

ICPSR 32921

**Chicago School Staff Social
Network Questionnaire
Longitudinal Study, 2005-2008**

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Data Cleaning Steps, 2007

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Chicago Network Survey – Spring 2007
Data Cleaning, Attitude Measure Calculations, Response Rate Analysis
December 23, 2011
James Pustejovsky

Survey data collection

1. This round of data collection took place in May and June of 2007. Our plan was to collect data from three groups of schools:
 - a. All 24 schools in Year 2 of the Cluster 4 Middle Grades Program (C4MGP), in 3 of which we had collected school network survey data in 2005.
 - b. 8 additional public schools which we had previously surveyed.
 - c. 4 Catholic schools which we had previously surveyed.
2. The incentive funds for the public schools were provided by the CPS Office of Mathematics and Science (OMS). Teachers were offered compensation equal to one hour of pay at their normal hourly rate, to be added to their usual paycheck (hourly rates differ somewhat by teacher). Schools that reached a 90% response rate were rewarded with \$1,000, to be loaded into their budgets for the following school year.
3. The incentive funds for the 4 Catholic schools were drawn from RETA. Teachers were offered \$45 Barnes & Noble gift certificates for their participation. Schools that reached a 90% response rate were rewarded with \$500.
4. To initiate the process, we sent letters to the 32 public school principals, inviting them to participate. The C4MGP school principals were also informed of the survey by OMS, which instructed them that participation in the survey was a condition of their participation in C4MGP. As principals contacted us to say that they would allow their schools to participate in the survey, we sent them a follow-up letter (via email and/or post) containing more detailed instructions, as well as a stack of flyers containing instructions for accessing and completing the survey, which we asked be distributed to teachers.
5. The Catholic schools were contacted by Bill Suttles from the Inner City Teaching Corps, who provided the schools with instructions for accessing and completing the survey.
6. All schools were asked to provide current rosters or organizational charts of all staff in their schools.
7. We were initially planning on giving each school a 2-week window to complete the survey. As completion dates passed and response rates lagged, the windows were repeatedly extended.
 - a. 19 of the C4MGP schools agreed to participate, but none of the other 8 public schools agreed.
 - b. During the response windows, principals were periodically informed of the current response rate in their school. Many principals delegated the administration of the survey to their school's math/science coordinator. Some principals and/or coordinators monitored their response rates carefully, and may have even kept records of which teachers completed the survey. Others showed no interest whatsoever.

- c. As responses came in, they were downloaded from the Snap Online server, and processed in Snap. Respondent names were matched against school rosters to determine response rates for a school. A running list of respondent names, schools, and employee ID numbers was provided to OMS in order to process participants' compensation.
- d. Respondents in a number of schools completed a demo version of the survey on the Distributed Leadership website, which did not ask for participants' consent, did not ask for employee ID numbers (needed for processing compensation), and did not pose the final set of network prompts. It is possible that some school principals distributed a link to this demo survey to their staff, without reading the instructions contained in the contact letter.
 - i. In order to collect the missing pieces of data from respondents to the demo survey, another survey form was created. An explanation of the problem and a link to the follow-up survey was sent to contacts at two public schools: Bontemps and Carter, and responses were collected from most staff who had responded to the demo survey.
 - ii. Due to lack of consent, we had to discard responses to the demo survey if we did not also receive a response to the follow-up survey.
- e. The survey was finally closed on June 22, 2007.

Roster data compilation and cleaning process

- 8. Rosters or organizational charts were collected from all schools via email or fax. These data were entered into a single, standardized excel spreadsheet ("Roster Data.csv"), which collected the following pieces of information:
 - a. *school*
 - b. *school type* – public or Catholic
 - c. *first name* – first name or initial, if listed
 - d. *last name*
 - e. *role* – staff person's role as described on the roster
 - f. *grade* – teacher's grade level, if listed
 - g. *subject* – teacher's subject area, if listed
 - h. *room* – staff person's assigned room number, if listed
 - i. *gender* – if apparent from staff person's title (Mr./Ms./Mrs./etc.)
 - j. *teacher id* – employee ID code, if provided
 - k. *notes*
- 9. Additional variables were created based on our judgement:
 - a. We categorized all staff people in the variable *category*:
 - i. Administrator – Principals, Assistant Principals, Counselors, business managers, other administrative personnel
 - ii. Teacher - all staff with grade level or subject matter listed, suggesting that they are teachers
 - iii. Specialist - Coaches, lead teachers, school-level specialists, librarians, others that appear to be involved in instruction but may not be directly interacting with students

