549	0.003361	3.6E-04	0.062443	0.037388	0.0502585	0.0249449	0.105507	0.100045	-0.004544	0.0180488	0.091663
85	0.004328	0.575692	2.3E-04	0.045837	0.094064	0.100409	0.139547	0.078726	0.024822	0.514619	0.101232	0.05247	0.0233707	0.12331
86	0.125071	0.661368	0.157473	0.009599	0.017835	0.790494	0.016951	0.0135974	-0.00312	0.274093	0.001435	0.038435	0.001475	0.3000925
87	0.0534189	0.109778	0.0106012	0.129826	0.048663	0.133187	0.0539157	0.058597	0.080662	0.024169	-0.088234	0.0012014	0.073343	0.159882
88	-0.108614	0.0597993	0.613176	-0.037321	-0.11718	0.0433897	-0.036738	-0.029288	-0.030058	-0.014497	-0.08068	0.0406174	0.0101372	0.0275133
OBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
81	0.713267	0.528612	0.051295	0.0572024	-0.14281	0.159513	0.089681	0.0075358	0.0946987	0.0427548	-0.013755	0.140523	-0.045035	-0.094995
82	0.932511	7.2E-04	-0.031646	0.033824	-0.19205	0.0513283	0.099368	-0.001705	0.0588295	0	-0.100044	0.06224	0.045683	-0.116652
83	-0.035955	-0.107296	0.064321	0.0661013	0.0201873	0.1117733	0.0309972	-0.045251	0.2338881	0.0026366	0.030214	0.087966	-0.121708	0.102055
84	0.180134	0.006051	0.039329	0.042161	-0.045725	0.104567	0.169849	0.056266	0.0031822	0.049221	0.113758	0.0075677	0.102094	0.033662
85	0.683388	0.0455003	0.0765252	0.047741	0.0761769	0.009782	0.143512	0.0841307	0.0336059	-0.116683	-0.019296	0.039015	0.036271	-0.085475
86	0.125071	0.661368	0.157473	0.009599	0.017835	0.790494	0.016951	0.0135974	0.0863443	0.0914316	0.0567537	0.088397	0.077908	-0.07205
87	0.159006	0.6647963	0.030867	0.042053	0.040338	0.0898832	0.160492	0.0880359	0.123339	-0.027684	0.019329	0.100271	0.0830473	0.029033
88	0.0416293	-3.8E-04	-0.106133	-0.043004	0.0241543	0.0488358	0.109345	-0.072331	0.1518743	-0.106128	0.0215977	0.0217034	-0.035539	-0.0728029
OBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
81	-0.35226	0.0805412	0.0599309	0.11853	0.079979	0.050364	0.072967	0.082366	0.0818137	0.0405373	0.134569	0.006413	0.148448	0.128212
82	-0.1531	0.0825236	0.0719121	0.165135	0.0491116	0.0598872	0.0030661	0.0030301	0.151019	0.0800868	0.169317	0.163413	0.103276	0.0413761
83	-0.036925	0.021432	0.133277	0.165002	0.182705	0.0598736	0.001096	0.0260375	0.11715	0.125363	0.0296304	0.0645453	0.149099	0.0315882
84	0.021961	0.0250112	0.0093366	0.19499	0.0712103	0.081741	0.0013677	-0.07876	0.0681187	-0.036852	0.034386	0.030804	0.0906429	0.110388
85	0.0276858	0.108101	0.218257	0.213301	0.148149	0.120507	0.0281352	0.05629	0.0743428	0.006557	0.0190496	-0.15032	0.033602	-0.033602
86	0.132455	0.192641	0.1324	0.175365	0.151022	0.075684	0.075028	0.078362	9.7E-04	0.0097107	0.0594337	0.0224437	0.0970826	0.116632
87	0.0261829	0.737137	0.251087	0.286335	0.046092	0.100429	0.0078363	0.044784	0.112754	0.053956	0.0573454	0.101974	0.100431	0.0306141
88	0.0449992	0.0308645	0.0730831	0.124488	0.141028	-0.07227	-0.006152	-0.04531	0.0817922	0.163379	0.0480419	-0.009931	0.0183378	0.0239869
OBS	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68
81	0.0498401	0.051342	0.0616425	0.113088	0.162968	0.106239	0.133206	-0.103144	-0.07388	0.193077	0.113856	0.208151	-0.092599	0.0154796
82	0.151005	0.028215	-0.02926	-0.08345	0.146951	0.110487	0.0122489	-0.108951	-0.059501	0.0321426	0.161373	0.179916	0.0017848	0.146842
83	0.025132	0.0068046	0.0294128	-0.047681	0.049699	0.0297723	0.017391	-0.05967	0.0406537	0.195329	0.151173	0.0964253	0.0218053	0.116842
84	0.0443947	0.148003	-0.057439	0.12408	0.033037	0.159229	0.128531	-0.08244	0.0383534	0.076354	0.062798	0.0073424	0.0960496	0.043309
85	0.0485978	0.0267367	-0.044991	0.0626958	0.138324	0.0985553	0.072759	0.062849	0.161655	0.0345042	0.0911256	0.0522841	0.048994	0.0509708
86	0.155287	0.022011	-0.00973	0.031354	0.18329	0.041544	0.0736389	-0.02284	-0.044234	0.064113	0.172497	0.090927	0.078374	0.0293082
87	0.241262	0.141171	0.060614	0.0683329	0.110375	0.0469431	0.127823	-0.032772	0.0218933	0.0473851	0.143104	0.0850867	0.0309505	-0.051683
88	-0.099048	0.0925232	-0.06931	-0.075308	0.266931	-0.052861	0.152648	-0.072804	0.0393066	0.0215746	0.0688562	0.0191419	-0.065285	-0.028116

OBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
81	0.129422	0.0490581	0.0450109	0.144452	0.112077	0.201208	0.203622	0.338905	0.325544	0.428183	0.428183	0.303057	0.34979	0.216742
82	0.138976	0.0779341	0.0873889	0.026478	0.225461	0.298499	0.322479	0.360263	0.313444	0.303057	0.428183	0.303057	0.34979	0.216742
83	0.154	0.131605	0.091391	0.0244322	0.209291	0.063952	0.156757	0.186979	0.165682	0.303057	0.428183	0.303057	0.34979	0.216742
84	0.0807095	0.131543	0.0465652	0.145158	0.110579	0.171729	0.211379	0.250642	0.28463	0.34979	0.428183	0.303057	0.34979	0.216742
85	0.153214	0.0276979	0.024974	0.096504	0.070272	0.159513	0.286405	0.206231	0.160716	0.216742	0.187945	0.165471	0.229246	0.229246
86	0.13579	0.101931	0.074042	0.262323	0.11265	0.107942	0.262323	0.11265	0.107942	0.262323	0.11265	0.107942	0.262323	0.11265
87	0.176027	0.0430877	0.0401345	0.060414	0.05599	0.22006	0.251671	0.23862	0.210832	0.339898	0.234843	0.162283	0.26912	0.435347
88	0.0150523	0.062159	0.007038	0.112037	0.0204306	0.0637057	0.0938031	0.320143	0.206505	0.324545	0.208883	0.211362	0.458425	0.278853
OBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81	0.38416	0.329898	0.324545	0.295842	0.280843	0.109074	0.226196	0.246982	0.201217	0.279382	0.082648	0.30568	0.207769	0.219487
82	0.265749	0.231084	0.208437	0.173084	0.182749	0.115722	0.126387	0.278305	0.237274	0.225942	0.095682	0.127407	0.287163	0.077965
83	0.14384	0.122281	0.111362	0.116818	0.131921	0.108434	0.126387	0.278305	0.237274	0.225942	0.095682	0.127407	0.287163	0.077965
84	0.19244	0.26012	0.25423	0.32821	0.26782	0.174632	0.167219	0.197034	0.197034	0.197034	0.197034	0.197034	0.197034	0.197034
85	0.220946	0.435347	0.278853	0.280843	0.26757	0.32565	0.101378	0.134787	0.191664	0.0860943	0.116291	0.054463	0.145502	-6.7E-04
86	0.131875	0.1331875	0.260206	0.26757	0.280206	0.149362	0.170652	0.187236	0.195248	0.182724	0.0740696	0.135018	0.17967	0.0946289
87	0.131875	0.1331875	0.260206	0.26757	0.280206	0.149362	0.170652	0.187236	0.195248	0.182724	0.0740696	0.135018	0.17967	0.0946289
88	0.266206	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197	0.371197
OBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
81	0.120332	0.261613	0.185968	0.266056	0.224673	0.343083	0.275606	0.253783	0.22545	0.0541708	0.125725	0.14945	0.0990944	0.121277
82	0.163376	0.214206	0.260811	0.273215	0.283584	0.283084	0.183225	0.209901	0.278207	0.091688	0.159202	0.190281	0.212949	0.141993
83	0.076198	0.26128	0.230206	0.142148	0.118551	0.288939	0.167381	0.110711	0.266665	0.13922	0.172109	0.145778	0.14461	0.060797
84	0.0807339	0.278123	0.25244	0.227871	0.246384	0.280637	0.293103	0.279949	0.172472	0.127094	0.134928	0.129877	0.22824	0.0731661
85	0.158882	0.184385	0.219664	0.192436	0.20763	0.283535	0.23512	0.266568	0.144631	0.121205	0.090613	0.094269	0.13669	0.018174
86	0.0634802	0.263161	0.21233	0.516646	0.301281	0.309211	0.299945	0.184718	0.209762	0.061192	0.0969661	0.182763	0.102707	0.109935
87	0.163226	0.18241	0.279128	0.320128	0.308626	0.360821	0.366378	0.26057	0.198451	0.101726	0.156472	0.233591	0.115748	0.108114
88	0.100893	0.16893	0.231794	0.2358	0.265542	0.278459	0.281782	0.2944	0.19006	0.137862	0.150856	0.104553	0.0567288	0.0585034
OBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
81	0.0667231	0.117309	0.161786	0.146413	0.125236	0.183372	0.253001	0.354545	0.189787	0.202	0.119644	0.0688795	0.0708891	0.228653
82	0.1392071	0.189736	0.074562	0.138107	0.0966521	0.109017	0.127241	0.211304	0.093658	0.053016	0.210227	0.0051223	0.0409637	0.188675
83	0.0732571	0.14779	0.260787	0.27161	0.305486	0.154566	0.147581	0.146319	0.204804	0.0815644	0.080624	0.112584	0.0834602	0.175753
84	0.0496477	0.11365	0.049299	0.160085	0.215163	0.181696	0.169217	0.168519	0.0914634	0.081192	0.071556	0.029659	0.11359	0.53921
85	0.062362	0.068712	0.071681	0.07558	0.267374	0.128883	0.126061	0.0914634	0.081192	0.071556	0.029659	0.050777	0.063857	0.221542
86	0.082308	0.08595	0.220934	0.271987	0.240687	0.196883	0.111997	0.563926	0.142423	0.105566	0.234144	0.005211	0.125599	0.264226
87	0.092331	0.085956	0.201678	0.174765	0.225985	0.174765	0.120165	0.190887	0.0321925	0.0628427	0.0974468	0.144491	0.151137	0.238313
88	0.0192311	0.064126	0.240172	0.173204	0.22525	0.114865	0.134775	0.0203445	0.139456	0.146258	0.0082173	1.7E-04	0.373524	0.373524
OBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
81	0.232572	0.263462	0.26398	0.174396	0.252688	0.172176	0.274347	0.205875	0.269895	0.196225	0.214642	0.185986	0.160949	0.150289
82	0.149796	0.185156	0.163179	0.2784321	0.0607171	0.222244	0.243042	0.234442	0.230173	0.164163	0.111152	0.163086	0.111967	0.0963043
83	0.165605	0.185156	0.0959503	0.172114	0.222244	0.222244	0.243042	0.234442	0.230173	0.164163	0.111152	0.163086	0.111967	0.0963043
84	0.149796	0.185156	0.0959503	0.172114	0.222244	0.222244	0.243042	0.234442	0.230173	0.164163	0.111152	0.163086	0.111967	0.0963043
85	0.17479	0.261282	0.524081	0.207608	0.171044	0.22	0.24311	0.258843	0.215793	0.378612	0.215327	0.293486	0.210593	0.0549408
86	0.245179	0.298664	0.242998	0.179606	0.173259	0.27978	0.295758	0.226869	0.252559	0.174137	0.19564	0.152451	0.0909991	0.061796
87	0.167666	0.233246	0.370197	0.346608	0.258204	0.211177	0.204394	0.298892	0.245086	0.276774	0.32927	0.232506	0.232506	0.130066
88	0.21986	0.253664	0.238391	0.147085	0.194498	0.297308	0.254773	0.254773	0.254773	0.254773	0.254773	0.254773	0.254773	0.174509

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OBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
81	.0993492	.0991027	.0399997	0.104909	0.138598	0.137907	.0937065	.0790723	0.279946	0.279233	0.261077	0.250981	0.148036	0.21027
82	3.9E-04	-.044467	-.007768	0.133271	0.168146	.0730168	0.116371	0.137556	.0967292	0.206255	0.182774	0.207991	0.145098	0.195066
83	.0203086	0.02224	.0259463	0.100875	0.115337	0.103315	.0619153	0.224622	0.171678	0.203216	0.15426	0.163823	.0921139	0.132194
84	0.119154	.0042241	.0639019	0.16401	0.185565	-.004556	.0245481	.0828681	0.21386	0.321308	0.17967	0.208534	0.117235	0.268771
85	.0958779	0.156345	0.127911	.0860887	.0219557	.0149232	.0230163	.0872065	0.178421	0.25439	0.183619	0.159412	0.268808	0.157499
86	0.116117	0.109196	0.0935	0.135447	.0996426	.0236137	.0613351	0.129711	0.194672	0.212094	0.245566	0.127797	0.219022	0.184365
87	0.141475	0.121791	0.154512	0.194196	0.15852	.036481	.0472505	.0562565	0.181904	0.192788	0.189036	0.174402	0.172739	.0827096
88	0.138677	0.124419	0.121869	0.163978	0.142162	-.0933319	.0189901	.0363841	0.154455	0.275905	0.105348	0.122171	0.191863	0.179844

OBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
81	0.181389	0.146142	0.10862	0.131522	0.157001	0.133555	0.116934	0.159885	0.18563	0.235661	0.252195	0.212882	0.133667	.0751542
82	0.113908	.0413787	.0047751	.0058409	-.032266	0.158243	0.181505	0.162076	.0952693	0.262168	0.16048	0.23807	.0338302	0.11029
83	0.128994	0.130339	0.108298	0.10275	0.161406	-.066206	.0092941	0.1614443	0.14288	.0908053	0.094622	0.100259	0.209874	0.15541
84	0.151798	.0470866	0.092215	0.145634	0.204556	0.133293	.0313735	0.139271	.0788157	0.123876	0.268801	0.19804	0.157474	0.155622
85	0.174146	0.124927	0.110644	.0916666	0.121612	0.183195	0.134773	0.147513	.0247764	.0713859	0.191403	0.155764	.0380195	0.193861
86	.0822923	0.134047	0.130452	0.107032	.0936521	0.100209	0.103643	0.189905	0.139198	0.190617	0.125466	0.184022	0.198791	0.103808
87	0.103571	0.174006	0.152438	0.14233	0.111213	0.129315	0.10777	0.198092	0.128505	0.16367	0.1054	0.17945	0.052507	0.142886
88	0.240179	.0424064	.0567036	.0944357	0.159672	0.111771	.0474774	0.149223	.0951066	.0504977	0.223759	0.156972	0.142252	0.109618

OBS

OBS	V52	V53	V54	V55	V56	V57	V58
81	0.145579	0.16693	-.017537	0.122033	0.218546	.0886213	0.197257
82	0.102604	0.196747	0.105236	0.208525	0.16181	-.0210765	0.111406
83	.0752136	0.123374	-.0734377	.0346686	-.0741265	0.109189	0.139892
84	0.115277	0.161908	0.134486	0.197904	0.181588	0.189468	0.113844
85	0.20843	0.28965	0.257199	0.2403	0.281613	0.214808	0.157192
86	0.19112	0.268175	0.150272	0.168161	0.165518	0.127803	0.113104
87	0.130421	0.328074	0.231577	.0.246809	0.244749	.0.174894	0.179199
88	0.115969	0.160842	.0995666	0.183204	0.195767	0.147981	0.185128

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Q05	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12		
89	CONF	C6	.0359137	-.086433	-.016725	-.058557	.0465595	.0344533	.0211895	-.061493	-.040434	-.031254	-.023170	0.113566		
90	CONF	C7	.0321664	-.059168	.092812	-.0297625	0.169992	0.083218	0.203761	-.002111	-.033293	0.104501	0.160815	0.157396		
91	CONF	C8	.0514819	.0567047	0.12383	.0546027	0.199784	.0528873	0.169182	0.070668	0.196399	0.030669	0.103877	0.031028		
92	CONF	C9	0.119442	0.152191	0.267095	0.101258	0.160402	0.140969	0.160502	0.134852	0.085146	0.174332	0.248985	.0806277		
93	CONF	C10	.0366231	0.119016	0.133776	0.135993	0.192201	0.108863	0.234597	-.004236	0.110511	0.174861	0.0526681	-.021877		
94	CONF	C11	.0244726	.0499078	0.057925	0.075925	0.16092	0.105498	.0653303	-.058293	0.155125	0.0199167	0.0628964	0.03196		
95	CONF	C12	.0559096	.0805528	.0758947	.0861838	.0938749	.0927276	0.125656	-3.5E-04	-.00031	.0318956	0.0267097	.0247097		
96	CONF	C13	-.116377	-.054993	-.206675	-.024609	.0975072	-.071105	-.0.02578	-.037836	-.057199	0.135958	.0697144	-.0066149		
Q05			Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
89	-0.03953	.0549947	.0728072	.0356973	-.005998	0.110468	.0485526	0.118905	-.093577	-.009717	-.094785	-.035121	.0856572	.0853723		
90	.0439445	0.100007	.0925228	0.189237	.0332845	.0481314	0.173029	0.140789	-.039291	0.158152	-.009612	.0747667	.0013055	0.106002		
91	-.046639	.0163338	.0406557	.0257572	5.2E-04	.0389539	0.080082	.0385294	0.07185	0.103611	.00959367	0.139387	-.00919	-.0.0011		
92	0.218305	0.342817	.0148147	0.135573	.0551196	0.153294	0.110431	.0976619	0.140706	0.215496	0.109018	.0729698	.0439691	.0184449		
93	0.129956	0.145579	.0402819	.0215193	.0379924	.0130315	.0060113	.0344656	0.142963	.0755663	.0527161	.0984919	0.076859	.0988659		
94	.0517066	.0714687	.0032371	-.019614	-.015528	.0395556	-.000411	.043385	.0046303	0.105486	0.134713	0.109113	0.13015	-.008955		
95	0.090739	.0740259	-.009711	.0026443	.0302787	.0467997	.040366	0.193299	.0288491	.0227373	.034369	.0352783	0.073353	-.070513		
96	-.126316	-.094471	0.075437	-.106825	-.026456	0.13869	.0339028	.0162048	.0268794	0.111819	.0498936	0.153097	.0532695	.0911814		
Q05			Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
89	0.108425	.0533672	-.131646	-.198912	.0274723	.0170337	.0215113	-.058785	.0329847	-.057873	0.160002	0.00156	0.027752	.0207379		
90	.0643604	-.003407	.0808062	.0177725	-.0.01608	.0950519	0.165809	0.116684	0.0252829	.0221638	.0337594	0.027781	-.119889	-.058188		
91	0.0427001	-.012985	-.039907	-.042668	.0061886	0.033617	0.105977	.0025661	0.043508	-.073482	.0738414	.0628045	0.081309	-.067476		
92	0.271257	.0878744	6.136901	.0213052	.0699306	0.129809	0.181417	0.11482	0.231355	.0379879	.0366973	0.239702	.0831257	-.013499		
93	0.129814	.0962108	-.005087	.9844493	.0669522	.0864523	0.202515	0.105895	.0298315	-.003298	.0126233	0.196355	-.043503	0.16588		
94	.0545972	.0333966	.0597338	.0187251	.0526187	.0396094	0.205611	-.054588	.097907	.0755722	0.131513	0.117917	-.060047	-.108667		
95	0.017121	.0279473	.0284112	.0185091	0.148248	0.064423	.0482091	.0130123	.0747697	.0405923	.038408	.0860592	.030799	.0500134		
96	-.059148	.0753316	-.071493	-.015645	.0064949	0.147465	-.096104	-.114644	-.038733	-.019889	.001542	-.043026	.018991	.02598476		
Q05			Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
89	.0302014	0.105834	0.004259	.0915347	.0110834	-.077601	0.027277	-.064643	.0429592	-.018726	.0373031	0.037006	.0609142	.0156571		
90	.027559	.0906576	.0635862	.0631523	.0462134	-.011956	-.0420755	-.0311401	.0497057	.0046515	-.0.00809	-.007506	.0956921	.0578802		
91	0.00335	.043578	.0984168	.0431623	.0374255	.0800297	0.155027	.0863749	.020708	0.072981	.085386	-.005899	-.018143	.0826236		
92	2.2E-04	.081732	.036751	0.09556	.0374259	0.073429	0.109719	.0202891	.0868174	0.211174	0.213362	.085318	.0985333	.0351784	0.046604	
93	-.07012	.0114632	.0725931	.0259444	.0497088	.028854	0.10481	.059302	.077118	0.104527	.0722969	.0787638	.0909419	0.161899		
94	.128631	.0671367	.0759333	.0490136	.0758776	.160771	0.129448	0.026609	.102053	.03264	.0451676	0.035051	0.102096	0.159262		
95	.0095457	.0336281	0.176675	.0812459	.0452239	.0285044	0.100767	.03716994	.0442836	.0309698	0.044	.0914055	0.134214	.0257128		
96	.0802566	-.003798	.0799552	0.112949	.0282549	-.154782	-.052457	-.003533	-.063069	-.076861	-.044415	-.060484	-.055956	-.123767		
Q05			Q55	Q56	Q57	Q58	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
89	-.0.04292	.0952049	-.003236	-.054292	0.140423	-.035517	0.203829	.0226595	-.024354	0.116357	-.059526	.0186767	-.125069	.0688551		
90	.0252032	0.100776	.0161136	0.165026	.0216651	.0527717	-.062801	-.020367	.0595695	0.283667	0.10191	.0282909	-.055226			
91	.0626094	0.14301	-.005734	.0486645	0.208081	.0564838	0.11491	0.062351	-.055271	0.122932	0.083117	.0719419	.0770095			
92	0.149763	0.158754	0.152784	0.167943	0.051498	0.115545	.032352	.0431719	.0664706	0.043461	.0815556	0.015698	-.025599			
93	0.0303868	0.169334	.0176434	0.22076	.0440305	0.001019	0.115194	.0319017	.0734665	0.129638	.0375617	.0158774	.0655602			
94	.0017523	0.147429	-.064908	.0792956	0.1022	.049321	0.117414	.069848	.0465389	.0077683	.0116823	.037564	.0431961	.0552603		
95	0.141522	.0615427	.0519082	.0392043	0.179256	.0264985	0.113123	-.0.05264	.0388056	.0666484	0.140643	.0166145	-.053168	.0931476		
96	-.060003	.0509325	-.0.02813	.0338358	.0241163	-.105667	0.400871	.0337495	0.071791	.0664332	-.044116	-.008234	-.042042	-.104411		