- iv. ESP – Educational Support Personnel, involved in support functions in the school building, but not in instruction.
 - b. Based on the staff person’s role, we determined whether or not they belonged in our sample of teachers, administrators, and school-level specialists. If so, the variable *include* was assigned a value of 1, and 0 otherwise.
 - c. A few respondents did not appear on the provided school rosters. If their name could not be matched, it was added to the roster data, and a value of 1 was assigned to the variable *added*, which was otherwise equal to 0.
- 10. In addition to the school rosters, we received data containing the names and positions of a number of individuals outside the surveyed schools, who nonetheless may play an important role in the schools. These individuals were added to the roster data, even though they were not survey participants, and assigned a school name of “External Coaches and Advisors.” They included:
 - a. Area instructional officers
 - b. City-wide math/science coaches and city-wide literacy coaches, who support several schools in an area
 - c. CPS administrative personnel, from OMS and other offices
 - d. University Partners in the C4MGP initiative, from Loyola and UIC
- 11. Each school was also assigned a pseudonym, captured in the variable *school pseudo*.
 - a. Public schools were assigned pseudonyms from a list of flowers, alphabetically by decreasing response rates.
 - b. Catholic schools were assigned pseudonyms starting with “St.” to distinguish them as Catholic, followed by a name of one of the Beatles (a 1960’s era British pop/rock group).
- 12. Each individual was assigned a random code, captured in the variable *staff_code*.

CPS Administrative Data

- 13. We received data from CPS administrators regarding teachers’ years experience, educational background, and certifications of teachers in all the public schools surveyed. These data were matched by *staff_code* to the rosters provided by each school. The match revealed that this administrative data covered most, though not all, teachers in the sample schools. The CPS administrative data was merged by *staff_code* with the rest of the survey data.

Survey data cleaning process

- 14. Combining the various sets of survey data. Four different survey files were used to collect data during this round. Each survey was exported both using variable codes and using variable labels. For each survey, the two exports were formatted to keep certain variables in certain formats, then merged together into one dataset. The four survey datasets were stacked one on top of the other, after standardizing the variable names as necessary.
 - a. For the 19 public schools that participated, the main survey generated datasets called “snTeacherNetworkChicago - codes.csv” and “snTeacherNetworkChicago - labels.csv.”

- b. Some teachers in the public schools mistakenly responded to the demo survey posted on the DLS website. This survey, which used the html survey format (with emailed responses) as opposed to the Snap Online survey format, generated datasets called “snTeacherNetworkHTML - codes.csv” and “snTeacherNetworkHTML - labels.csv.” This survey differed from the main survey in that it did not contain a consent form, did not ask for the employee ID numbers necessary to compensate participants, and did not ask about “people with whom you discuss school-related matters.” Additionally, the mathematics and reading/writing/language arts network prompts were not randomized.
 - c. In order to collect the missing consent forms, employee IDs, and school-related discussion network data, a follow-up survey was created and sent to [School Names]. This survey generated a dataset called “sn[School Name]Followup - labels.csv.”
 - d. For the 4 Catholic schools that participated, a separate survey was created that also contained questions about teachers’ educational background and qualifications. This survey generated datasets called “snTeacherNetworkCatholic - codes.csv” and “snTeacherNetworkCatholic - labels.csv.”
15. Duplicate responses were determined based on respondent name. Inexact matches were fixed. Duplicate responses were either merged into one observation or removed.
- a. If a teacher responded to the demo survey and then to the follow-up survey, their responses were merged into a single observation.
 - b. Most other duplicate responses resulted from someone attempting to fill out the survey but abandoning it mid-way through, then going back and filling it out completely. Duplicate partial responses were dropped if a complete response was collected.
16. Within-survey completion rates were calculated for each section of the survey:
- a. *responded_attitudes* – percent of attitude/opinion questions answered
 - b. *responded_roles* – percent of relevant role questions answered
 - c. *responded_networks* – percent of 4 network sections where any name or role is given, or the “I have not sought advice from anyone” box is checked.
 - d. *responded_background* – percent of background questions answered
 - e. *responded_activities* – percent of activities questions answered
 - f. *responded_overall* – average response rate for the 5 sections
17. As survey responses were collected, a merge key was created to map respondents’ names as entered in the survey to respondents’ assigned *staff code* (file “2007 Survey - Response Match Key.csv”). This file was merged with the survey responses, re-sorted by *staff code*, and merged with the roster data.
18. The variable *career_stage* was created using the reported years of teaching experience for each respondent, according to the following groupings:
- a. career stage 1 – 0-2 years teaching experience
 - b. career stage 2 – 3-6 years teaching experience
 - c. career stage 3 – 7-11 years teaching experience
 - d. career stage 4 – 12-21 years teaching experience
 - e. career stage 5 – 22-31 years teaching experience

- f. career stage 6 – 32+ years teaching experience
19. The variable *school_stage* was created using the same groupings as career stage, but based on the reported years in the respondent's current school.

Response rates analysis.

Attitude measure responses

20. The survey contained a number of banks of likert-scale items measuring teachers' attitudes and opinions about their schools. These individual items were combined into general measures of teacher attitudes. All analysis can be found in the file "Spring 2007 - Attitude Measure Alphas.txt".
- a. Collective responsibility. 14 items in the survey deal with collective responsibility for student learning. In order to explore possible differences between various scales and wordings used to assess collective responsibility, we use two different sub-measures: one phrased as self-reports, and one as peer-reports. Previous studies have used collective responsibility as a school-level measure. However, at the level of the individual, one would expect that a respondent may have a different view of their own feelings of responsibility versus the responsibility of their peers. Averaging all responses in a school, these differences may largely disappear.
 - i. The peer-report items are based on a measure used by the Consortium on Chicago Schools Research (CCSR) in their bi-annual surveys of Chicago schools. The Cronbach alpha score for these 7 items is 0.93. The individual items are all responses to the stem: "How many teachers in this school...?" on a scale of None/Some/About Half/Most/Nearly All.
 - 1. Feel responsible when students in this school fail?
 - 2. Feel responsible to help each other do their best?
 - 3. Help maintain discipline in the entire school, not just their classroom?
 - 4. Take responsibility for improving the school?
 - 5. Feel responsible for helping students develop self-control?
 - 6. Set high standards for themselves?
 - 7. Feel responsible that all students learn?
 - ii. The 7 self-report items are selected from a 12-item measure studied in Lee and Smith's 1996 article "Collective Responsibility for Learning and Its Effects on Gains in Achievement for Early Secondary School Students," which used nationally representative data from NELS 1988. The Cronbach alpha score for these 7 items is 0.68, somewhat lower than the 0.77 reported by Lee and Smith. Items were selected to parallel the content of the peer-report items. The individual items are all agree/disagree statements:
 - 1. There is really very little I can do to insure that most of my students achieve at a high level.

2. My success or failure in teaching is due primarily to factors beyond my control rather than to my own efforts and ability.
 3. The attitudes and habits students bring to my class greatly reduce their chances for academic success.
 4. By trying a different teaching method, I can significantly affect a student's achievement.
 5. I am certain I am making a difference in the lives of my students.
 6. I sometimes feel it is a waste of time to try to do my best as a teacher.
 7. If I try really hard, I can get through to even the most difficult or unmotivated student.
- iii. We explored the possibility of combining the peer-assessed and self-assessed collective responsibility items into a single measure. A principal-component factor analysis, using oblique promax rotation, revealed three factors present among the 14 items, instead of two as expected.
1. Peer-assessed collective responsibility loads onto a single factor, suggesting that it is a consistent sub-scale.
 2. Self-assessed collective responsibility loads onto two factors, one for the positively-worded questions (4, 5, 7) and one for the negatively-worded questions (1, 2, 3, 6). This suggests that the self-assessed scale is not a very good measure, perhaps because only a sub-set of the original 12 items from NELS were used.
 3. The Cronbach alpha score using all 14 items is 0.86.
 4. The peer-assessed and self-assessed measures are correlated at 0.2665.
- b. Teacher control. We use a five-item scale to measure teacher control over classroom practice, based on a measure drawn from a paper by Lee, Smith, and Cioci (1993) called "Teachers and Principals: Gender-Related Perceptions of Leadership and Power in Secondary Schools," which used data from the Administrator & Teacher surveys of High School and Beyond 1984. The Cronbach alpha score for this measure was 0.75. The items are all responses to the stem: "How much control do you feel you have in your classroom over each of the areas below?" on a scale of None/A Little/Some/A Great Deal.
1. Selecting textbooks and other instructional material
 2. Selecting content, topics, and skills to be taught
 3. Selecting teaching techniques
 4. Disciplining students
 5. Determining the amount of homework to assign
- c. Teacher-teacher trust. We use a six-item scale to measure trust among teachers, drawn from a measure used by CCSR. The Cronbach alpha score for this measure is 0.88. The individual items are all agree/disagree prompts, except for the first item:

1. Please indicate the extent that you (None/A Little/Some/A Great Deal): Feel respected by other teachers.
 2. Teachers in this school trust each other.
 3. It's okay in this school to discuss feelings, worries, and frustrations with other teachers.
 4. Teachers respect other teachers who take the lead in school improvement efforts.
 5. Teachers at this school respect those colleagues who are experts at their craft.
 6. Teachers at this school really care about each other.
- d. Teacher-principal trust. We use an 8-item scale to measure trust between teachers and the school principal, drawn from a measure used by CCSR. The Cronbach alpha score for this measure is 0.95. The individual items are all agree/disagree prompts, except for the first item:
1. Please indicate the extent that you (None/A Little/Some/A Great Deal): Feel respected by your principal.
 2. The principal has confidence in the expertise of the teachers.
 3. I trust the principal at his or her word.
 4. It is okay in this school to discuss feelings, worries, and frustrations with the principal.
 5. The principal takes a personal interest in the professional development of teachers.
 6. The principal looks out for the personal welfare of faculty members.
 7. The principal at this school is an effective manager who makes the school run smoothly.
 8. The principal places the needs of children ahead of his or her personal interests.
- e. Instructional leadership. We use a 7-item scale to measure staff assessments of the principal's level of instructional leadership, drawn from a measure used by CCSR. The Cronbach alpha score for this measure is 0.95. The individual items are all agree/disagree prompts:
1. The principal at this school communicates a clear vision for our school.
 2. The principal at this school makes clear to the staff his or her expectations for meeting instructional goals.
 3. The principal at this school presses teachers to implement what they have learned in professional development.
 4. The principal at this school sets high standards for teaching.
 5. The principal at this school sets high standards for student learning.
 6. The principal at this school carefully tracks student academic progress.
 7. The principal at this school actively monitors the quality of teaching in this school.

- f. Innovation. We use a 6-item scale to measure teachers' attitude towards innovation, drawn from a measure used by CCSR. The Cronbach alpha score for this measure is 0.91. The individual items are::
 - i. Please indicate the extent to which you agree or disagree with the following statements. (Strongly Disagree/Moderately Disagree/Slightly Disagree/Slightly Agree/Moderately Agree/Strongly Agree)
 - 1. In this school, teachers have a can-do attitude.
 - 2. In this school, all teachers are encouraged to stretch and grow.
 - 3. In this school, teachers are continually learning and seeking new ideas.
 - ii. How many teachers in this school: (None/Some/About Half/Most/Nearly All)
 - 1. Are willing to take risks to make this school better?
 - 2. Are eager to try new ideas?
 - 3. Are really trying to improve their teacher?

Network data cleaning and restructuring

- 21.** Like the Winter 2007 survey conducted on Nebraska middle schools, the network questions in this survey had a more complex design than any previous version of the survey.
- a. Depending on their role, a respondent was asked either two or three sets of subject-specific network questions, all beginning with “During this school year, to whom have you turned for advice or information about...”:
 - i. Administrators were asked about math and reading/writing/language arts.
 - ii. Self-contained classroom teachers were asked about math and reading/writing/language arts.
 - iii. Specialist teachers were asked about their primary/special subject (if it was different than math or reading/writing/language arts), as well as math and reading/writing/language arts.
 - b. The order of the subject-specific network questions was randomized. Specialist teachers whose primary/special subject was something other than math or reading/writing/language arts were always asked about their primary/special subject first. The order of the last two network questions was randomized, so that approximately half of the sample was asked about math first, and half about reading/writing/language arts.
 - c. Each subject-specific network prompt was also phrased differently, depending on the respondent's role:
 - i. Administrators were asked about “[subject] instruction.”
 - ii. Teachers that taught a particular subject were asked about “teaching [subject].”
 - iii. Teachers that did not teach a particular subject were asked about “[subject] as it relates to your classroom teaching.” For instance, a middle-school science teacher might be asked “During this school