SAS

08S	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
89	0.0956316	0.0687165	0.110199	0.110906	0.0934309	0.0602546	0.145813	0.306273	0.257037	0.295842	0.173084	0.116818	0.39281	0.280555
90	0.0677423	0.0022501	0.025846	0.092406	0.0807687	0.18345	0.165681	0.210015	0.280843	0.182749	0.131921	0.2678	0.276372	0.171725
91	0.1148806	0.0617047	0.0138014	0.0443784	0.111156	0.241632	0.226557	0.189014	0.189074	0.157722	0.108034	0.174832	0.111725	0.101378
92	0.113908	0.158163	0.0622266	0.10914	0.0921283	0.152623	0.260273	0.303806	0.200972	0.236196	0.126387	0.130649	0.167219	0.117125
93	0.189159	0.12117	0.0632371	0.0914895	0.145994	0.154695	0.269176	0.299843	0.20213	0.246982	0.129305	0.22928	0.177034	0.134787
94	0.0160971	0.0336419	0.0147213	0.0336871	0.0983885	0.0742151	0.217179	0.277136	0.267477	0.201217	0.237271	0.150734	0.175542	0.191664
95	0.147645	0.140148	0.174201	0.0940321	0.266667	0.240145	0.204677	0.270832	0.319731	0.297382	0.147791	0.192404	0.0860983	0.196611
96	-0.0232	-0.031787	0.0010062	0.0042101	-0.03674	-0.03844	-0.119042	0.0742185	0.058113	0.082648	-0.053682	0.165365	0.116291	0.196611
08S	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89	0.26757	0.310862	0.491947	1	0.193505	0.962177	0.155867	0.153995	0.245458	0.191102	0.241031	0.0185207	0.0697626	0.0472227
90	0.353065	0.286641	0.17223	0.193505	0.372071	0.262657	0.294882	0.24053	0.194425	0.138095	0.11556	0.158312	0.184708	0.127511
91	0.103068	0.130968	0.16956	0.092177	0.153867	0.168389	0.205999	0.302629	0.18928	0.11097	0.115415	0.225465	0.267536	0.131399
92	0.170632	0.215179	0.152449	0.153867	0.24053	0.26357	0.302629	0.302629	0.349508	0.25652	0.0361342	0.0759207	0.212986	0.148143
93	0.187236	0.235455	0.188289	0.153867	0.24053	0.26357	0.302629	0.349508	0.349508	0.362575	1	0.0621266	0.308988	0.0794816
94	0.195284	0.232284	0.19865	0.245458	0.194425	0.294882	0.218928	0.18928	0.349508	0.362575	1	0.0621266	0.308988	0.0794816
95	0.182724	0.234067	0.172407	0.191102	0.138095	0.134776	0.119042	0.0742185	0.058113	0.082648	-0.053682	0.165365	0.116291	0.196611
96	0.0740696	0.133137	0.156554	0.244031	0.11556	0.156799	0.115415	0.0361342	0.280068	0.621266	1	0.0186095	0.0664979	0.0689804
08S	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
89	0.0109404	0.0673456	0.151237	0.215753	0.256129	0.22555	0.277268	0.233758	0.119869	0.116746	0.163075	0.176012	0.0626022	-0.110382
90	0.212011	0.219977	0.26178	0.324483	0.261692	0.2076	0.12634	0.155188	0.176421	0.008128	0.085384	0.125406	0.0837732	0.0951598
91	0.222126	0.16134	0.10161	0.244069	0.195005	0.153745	0.152298	0.171987	0.12101	0.0793315	0.183402	0.167272	0.165628	0.180402
92	0.062748	0.0934126	0.17067	0.244069	0.133404	0.164848	0.0851063	0.095981	0.155766	0.159553	0.127818	0.0867748	-0.31746	0.114092
93	0.067846	0.325552	0.251087	0.261871	0.152882	0.282575	0.214135	0.193472	0.180899	0.173921	0.201806	0.19859	0.150872	0.140221
94	0.0452843	0.237205	0.203591	0.270342	0.231603	0.251141	0.257318	0.266109	0.187826	0.0858258	0.126633	0.103467	0.003913	0.0081931
95	0.043693	0.20875	0.11164	0.22279	0.24179	0.193436	0.245332	0.255016	0.172409	0.080807	0.144320	0.242145	0.114961	0.100691
96	0.0226837	0.033845	0.067153	0.108193	0.162974	0.142812	0.131128	0.183209	-0.001993	0.038763	0.0836958	0.107879	-0.072869	-0.234108
08S	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
89	-0.14932	-0.18491	0.099807	0.0820149	0.133904	0.113316	0.0340837	0.097715	0.148124	0.146393	0.0224664	-0.023543	-0.0427	0.300056
90	0.029668	0.114621	0.146412	0.193708	0.1923	0.102713	0.147805	0.183123	0.34524	0.119959	0.229016	0.231097	0.0518245	0.148877
91	0.056613	0.034036	0.164466	0.171262	0.1923	0.102713	0.147805	0.183123	0.34524	0.119959	0.229016	0.231097	0.0518245	0.148877
92	0.040287	0.074094	0.093349	0.0367516	0.0514467	0.128647	0.138011	0.179388	0.21785	0.172958	0.0768075	0.0741239	-0.036628	0.222729
93	0.128556	0.050601	0.264882	0.167436	0.246527	0.128647	0.138011	0.179388	0.21785	0.172958	0.0768075	0.0741239	-0.036628	0.222729
94	0.04349	0.120827	0.184368	0.137872	0.247587	0.0648459	0.090278	0.134638	0.148384	0.281458	0.207268	-9.9E-04	-0.0331993	0.189936
95	0.168472	0.174174	0.182187	0.171905	0.214602	0.0609948	0.0546759	0.18472	0.135091	0.164156	0.104913	-0.03977	0.13744	0.0464365
96	-0.101051	0.0752748	0.085408	-0.106214	0.121956	0.0751953	-0.057486	-0.05022	0.0965882	0.149883	-0.013599	-0.077138	-0.012683	0.186136
08S	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
89	0.152991	0.191503	0.232319	0.119717	0.146467	0.144792	0.22631	0.21754	0.185742	0.123083	0.086108	0.217915	0.0720508	0.231007
90	0.228754	0.325975	0.153629	0.0452336	0.0540997	0.158019	0.165689	0.105511	0.145073	-0.02308	0.135327	0.135327	0.0425605	0.11007
91	0.177649	0.320765	0.067272	0.155236	0.145247	0.220156	0.235986	0.208863	0.17196	0.0243977	0.264176	0.136703	0.174679	0.181195
92	0.238895	0.176247	0.118665	0.112084	0.15589	0.18117	0.114352	0.125229	0.119689	0.110202	0.166595	0.118884	0.212534	0.0744711
93	0.238674	0.282795	0.0528409	0.0819693	0.0561668	0.158482	0.184659	0.234574	0.206891	0.040951	0.177432	0.167581	0.281473	0.130091
94	0.128701	0.181407	0.081105	0.12441	0.0740528	0.252101	0.212127	0.212126	0.215318	0.052482	0.310543	0.169274	0.151326	0.199099
95	0.122047	0.160494	0.141378	0.113578	0.116017	0.146017	0.157683	0.101162	0.0955882	0.167532	0.0878099	0.0932715	0.174789	0.190467
96	0.0473311	0.11494	0.0787134	0.0615921	0.0572718	0.164113	0.141063	0.141063	0.187692	-0.0955905	0.157867	0.132516	0.0498563	0.119467

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OBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
89	0.213934	0.14164	0.107541	0.0896113	0.138754	-0.141811	-0.052251	-0.043052	0.151028	0.160916	0.107041	0.096089	0.086631	0.0918483
90	0.0031953	-0.12006	0.08343	0.0703188	0.0555005	0.0346097	0.04289	0.0540938	0.146123	0.308064	0.2368	0.13084	0.166453	0.222229
91	0.132495	-0.04336	0.110678	0.0773194	0.106686	0.0276082	0.0897827	0.045543	0.355517	0.237281	0.091212	0.0740852	0.165021	0.220324
92	0.0232231	0.082606	0.102762	0.177961	0.14631	0.121124	0.00135	0.0976548	0.0533231	0.084446	0.139974	0.085469	0.208413	0.260904
93	0.185821	0.0733716	0.0371429	0.16216	0.106493	0.0354132	0.096303	0.0843505	0.119054	0.114286	0.092625	0.085666	0.0853078	0.217841
94	0.261038	0.095817	0.0261455	0.0632622	0.0814845	0.049611	0.0906163	0.0646766	0.042574	0.231368	0.0807988	0.0826952	0.121826	0.253041
95	0.145444	0.0429409	0.064675	0.0423121	0.121022	0.0435052	0.112589	0.315316	0.153872	0.261798	0.187827	0.130063	0.0161929	0.0994023
96	0.493745	0.214016	0.0578869	-0.032511	0.0051644	-0.163145	0.0219159	-0.178942	-0.025986	0.384063	-0.071176	-0.047236	0.0898013	-0.046374
OBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
89	0.0719682	0.134415	0.135761	0.108595	0.137585	0.108192	0.00615	0.133596	0.0649407	0.327497	0.150809	0.0728827	0.0508569	0.0243902
90	0.292419	0.133919	0.030657	0.0226329	0.170886	0.179937	0.153838	0.257877	0.146776	0.328873	0.219199	0.247142	0.157414	0.128938
91	0.229775	0.078509	0.0681256	0.046008	0.130980	0.218893	0.203176	0.131629	0.086603	0.17597	0.238282	0.115673	0.178299	0.198415
92	0.0633359	0.114017	0.0286779	0.037286	0.106401	0.0595757	0.004194	0.030102	0.0812372	0.172761	0.113962	0.151879	0.053102	-2.9E-04
93	0.129615	0.0983754	0.0644892	0.095739	0.0910609	0.15855	0.102646	0.109394	0.11396	0.208363	0.132274	0.186212	0.18045	0.111276
94	0.130223	0.189117	0.0273377	0.0511634	0.118956	0.205815	0.188976	0.10697	0.010336	0.029738	0.14936	0.0815117	0.115693	0.0569126
95	0.090979	0.049581	0.0623466	0.0905517	0.0564827	0.075165	0.0036738	0.100265	0.095033	0.105449	0.104481	0.154157	0.167662	0.062055
96	0.018567	0.073523	0.0736447	0.0422314	0.0847018	0.0100165	0.0019405	0.0752091	-0.077984	-0.127982	0.0059734	-0.109986	-0.050033	0.0086397
OBS	V52	V53	V54	V55	V56	V57	V58							
89	0.102924	0.113961	0.0620759	0.161874	0.136244	0.0353175	0.0966808							
90	0.127866	0.158414	0.116582	0.236	0.184247	0.136421	0.168103							
91	0.162882	0.205317	0.0926743	0.291711	0.234663	0.0013226	0.165333							
92	0.110405	0.114588	0.0521677	0.0426639	0.0810151	0.0301032	0.188736							
93	0.105406	0.16361	0.0659932	0.17763	0.160167	0.037504	0.233059							
94	0.124282	0.141574	0.120217	0.162304	0.195509	0.0845221	0.169956							
95	0.126156	0.18645	0.0811232	0.159481	0.0680358	0.160029	0.111949							
96	0.0467795	0.121734	0.0484828	0.0930081	0.0812448	0.0531656	0.023369							