- year, to whom have you turned for advice or information about mathematics as it relates to your classroom teaching?”
- d. Each subject-specific network prompt began by asking the respondent to list up to twelve names, and for each name to describe the person’s role or position. Following the name generator, respondents were asked to give additional information about each of the alters they listed.
 - i. Advice Content: Deepening your content knowledge/Planning or selecting course content and materials/Approaches for teaching content to students/Strategies specifically to assist low-performing students/Assessing students’ understanding of the subject/Other (please describe)
 - ii. Frequency A few times a year/Once or twice a month/Once or twice a week/Daily or almost daily.
 - iii. Influence: 1 = Not at all, 5 = Very influential
 - e. Finally, each respondent was asked: “Now thinking more generally about your personal network, is there anyone with whom you discuss school-related matters that you have not already named?” Space was provide to list up to 12 names and associated roles.
 - f. Network data was reshaped and cleaned.
 - i. Data were reshaped so that the dataset contained one observation for each name listed in response to each prompt. If a respondent named three people that they go to for advice about teaching science, and two people that they go to for advice about mathematics as it relates to their classroom teaching, there would be five rows of data associated with that respondent – one for each alter named in each subject area.
 - ii. These data were exported for merging with roster data (file “Chicago 2007 Survey - Network Data for Cleaning.csv”). The cleaning was done in the file “Chicago 2007 Survey - Network Data Cleaning.xls”.
 1. Names were matched to roster data of all school personnel plus the external coaches and advisors. Roster data was supplemented with the names, nicknames/maiden names, and roles data provided by survey respondents (file “Chicago 2007 Survey - Roster Data plus survey roles.csv”).
 2. Names and role/position descriptions were used to verify name matches. Names often did not match exactly because a respondent would often list a nickname, maiden names or only one half of a hyphenated last name.
 3. As would be expected, not all names listed could be matched to roster data. Names not matched to the roster data were assigned unique ID values beginning with “x.”
 - iii. The cleaning merge key (“Chicago 2007 Survey - Network Data Cleaning.csv”) was re-imported and merged with the frequency, influence, and content variables.
 1. Responses that did not refer to individuals or groups were dropped (e.g. “the internet”).

2. A cleaned version of the dataset, containing neither names nor identifying information, was created in the file “Chicago2007networkdata_nonames.dta”

File Listing

22. Clean files containing no school or individual identifiers.

- a. Survey and roster data
 - i. Chicago2007SurveyData_clean.dta
- b. Network data
 - i. Chicago2007networkdata_nonames.dta
- c. Analysis

23. Key confidential files.

- a. Raw data
 - i. School roster data
 1. [School Name] Roster.doc
 2. [School Name and Date].doc
 3. [School Name and Date].doc
 4. [School Name and Date].doc
 5. [School Name] Roster.pdf
 6. [School Name] Roster.pdf
 7. [School Name and Date] organizational chart.doc
 8. [School Name and Date].doc
 9. [School Name and Date] & ESP list.doc
 10. [School Name] Roster.pdf
 11. [School Name and Date] CLASSROOM ORGANIZATION BY GRADE LEVEL.doc
 12. [School Name and Date] Roster.doc
 13. [School Name] Roster.pdf
 14. [School Name] Roster.pdf
 15. [School Name] Staff & faculty.doc
 16. [School Name and Date] Organization.doc
 17. [School Name] Organization3Usernames.doc
 18. [School Name] Roster.pdf
 19. [School Name] Organization [Date].doc
 20. [School Name] Roster.pdf
 - ii. Other roster data
 1. citywide specialist [Date] vertical.xls
 2. Coach AIO list [Date].xls
 3. middle grade project contact list [Date].pdf
 - iii. Administrative data
 1. Administrative data from CPS [Date].xls
 2. CPS Admin Data.csv (includes *staff_code* for merging)
 - iv. Survey data
 1. snTeacherNetworkChicago - codes.csv

2. snTeacherNetworkChicago - labels.csv
 3. snTeacherNetworkCatholic - codes.csv
 4. snTeacherNetworkCatholic - labels.csv
 5. snTeacherNetworkHTML - codes.csv
 6. snTeacherNetworkHTML - labels.csv
 7. snBontempsFollowup - labels.csv
- b. Cleaning files and merge keys
 - i. Roster Data and Completed Surveys Merge Key.xls
 - ii. Roster Data.csv
 - iii. 2007 Survey - Response Match Key.csv
 - iv. Chicago 2007 Survey - Network Data Cleaning.xls
 - v. Chicago 2007 Survey - Network Data Cleaning.csv
 - c. Programs
 - i. 2007 Survey 1 Merge and clean raw data files.do
 - d. Final datasets
 - i. Survey and roster data
 1. Chicago2007SurveyData.dta
 - ii. Network data
 1. Chicago2007networkdata_clean.dta
 - e. Analysis

 log: C:\James Data\RETA\Chicago\Stata exports\Spring 2007 - Attitude Measure Alphas.txt
 log type: text
 opened on: 31 Jul 2007, 14:03:13

. factor q10* q11*, pcf
 (obs=483)

Factor analysis/correlation Number of obs = 483
 Method: principal-component factors Retained factors = 3
 Rotation: (unrotated) Number of params = 39

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	5.33877	3.21446	0.3813	0.3813
Factor2	2.12432	0.68194	0.1517	0.5331
Factor3	1.44237	0.62072	0.1030	0.6361
Factor4	0.82165	0.10191	0.0587	0.6948
Factor5	0.71975	0.03935	0.0514	0.7462
Factor6	0.68039	0.08318	0.0486	0.7948
Factor7	0.59721	0.06107	0.0427	0.8375
Factor8	0.53614	0.09944	0.0383	0.8758
Factor9	0.43670	0.02698	0.0312	0.9070
Factor10	0.40972	0.14961	0.0293	0.9362
Factor11	0.26010	0.01206	0.0186	0.9548
Factor12	0.24804	0.03819	0.0177	0.9725
Factor13	0.20985	0.03487	0.0150	0.9875
Factor14	0.17498	.	0.0125	1.0000

LR test: independent vs. saturated: chi2(91) = 3352.32 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
q10a	0.7154	-0.1893	0.0499	0.4499
q10b	0.8540	-0.1575	0.0066	0.2458
q10c	0.8535	-0.2334	0.0393	0.2154
q10d	0.8616	-0.2223	0.0482	0.2059
q10e	0.8616	-0.1569	0.0554	0.2300
q10f	0.8665	-0.1731	0.0124	0.2191
q10g	0.7404	-0.0915	-0.0646	0.4393
q11a	0.2472	0.5386	-0.4068	0.4833
q11b	0.3008	0.4841	-0.5820	0.3364
q11c	0.3324	0.5042	-0.3978	0.4771
q11d	0.1980	0.5774	0.4975	0.3799
q11e	0.2541	0.5817	0.5806	0.2600
q11f	0.3702	0.4212	-0.1986	0.6460
q11g	0.2874	0.5187	0.3769	0.5064

. rotate, promax

Factor analysis/correlation Number of obs = 483
Method: principal-component factors Retained factors = 3
Rotation: oblique promax (Kaiser off) Number of params = 39

Factor	Variance	Proportion	Rotated factors are correlated
Factor1	5.20222	0.3716	
Factor2	2.49523	0.1782	
Factor3	2.21451	0.1582	

LR test: independent vs. saturated: $\chi^2(91) = 3352.32$ Prob> $\chi^2 = 0.0000$

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
q10a	0.7539	-0.0511	-0.0007	0.4499
q10b	0.8609	0.0276	-0.0012	0.2458
q10c	0.9011	-0.0485	-0.0224	0.2154
q10d	0.9039	-0.0477	-0.0072	0.2059
q10e	0.8724	-0.0123	0.0405	0.2300
q10f	0.8806	0.0147	-0.0050	0.2191
q10g	0.7171	0.1123	-0.0307	0.4393
q11a	-0.0799	0.7265	0.0326	0.4833
q11b	-0.0216	0.8490	-0.1415	0.3364
q11c	0.0160	0.7102	0.0275	0.4771
q11d	-0.0530	-0.0245	0.8019	0.3799
q11e	0.0046	-0.0835	0.8797	0.2600
q11f	0.1117	0.4943	0.1440	0.6460
q11g	0.0456	0.0546	0.6743	0.5064

Factor rotation matrix

	Factor1	Factor2	Factor3
Factor1	0.9786	0.4333	0.3249
Factor2	-0.2039	0.6863	0.7275
Factor3	0.0272	-0.5841	0.6043

. factor q10* q11*, pcf factors(2)
(obs=483)

Factor analysis/correlation Number of obs = 483
Method: principal-component factors Retained factors = 2
Rotation: (unrotated) Number of params = 27

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	5.33877	3.21446	0.3813	0.3813
Factor2	2.12432	0.68194	0.1517	0.5331
Factor3	1.44237	0.62072	0.1030	0.6361
Factor4	0.82165	0.10191	0.0587	0.6948
Factor5	0.71975	0.03935	0.0514	0.7462
Factor6	0.68039	0.08318	0.0486	0.7948
Factor7	0.59721	0.06107	0.0427	0.8375
Factor8	0.53614	0.09944	0.0383	0.8758
Factor9	0.43670	0.02698	0.0312	0.9070
Factor10	0.40972	0.14961	0.0293	0.9362
Factor11	0.26010	0.01206	0.0186	0.9548
Factor12	0.24804	0.03819	0.0177	0.9725
Factor13	0.20985	0.03487	0.0150	0.9875
Factor14	0.17498	.	0.0125	1.0000