SAS

V37

V36

V35

V34

V33

V32

V31

V30

V29

V28

V27

V26

V25

V24

OBS

89 0.213934 0.14164 0.107541 0.0626113 0.138754 -141811 -055251 -043052 0.151028 0.160916 0.107041 0.096089 0.086631 0.0918483
 90 0.0031953 -0.02006 0.008303 0.0701188 -055005 0346897 0.042189 0.040038 0.146123 0.30064 0.15368 0.13084 0.166453 0.222259
 91 0.132465 -0.34356 -110678 0.0771194 0.100685 0276002 0.0497827 0.0453503 0.355517 0.237281 0.232281 0.0991212 0.0740052 0.169021 0.220324
 92 0.0232231 0.082606 0.102762 0.177961 0.14631 0.131124 0.00135 0.0975508 0.0832231 0.084446 0.139974 0.0895469 0.0808413 0.260904
 93 0.105821 0.073716 0.0371429 0.16216 0.106493 0.054112 0.099303 0.083502 0.119054 0.114286 0.092625 0.089566 0.0853078 0.217841
 94 0.261038 0.095817 0.0261453 0.0635822 0.0814845 0.049611 0.0906163 0.0646768 0.0402574 0.231368 0.0807988 0.0826952 0.121826 0.253041
 95 0.145144 0.0459409 0.064675 0.0423121 0.121022 0.0435052 0.112389 0.315316 0.153872 0.261798 0.187827 0.130063 0.161929 0.094023
 96 0.495745 0.214016 0.0570869 -0.032511 0.0051644 -163145 0.0219159 -178982 -0.025986 0.0384868 -0.07176 -0.047236 0.0898013 -0.046374

OBS

V38

V39

V40

V41

V42

V43

V44

V45

V46

V47

V48

V49

V50

V51

89 0.0719682 0.134415 0.135761 0.108595 0.137585 0.108192 0.00615 0.133596 0.0649407 0.0327497 0.150849 0.0722827 0.0508569 0.0243902
 90 0.252419 0.113359 0.0380657 0.0226329 0.170888 0.179937 0.153838 0.257877 0.146776 0.228973 0.219199 0.247142 0.157414 0.128938
 91 0.229775 0.027859 0.0683256 0.0480808 0.130988 0.218893 0.203176 0.131629 0.0896203 0.171597 0.258242 0.115673 0.178299 0.198415
 92 0.0633359 0.114017 0.0286779 0.0377286 0.106601 0.0595757 0.16415 0.030182 0.0812376 0.142761 0.113962 0.151879 0.053102 0.28E-04
 93 0.129615 0.0983754 0.0864892 0.057739 0.0910609 0.15855 0.102646 0.109394 0.11396 0.208563 0.152274 0.186212 0.188045 0.111276
 94 0.180223 0.0189117 0.0273377 0.0531634 0.138956 0.205815 0.180976 0.10697 -0.10336 0.0297538 0.14936 0.081517 0.115693 0.0569156
 95 0.0490979 0.0549581 0.0623066 0.090517 0.0556427 0.075165 0.0856738 0.100265 0.0495033 0.105443 0.104481 0.154157 0.167662 0.062055
 96 -0.018567 0.0735523 0.0736447 0.0422314 0.0847018 0.0100165 0.019405 0.0752091 -0.077984 -0.27982 0.0059734 -0.109986 -0.050833 0.0086397

OBS

V52

V53

V54

V55

V56

V57

V58

V59

V60

V61

V62

V63

V64

V65

89 0.102924 0.113961 0.161874 0.1620759 0.136244 0.0153175 0.0966808 0.127866 0.158414 0.116582 0.184247 0.136421 0.128103 0.168453
 90 0.127866 0.158414 0.116582 0.184247 0.136421 0.0153175 0.0966808 0.127866 0.158414 0.116582 0.184247 0.136421 0.128103 0.168453
 91 0.162882 0.249817 0.0926743 0.0926743 0.291711 0.234663 0.0013256 0.188736 0.165333 0.188736 0.165333 0.188736 0.165333
 92 0.110405 0.114588 0.0521577 0.0626639 0.0810151 0.0301852 0.037504 0.233059 0.169956 0.169956 0.169956 0.169956 0.169956
 93 0.105406 0.16361 0.17763 0.0659932 0.17763 0.17763 0.17763 0.17763 0.17763 0.17763 0.17763 0.17763 0.17763 0.17763
 94 0.124282 0.141574 0.162304 0.120217 0.162304 0.162304 0.162304 0.162304 0.162304 0.162304 0.162304 0.162304 0.162304 0.162304
 95 0.126156 0.18645 0.159481 0.0811232 0.159481 0.159481 0.159481 0.159481 0.159481 0.159481 0.159481 0.159481 0.159481 0.159481
 96 0.0467795 0.121734 0.0930081 0.046828 0.0930081 0.0930081 0.0930081 0.0930081 0.0930081 0.0930081 0.0930081 0.0930081 0.0930081 0.0930081

QBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
97	CORR	C14	0.148961	0.116174	0.259852	0.754963	0.0436416	0.154452	0.152836	0.128311	-0.027288	0.911709	0.181911	0.090702
98	CORR	C15	-0.023633	-0.0217953	0.115032	0.0616032	0.141382	-0.036375	0.107211	-0.019835	-0.051834	0.0585028	0.168525	-0.061883
99	CORR	C16	-0.104777	-0.092289	-0.09498	-0.023805	0.0419602	-0.026132	-0.009429	-0.089616	0.0027765	0.148516	-0.012249	-0.012249
100	CORR	C17	-0.00794	-0.004034	0.0034532	-0.004532	0.214971	-0.015459	-0.019709	0.0378816	-0.138663	0.0761243	-0.113209	-0.113209
101	CORR	C18	0.15501	0.101934	0.151154	0.18102	0.147612	0.162492	0.189152	0.136675	0.091774	0.104229	0.167162	0.0921007
102	CORR	C19	0.0954062	0.086162	0.079063	0.110379	0.114329	0.0571887	0.166827	0.0631355	0.105809	0.200077	0.16438	0.0394078
103	CORR	C20	0.158218	0.10514	0.130435	0.0931697	0.0884692	0.192818	0.2550156	0.0877913	0.118066	0.19819	0.28649	-0.057046
104	CORR	C21	0.126712	0.0842891	0.137557	0.0444746	0.193286	0.208925	0.125743	0.071595	0.109888	0.190561	0.263507	0.004657
QBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
97	0.163062	0.20784	-0.0206	0.0998822	0.0671361	0.0272099	0.122431	0.0720360	0.0284738	0.012166	-0.019756	0.0389261	0.0274205	-0.032907
98	0.026318	0.0371933	0.0191073	0.007881	0.0361311	0.0548045	0.0550135	0.0720363	0.0284738	0.012166	-0.019756	0.0389261	0.0274205	-0.032907
99	-0.146985	-0.076176	-0.099703	0.0022289	0.0437351	-0.013676	0.0550135	0.0720363	0.0284738	0.012166	-0.019756	0.0389261	0.0274205	-0.032907
100	-0.126195	-0.020635	-0.129611	-0.074397	-0.021652	-0.050508	-0.019707	-0.013676	-0.050508	-0.019707	-0.013676	-0.050508	-0.019707	-0.013676
101	0.176136	0.157999	0.234961	0.210851	0.0976299	0.0653267	0.137758	0.059762	0.110603	0.0431309	0.112764	0.0120634	-0.002984	-0.042849
102	0.128938	0.164931	0.0563353	0.122992	0.0341594	0.179024	0.195652	0.136109	0.054767	0.18252	0.0079084	0.056594	-0.010571	0.170954
103	0.152202	0.173732	0.048264	0.152983	0.0336476	0.176297	0.128255	0.0686923	0.0710066	0.0925082	-0.010081	0.0640494	-0.073518	0.210808
104	0.0923192	0.218407	0.0652925	0.100307	-0.0104263	0.213299	0.169669	0.0633632	0.0451942	0.0802859	-0.095914	0.0385866	-0.090552	0.23365
QBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
97	0.015591	0.092465	0.230377	0.0604673	0.0551403	0.1378	0.0950547	-0.02028	0.062311	0.106011	0.0619406	0.0725869	-6.5E-04	-0.73695
98	-0.038672	0.040103	0.102181	0.079982	0.121404	0.093345	0.0452944	0.194824	0.0866161	0.006114	0.0163387	0.0272737	-0.034299	-0.031613
99	-0.035321	0.177365	-0.025609	-0.11999	0.207582	0.0245975	-0.053109	0.092425	0.046123	-0.179084	0.028811	-0.057491	0.0187594	-0.021157
100	0.052711	0.025278	0.021696	0.036183	0.0461925	-0.031344	-0.044431	-1.3E-04	-0.022616	-0.137385	0.0884362	-0.046888	-0.011848	-0.112659
101	0.031961	0.040316	0.0033036	0.0599843	0.008458	0.125613	0.105846	0.204462	0.115765	0.107985	0.095782	0.148277	0.019527	-0.137943
102	0.162403	0.116826	0.135009	0.007302	0.002407	0.0182409	0.254899	0.154772	0.175927	0.134623	0.0817443	0.152764	0.0155534	-0.061899
103	0.124847	0.125556	-0.041995	0.0587916	0.120641	0.0586528	0.251404	0.182687	0.126691	0.20371	0.0488731	0.167795	-0.037469	-0.041934
104	0.0026633	0.165214	-0.044534	-0.041081	0.152222	0.0036556	0.210559	0.129639	0.104026	0.154818	0.0928861	0.183368	-0.024406	-0.0617041
QBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
97	-0.057553	0.0773897	-0.086498	0.071517	0.0729896	0.164278	-0.041845	0.032478	0.112061	0.0468381	-0.01305	-0.026877	0.0653853	0.150035
98	-0.06359	0.064034	-0.040212	-0.043509	-0.036392	0.1406946	0.036932	0.012047	-0.043165	0.0456961	0.0366994	0.016557	-0.0282819	0.0181615
99	-0.058821	-0.095347	0.0318771	0.0350976	-0.014667	0.086796	-0.019995	-0.011082	0.0499211	-0.089205	0.0522085	-0.075259	-1.4E-04	-0.027005
100	-0.067342	-0.106534	0.042502	0.116202	0.0056411	0.0307999	-0.041013	-0.044204	0.0499211	0.0794274	0.0794392	-0.039587	-0.052264	-0.034492
101	-0.044314	0.1497402	0.17889	0.0962284	0.102459	-0.072514	0.156699	0.042881	0.123526	0.17567	0.17567	0.027934	-0.0915516	0.157372
102	-0.112154	0.0996308	0.0802919	0.0364658	0.047834	0.0801887	-0.011266	-0.043435	0.037174	8.6E-04	0.0589867	0.239182	0.101419	0.090478
103	-0.16703	0.113852	0.167303	0.155447	0.0730256	0.118805	0.116205	0.037211	0.0587523	0.10448	0.0429499	0.242231	0.104223	-0.0760453
104	0.0085865	0.0352174	0.0852081	0.151411	0.0824576	0.157942	0.0954015	0.0264333	0.0416649	0.081213	0.141633	0.15465	-0.042313	0.102629
QBS	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68
97	-0.024221	0.0255341	0.144393	0.194083	-0.003136	0.165916	-0.075302	-0.041321	0.0593725	0.037479	0.0678169	0.364781	-0.055013	0.114301
98	0.055751	-0.050192	-0.01753	0.112294	0.168435	0.13466	-0.002772	0.102331	0.002865	-0.089183	0.210206	0.194518	-0.011716	-0.003329
99	-0.070807	-0.021555	-0.07172	0.0325215	0.036522	0.052935	0.024272	0.054397	0.0060594	-0.12515	0.055795	0.144549	-0.09786	-0.021038
100	-0.12979	-0.04955	-0.18057	0.052291	0.168751	0.191912	-0.071736	0.028499	0.124716	0.132587	-0.08139	0.0843296	-0.01539	0.0843296
101	0.12979	0.156838	0.0474712	0.0916653	0.174723	0.0534935	0.054939	-0.089004	0.090976	0.040419	0.230693	0.024147	0.10211	0.0765817
102	0.146217	0.097501	-0.113203	0.0802568	0.278861	0.162308	-0.059121	0.097421	0.128785	0.161838	0.0220606	0.169173	0.0394171	0.0394171
103	0.202276	0.251978	0.132049	0.123049	0.278861	0.162308	-0.059121	0.097421	0.128785	0.161838	0.0220606	0.169173	0.0394171	0.0394171
104	0.168336	0.143169	-0.145411	0.127314	0.202616	0.1061807	0.029384	-0.089393	0.0960246	-0.006235	0.107749	0.0716311	0.076846	0.0810216

OBS	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	C1	C2
97	0.149560	0.101588	0.070244	-0.020659	0.144723	0.224548	0.183535	0.112824	-0.081234	0.308568	0.127407	0.06798	0.051463	0.147201
98	0.109499	0.162257	0.143253	0.053379	0.115235	0.172411	0.164554	0.112905	0.16683	0.207769	0.071163	0.0402306	0.115502	0.17767
99	0.042077	0.207699	0.228080	-0.066694	0.271938	0.179625	0.0015073	-0.003926	0.002689	0.219487	0.077965	0.103482	-6.7E-04	0.0965209
100	0.042977	-0.010882	0.006967	-0.001167	0.032916	0.130369	0.103564	0.0615698	0.132018	0.202332	0.163376	-0.078198	0.0807339	0.158838
101	0.176785	0.029665	0.003296	0.05622339	0.226317	0.103649	0.180325	0.382709	0.281241	0.261613	0.214206	0.286128	0.278123	0.181305
102	0.0825072	0.0686447	0.009992	0.145581	0.113668	0.0755037	0.211155	0.183262	0.209458	0.185968	0.268811	0.230206	0.252288	0.196664
103	0.15034	0.0057498	0.020855	0.095597	0.152055	0.173212	0.20831	0.286018	0.320945	0.226056	0.273215	0.142148	0.227871	0.199436
104	0.0433009	0.029691	0.0303236	0.0692205	0.102448	0.185192	0.129439	0.19909	0.324265	0.224673	0.283384	0.118551	0.246384	0.20763
OBS	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
97	0.1035016	0.0947842	-0.005636	0.185207	0.158312	0.102717	0.275465	0.0759207	0.131872	0.119806	0.186095	1	0.160997	0.179393
98	0.1870564	0.17727	0.0991021	0.0497026	0.144708	0.267341	0.074066	0.212986	0.308988	0.282254	0.0664979	0.160937	1	0.178604
99	0.006819	0.192260	0.0886066	0.072227	0.127511	0.113399	0.171665	0.148143	0.0794816	0.350619	0.0685804	0.179393	1	0.178604
100	0.0834802	0.163226	0.106893	0.109404	0.212011	0.282126	-0.062746	0.067846	0.0452843	0.0543693	0.0226837	0.189333	0.296867	0.3658
101	0.263611	0.10241	0.16893	0.0673456	0.219977	0.16734	0.0934126	0.325552	0.237205	0.20875	0.0933845	0.201504	0.0761187	0.237423
102	0.121233	0.231794	0.231794	0.151237	0.26178	0.10161	0.17067	0.251087	0.203591	0.13164	0.0667153	-0.043099	0.0895498	0.0622818
103	0.316646	0.291278	0.2356	0.215753	0.324483	0.204465	0.204465	0.261871	0.270342	0.22279	0.108193	0.0624175	0.129293	0.172557
104	0.301281	0.308626	0.265542	0.256129	0.261692	0.195005	0.133404	0.152882	0.231603	0.24179	0.162974	0.0319308	0.15821	0.141738
OBS	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
97	0.109333	0.201504	-0.043099	0.0624175	0.319308	0.0449539	0.110195	0.077958	0.127876	0.134812	0.0832535	0.112703	0.0260574	0.103123
98	0.296867	0.076187	0.0895498	0.122923	0.15821	0.11362	0.172345	0.153453	0.0921186	0.0878718	0.191559	0.234812	0.050965	0.0458209
99	0.3656	0.237423	0.0622818	0.0712557	0.141738	0.137293	0.183934	0.126503	0.121675	0.155607	0.208065	0.287738	0.009201	0.1251
100	0.266174	0.0860748	0.056536	0.154128	0.144956	0.144956	0.131102	0.186082	0.10257	0.031589	0.0794758	0.0936108	0.186905	0.208756
101	0.266174	0.247747	0.247747	0.286783	0.205377	0.371304	0.299134	0.313656	0.303306	0.081505	0.126572	0.135401	0.271084	0.208756
102	0.060748	0.247747	1	0.684191	0.606578	0.590706	0.425911	0.427087	0.427087	0.427087	0.123262	0.126218	0.130532	0.215487
103	0.075653	0.206783	1	0.765106	0.616267	0.548792	0.477085	0.477085	0.477085	0.0982753	0.154651	0.124043	0.138435	0.115484
104	0.154128	0.205377	0.606678	0.765106	1	0.571737	0.567778	0.565463	0.32813	0.0665318	0.183093	0.131817	0.0370401	0.0732956
OBS	C31	C32	C33	C34	C35	V1	V2	V3	V4	V5	V6	V7	V8	V9
97	0.08214	0.0165617	0.0833293	0.0107945	-9.6E-04	0.217711	0.126211	0.123331	0.0637875	0.056056	0.007818	0.0875672	0.056711	-0.058186
98	0.047749	0.137732	0.0795175	0.14787	0.14787	0.0689876	0.113406	0.174009	0.0886131	0.159461	0.247302	-0.010473	0.120679	0.0688492
99	0.1044	0.0944269	0.131603	0.14167	0.24834	0.076228	0.057343	0.0730999	0.128615	0.171929	0.069329	0.198084	0.112267	-0.07844
100	0.07925	0.150293	0.039197	0.11151	0.196814	0.0901419	0.15284	-0.041491	0.0454075	0.11965	0.0664997	0.103774	0.102767	0.031554
101	0.083395	0.0882058	0.171909	0.139237	0.345627	0.137402	0.133362	0.139773	0.265851	0.20018	0.0866747	0.082791	0.207458	0.21705
102	0.01291	0.230892	0.228384	0.12561	0.194807	0.137107	0.138716	0.163979	0.089092	0.128945	0.080372	0.080372	0.080496	0.302116
103	0.132467	0.092896	0.217186	0.102761	0.120542	0.16201	0.19217	0.232203	0.179139	0.258332	0.153294	0.0443019	0.139279	0.287121
104	-0.035653	0.0966915	0.174445	0.120042	0.139576	0.164302	0.143994	0.174525	0.121864	0.179192	0.122607	-0.015613	0.123374	0.266993
OBS	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
97	0.106197	0.117364	0.167362	0.0890954	0.159087	0.0327729	0.0442273	0.017412	0.0907118	0.0949759	0.155297	-0.014138	0.101569	-0.032977
98	0.239056	0.254201	0.164631	0.113115	0.155400	0.101046	0.0937469	0.146626	0.0755648	0.0991112	0.181234	0.0218129	0.0566393	0.1566307
99	0.17746	0.0913309	0.108676	0.17084	0.167595	0.0849259	0.11086	0.121802	0.0493563	0.124043	0.111636	0.0999336	0.092820	0.1566307
100	0.20467	0.183331	0.091889	0.0834199	0.132251	0.151887	0.17021	0.0976474	0.113907	0.096003	0.133321	0.120428	0.096592	0.146623
101	0.295617	0.295302	0.188917	0.194751	0.119381	0.25017	0.173941	0.285008	0.271734	0.159992	0.263633	0.235256	0.292667	0.137774
102	0.232811	0.325384	0.201303	0.153384	0.40595	0.317992	0.306741	0.290761	0.230761	0.233737	0.0449509	0.360017	0.316769	0.189634
103	0.338246	0.339627	0.206163	0.136758	0.081498	0.308294	0.415771	0.386662	0.367322	0.391236	0.289415	0.23147	0.12978	0.12978
104	0.29909	0.325946	0.229959	0.151408	0.150091	0.281535	0.471934	0.38267	0.367322	0.244623	0.270312	0.166804	0.204507	0.204507

SAS

DBS	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37
97	0.18345	0.05794	0.061401	0.732722	0.127268	0.569	0.127504	0.872401	0.130753	0.172131	0.187302	0.071743	0.0308783	0.106069
98	0.071257	0.14463	0.194039	0.105173	0.158369	0.626028	0.171599	0.121632	0.0618948	0.149125	0.0852971	0.0183922	0.152605	0.241722
99	0.140716	0.0278675	0.124672	0.124672	0.156889	0.688037	0.210127	0.18059	0.204275	0.160979	0.200463	0.123745	0.124997	0.109886
100	0.0762987	0.0493518	0.029267	0.0773162	0.0671664	0.172734	0.168717	0.1017832	0.152031	0.0974115	0.095674	0.0189418	0.221163	0.141726
101	0.107793	0.0896637	0.0323223	0.104522	0.0631276	0.129961	0.114674	0.139623	0.22453	0.244686	0.279112	0.191257	0.363229	0.288517
102	0.117194	0.130911	0.151645	0.097122	0.091853	0.036271	0.040261	0.084853	0.101276	0.251256	0.141446	0.266059	0.185833	0.181963
103	0.106387	0.349246	0.022536	0.101975	0.0820923	0.013804	0.0620699	0.0992738	0.079263	0.214332	0.141632	0.160035	0.113612	0.140291
104	0.137971	0.0429833	0.045235	0.059473	0.072682	0.053051	0.0656499	0.0272138	0.11279	0.234816	0.1284	0.161891	0.169421	0.124085
DBS	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51
97	0.112975	0.011966	0.0278651	0.030407	0.0734122	0.0844555	0.115537	0.0980785	0.0668498	0.16101	0.105809	0.144404	0.130595	0.0884262
98	0.2177641	0.097832	0.104695	0.101327	0.124464	0.136919	0.164004	0.520858	0.104724	0.174623	0.196265	0.12099	0.15829	0.153971
99	0.075637	0.182736	0.154401	0.131024	0.0750215	0.147581	0.0415893	0.0915383	0.0471573	0.0826562	0.1099273	0.115659	0.103379	
100	0.214563	0.106454	0.152067	0.130121	0.0608728	0.147581	0.174553	0.204509	0.0861327	0.195325	0.0768466	0.0986928	0.048112	0.167821
101	0.113813	0.154117	0.1592	0.105261	0.0750513	0.0439898	0.0240209	0.0693906	0.114238	0.138002	0.166606	0.207649	0.29613	0.126727
102	0.113596	0.162817	0.183845	0.162796	0.199221	0.300177	0.175027	0.15364	0.152926	0.194192	0.134889	0.144637	0.062589	0.2037
103	0.103226	0.0468971	0.11507	0.0886819	0.130971	0.287685	0.172074	0.271081	0.190882	0.301396	0.248389	0.259416	0.120982	0.13382
104	0.138635	0.0922508	0.139511	0.0821228	0.126501	0.263201	0.178998	0.259479	0.203708	0.27361	0.214716	0.174402	0.12607	0.162013
DBS	V52	V53	V54	V55	V56	V57	V58							
97	0.0604451	0.11228	0.0399813	0.0621923	0.099205	0.203516	0.162638							
98	0.0777538	0.10578	0.102189	0.11212	0.0483334	0.170204	0.193956							
99	0.130117	0.293104	0.151641	0.21416	0.123766	0.189845	0.113137							
100	0.155656	0.269464	0.146612	0.207393	0.149123	0.160314	0.120979							
101	0.147203	0.215712	0.209731	0.210298	0.286012	0.221505	0.240939							
102	0.218064	0.170929	0.217608	0.328329	0.292108	0.164222	0.256676							
103	0.198561	0.217171	0.214315	0.408721	0.37172	0.101159	0.247695							
104	0.25334	0.290023	0.210411	0.437874	0.371794	0.162947	0.309448							