LR test: independent vs. saturated: $\chi^2(91) = 3352.32$ Prob> $\chi^2 = 0.0000$

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
q10a	0.7154	-0.1893	0.4524
q10b	0.8540	-0.1575	0.2458
q10c	0.8535	-0.2334	0.2170
q10d	0.8616	-0.2223	0.2082
q10e	0.8616	-0.1569	0.2331
q10f	0.8665	-0.1731	0.2193
q10g	0.7404	-0.0915	0.4435
q11a	0.2472	0.5386	0.6488
q11b	0.3008	0.4841	0.6752
q11c	0.3324	0.5042	0.6353
q11d	0.1980	0.5774	0.6274
q11e	0.2541	0.5817	0.5970
q11f	0.3702	0.4212	0.6855
q11g	0.2874	0.5187	0.6484

* Collective Responsibility - Peer-assessed
 alpha q10*, item generate(coll_resp_peer)

Test scale = mean(unstandardized items)

Item	Obs	Sign	average			alpha
			item-test correlation	item-rest correlation	inter-item covariance	
q10a	520	+	0.7464	0.6456	.6938328	0.9294
q10b	516	+	0.8627	0.8068	.6584216	0.9130
q10c	516	+	0.8733	0.8278	.6745632	0.9116
q10d	518	+	0.8829	0.8376	.6610231	0.9101

q10e		519	+	0.8775	0.8249	.6440612	0.9107
q10f		518	+	0.8751	0.8293	.6719038	0.9114
q10g		514	+	0.7671	0.6676	.6782415	0.9281
-----+							
Test scale					.6688638	0.9275	

. * Collective Responsibility - Self-assessed
. alpha q11*, item generate(coll_resp_self)

Test scale = mean(unstandardized items)

Item		Obs	Sign	average			alpha
				item-test correlation	item-rest correlation	inter-item covariance	
q11a		517	+	0.5905	0.4215	.1339436	0.6455
q11b		514	+	0.6075	0.4014	.1265813	0.6475
q11c		514	+	0.6397	0.4328	.1213555	0.6394
q11d		515	+	0.5659	0.3582	.1327287	0.6573
q11e		515	+	0.5846	0.3913	.1307391	0.6480
q11f		515	+	0.5673	0.3790	.1341543	0.6531
q11g		510	+	0.5772	0.3669	.1318282	0.6567
-----+							
Test scale					.1301891	0.6840	

. * Collective Responsibility - Combined
. alpha q10* q11*, item generate(coll_resp_all)

Test scale = mean(unstandardized items)

Item		Obs	Sign	average			alpha
				item-test correlation	item-rest correlation	inter-item covariance	
q10a		520	+	0.6722	0.5777	.224231	0.8439
q10b		516	+	0.7999	0.7405	.2147478	0.8328
q10c		516	+	0.7838	0.7282	.2210362	0.8347
q10d		518	+	0.7975	0.7413	.2175242	0.8332
q10e		519	+	0.8141	0.7561	.2114415	0.8312
q10f		518	+	0.8072	0.7556	.2185098	0.8329
q10g		514	+	0.7190	0.6307	.2182214	0.8406
q11a		517	+	0.3327	0.2516	.2637384	0.8596
q11b		514	+	0.3842	0.2879	.2577016	0.8591
q11c		514	+	0.4289	0.3292	.2541858	0.8575
q11d		515	+	0.3136	0.2167	.263562	0.8623
q11e		515	+	0.3515	0.2609	.2613047	0.8599
q11f		515	+	0.4222	0.3388	.2569141	0.8563
q11g		510	+	0.3660	0.2703	.2593191	0.8597
-----+							
Test scale					.2387523	0.8576	

. * Teacher Control
 . alpha q12*, item generate(teacher_control)

Test scale = mean(unstandardized items)

Item	Obs	Sign	average			alpha
			item-test correlation	item-rest correlation	inter-item covariance	
q12a	514	+	0.7653	0.5436	.2043578	0.7071
q12b	511	+	0.8357	0.6742	.1750214	0.6449
q12c	510	+	0.7822	0.6531	.2222835	0.6691
q12d	514	+	0.5803	0.4063	.2919809	0.7471
q12e	510	+	0.5701	0.3699	.2898253	0.7561
Test scale				.2366865	0.7537	