SAS

OBS	TYPE	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
105	CORR	C22	0.133598	0.0935271	0.117005	0.3749854	0.0836281	0.128434	0.132989	0.073888	0.0244509	0.170515	0.166792	0.0076158
106	CORR	C23	0.121343	0.102165	0.113682	0.670784	0.0763144	0.151946	0.161086	0.061455	0.103132	0.14957	0.163194	0.0753641
107	CORR	C24	0.110092	0.140746	0.0963431	0.8734683	0.103679	0.0869983	0.0869916	0.0540559	0.0778331	0.167007	0.15661	0.0363884
108	CORR	C25	0.115157	0.102377	0.104937	0.334244	0.113336	0.092693	0.128138	0.021298	0.071859	0.0760621	0.175897	0.0249486
109	CORR	C26	0.0618961	0.0968563	0.0426596	0.3349195	0.0097837	0.0265936	0.056318	0.0521493	0.0650154	0.0759665	0.0636331	
110	CORR	C27	0.0684636	0.0247382	0.0392212	0.1010829	0.0751591	0.0656457	0.08413	0.0497546	0.121033	0.015593	0.072967	0.017771
111	CORR	C28	0.045161	0.035852	0.036481	0.064417	0.126141	0.0398474	0.0833259	0.046838	0.028828	0.071289	0.043035	0.002155
112	CORR	C29	0.226657	0.109013	0.10674	0.065476	0.0269441	0.0909513	0.0778071	0.113725	0.0825817	0.042766	2.8E-04	0.044798
OBS	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26
105	0.114734	0.198144	0.052924	0.025446	0.0517865	0.220739	0.104287	0.109655	0.0020777	0.040129	0.0093888	-0.025795	-0.025789	0.1600923
106	0.103528	0.242588	0.073804	0.044867	0.038371	0.220714	0.123733	0.107001	-0.113717	0.007922	0.070686	5.8E-04	-0.05237	0.127002
107	0.04477	0.204407	0.119394	0.0591445	0.021087	0.208756	0.0880465	0.131565	-0.022823	0.0817829	0.0204471	0.0829029	0.019804	0.0393944
108	0.0816475	0.126487	0.129133	0.175595	0.102535	0.100787	0.0336849	0.0353382	0.0069427	-0.040052	0.064416	0.037515	0.003994	0.0553777
109	0.150187	0.116505	0.071449	0.050563	0.091072	0.0470755	0.0649009	0.0071338	0.072022	-0.010182	0.070645	-0.103413	0.0438622	-0.071215
110	0.0931972	0.108841	-0.040546	0.0858711	0.101723	0.0050959	0.0856991	0.0441791	0.059599	0.0012631	-0.113371	0.029942	0.0438622	-0.071215
111	0.0047428	0.014157	0.023276	0.0464683	0.0305234	0.030318	0.0066325	0.0208535	-0.151126	0.0133959	-0.17349	0.042963	0.0641753	-0.036284
112	0.209745	0.0776743	-0.022132	0.0176486	-0.023489	0.073961	1.1E-04	-0.041998	-0.041895	-0.011909	-0.047911	-0.011427	-0.023605	0.0751916
OBS	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
105	0.101819	0.0559668	-0.059177	-0.023348	7.2E-04	0.071649	0.19602	0.102579	0.0879974	0.110196	-0.003853	0.13421	-0.058941	-0.140638
106	0.033126	0.0855504	-0.043746	0.041057	0.107557	0.057512	0.1667	0.097604	0.0264306	0.111314	0.0490169	0.160521	0.042015	-0.024727
107	0.119224	0.127426	-0.08569	0.066749	0.171043	0.120423	0.212652	0.113394	0.0547362	0.108563	0.108666	0.169435	0.0145293	-0.066661
108	0.062556	0.0336125	-0.074008	-0.055024	-0.017341	0.119597	0.171241	0.0552218	0.125363	0.0539638	0.0673664	0.114533	-0.012407	-0.055776
109	0.276518	0.147626	-0.03197	-0.056283	0.0481652	0.034556	0.106583	0.0231349	-0.025403	0.019307	0.0476237	0.0737943	-0.049815	-0.072489
110	0.202563	0.170313	-0.059544	-0.047949	0.0782985	0.0013656	0.072868	-0.037827	-0.038702	-0.049369	0.0453784	0.055877	-0.021037	-0.054138
111	0.157402	0.162144	-0.09518	-0.077306	0.0449685	-0.051959	0.19292	-2.2E-04	0.0522898	-0.109566	-0.011453	-0.030662	-0.040311	-0.015314
112	0.082734	-0.003034	-0.005886	-0.060833	0.0718506	0.0915204	0.114765	0.183801	0.208681	0.108204	0.093841	0.0222013	0.0436722	0.0672063
OBS	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54
105	-0.131078	0.0917091	0.129813	0.174977	0.119942	0.0500634	0.1403368	-0.002992	-0.0777246	0.0949378	0.0693232	0.124016	0.105734	0.115104
106	0.043312	0.022668	0.0977335	0.0908926	0.0097698	-0.012994	0.0580975	0.0066093	0.172841	0.0358428	0.045625	0.046241	0.0379209	0.112906
107	0.046721	0.010858	0.055149	0.102351	-0.030199	0.0203366	0.0511502	0.0676991	0.0882067	0.126488	0.126488	0.126488	0.0430548	0.161296
108	0.093166	0.165697	0.108898	0.110711	0.0482248	0.0113328	0.0519709	0.033169	0.073621	0.0677488	0.0808086	0.264133	0.047293	0.091534
109	0.127919	0.053155	0.174094	0.149538	0.0728436	0.0581619	0.0201972	0.0859655	0.0724968	0.0676268	0.093319	0.113514	0.0983101	0.140534
110	0.086178	0.033883	0.103732	0.174052	0.121152	0.057142	0.0746622	0.0831886	0.0840669	-0.028174	0.021567	0.131497	0.136388	0.1046017
111	0.140459	0.044995	0.110609	0.142539	-0.036163	0.0023022	0.005587	0.0469028	-0.001553	-0.051132	-0.088712	0.0884459	0.137303	0.0185297
112	0.0367887	0.101579	0.104156	0.123346	0.0087142	0.124237	0.0398071	-0.012618	0.115644	0.0095799	-0.068837	0.0801018	0.0273361	0.109295
OBS	Q55	Q56	Q57	Q58	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
105	0.161643	0.185688	0.0796893	0.107566	0.22389	0.154895	-0.052023	0.0160956	0.0255663	0.0408292	0.0615517	0.12799	0.104621	
106	0.105224	0.117611	0.0708735	0.119671	0.246702	0.078452	0.164762	0.006606	0.036269	-0.098004	0.036268	0.0616732	0.0903464	0.11408
107	0.176669	0.207266	0.0503296	0.0899171	0.564105	0.035588	0.125951	-0.12546	0.0025986	0.038029	0.168631	0.015356	0.0692463	0.07738
108	0.147914	0.103086	0.031106	0.050276	0.172942	0.107732	0.041811	-0.060733	0.0591575	0.0646351	-0.074199	0.10099	0.128902	0.157345
109	0.075272	0.0309601	0.0229088	0.009511	0.073736	0.0705736	-0.12851	0.132026	0.131313	0.156676	0.0844092	0.126627	0.0793047	0.146017
110	0.083443	0.011664	0.0203153	0.0107403	0.0914563	0.107043	0.151333	0.11074	0.110671	0.157278	0.136843	0.105927	0.011892	0.19229
111	0.040748	0.031993	0.0987732	0.054635	0.130019	0.0454635	0.130019	0.0725672	0.104507	0.0960025	0.0845338	0.0472404	0.0730742	
112	0.062439	0.0813822	0.0724698	-0.008921	0.0259452	0.0037168	-0.065274	0.101854	0.0712839	0.093846	0.136035	0.0133318	0.282006	0.215946

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