. * Teacher-Teacher Trust
 . alpha q13a q14*, item generate(trust_teacher)

Test scale = mean(unstandardized items)

Item	Obs	Sign	average			alpha
			item-test correlation	item-rest correlation	inter-item covariance	
q13a	514	+	0.6824	0.5564	.2803764	0.8817
q14a	518	+	0.7497	0.6406	.2635823	0.8684
q14b	514	+	0.8583	0.7777	.2297357	0.8444
q14c	518	+	0.8016	0.6852	.2388515	0.8621
q14d	513	+	0.8385	0.7557	.2399199	0.8495
q14e	510	+	0.8278	0.7436	.2457275	0.8527
Test scale				.249697	0.8809	

. * Teacher-Principal Trust
 . alpha q13b q15*, item generate(trust_principal)

Test scale = mean(unstandardized items)

Item	Obs	Sign	average			alpha
			item-test correlation	item-rest correlation	inter-item covariance	
q13b	493	+	0.7999	0.7377	.4798658	0.9484
q15a	494	+	0.8059	0.7460	.4822358	0.9475
q15b	488	+	0.8741	0.8279	.4497356	0.9424

q15c		488	+	0.9274	0.8989	.4354687	0.9379
q15d		490	+	0.9050	0.8692	.443935	0.9399
q15e		491	+	0.8050	0.7509	.4861017	0.9476
q15f		485	+	0.8832	0.8414	.4542582	0.9418
q15g		486	+	0.8751	0.8339	.4611497	0.9423
-----+							
Test scale				.4615839			0.9503

. * Instructional Leadership
. alpha q16*, item generate(instruct_lead)

Test scale = mean(unstandardized items)

Item		Obs	Sign	average			alpha
				item-test correlation	item-rest correlation	inter-item covariance	
q16a		494	+	0.8571	0.8014	.3958906	0.9490
q16b		495	+	0.8873	0.8451	.3963894	0.9453
q16c		496	+	0.8303	0.7703	.4122492	0.9516
q16d		494	+	0.9281	0.9008	.3888755	0.9409
q16e		494	+	0.9208	0.8915	.3925531	0.9417
q16f		493	+	0.8795	0.8320	.391533	0.9463
q16g		489	+	0.8905	0.8418	.3778863	0.9460
-----+							
Test scale				.3936155			0.9532

. * Innovation
. alpha q17* q18*, item generate(innovation)

Test scale = mean(unstandardized items)

Item		Obs	Sign	average			alpha
				item-test correlation	item-rest correlation	inter-item covariance	
q17a		511	+	0.7902	0.7159	.49072	0.8948
q17b		512	+	0.7237	0.6351	.5134302	0.9041
q17c		513	+	0.7750	0.6991	.4994028	0.8971
q18a		516	+	0.8806	0.7991	.3917087	0.8827
q18b		517	+	0.9008	0.8358	.3916724	0.8743
q18c		513	+	0.9010	0.8387	.3957169	0.8738
-----+							
Test scale				.4471643			0.9058

. pwcrr coll_resp_* teacher_control trust_* instruct_lead innovation, sig
| coll_r~r coll_r~f coll_r~l teache~l trust_~r trust_~l instru~d

```

-----+-----
coll_resp_~r | 1.0000
|
coll_resp_~f | 0.2671 1.0000
| 0.0000
|
coll_resp_~l | 0.9167 0.6273 1.0000
| 0.0000 0.0000
|
teacher_co~l | 0.3463 0.2773 0.3950 1.0000
| 0.0000 0.0000 0.0000
|
trust_tea~r | 0.5993 0.2992 0.6058 0.3587 1.0000
| 0.0000 0.0000 0.0000 0.0000
|
trust_prin~l | 0.4366 0.3146 0.4813 0.3705 0.5196 1.0000
| 0.0000 0.0000 0.0000 0.0000 0.0000
|
instruct_l~d | 0.5172 0.3244 0.5519 0.2729 0.4597 0.7701 1.0000
| 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
|
innovation | 0.7675 0.3427 0.7596 0.3599 0.6198 0.5301 0.6411
| 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
|
| innova~n
-----+-----
innovation | 1.0000
|

```

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. log close
  log: C:\James Data\RETA\Chicago\Stata exports\Spring 2007 - Attitude Measure Alphas.txt
  log type: text
  closed on: [Date]
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```