Determining optimal scales in studies of JPSSM

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ABSTRACT

Typically, when using existing scales, researchers conduct a confirmatory factor analysis and estimate reliability indices such as Cronbach alpha. Results are then used to select items that are subsequently incorporated in models. However, this process is inefficient as results from several studies consistently indicate that certain factors have low factor loadings. This study addressed this issue by investigating key psychometric properties of scales frequently used in sales. It estimated average factor loading and Cronbach alpha for the scales of all empirical studies published in JPSSM over a 30-year period and proposed optimal scales with high reliability and an adequate number of items. Users can choose optimal scale items that fit their specific research needs without worrying about issues of reliability and scale length.

Keywords: JPSSM, Optimal scale, Reliability, Job performance, Job satisfaction

INTRODUCTION

Surveys play a very important role in personal selling and sales management research. Williams and Plouffe (2007) analyzed 1,012 sales articles published across 15 key journals over a 20-year period (1983–2002) and found that 73 percent of these articles were empirical studies while 76 percent of these used surveys. In a subsequent study, Plouffe, Williams, and Wachner (2008) analyzed 1,270 sales articles across 16 key journals over a 24-year period (1983–2006) and found that 78 percent of these articles were empirical studies while 77 percent of these used surveys. This indicates an increasing trend in the proportion of empirical studies (from 73 to 78 percent) and in the use of surveys (from 76 to 77 percent) in sales studies.

The above evidence also shows that surveys are the most widely used approach for conducting sales research. However, researchers have raised important issues regarding the use of surveys and the scales contained therein. Determining an optimal number of items to represent a construct is central to this debate. From one perspective, as argued by Bruner and Hensel (1993), single-item measures may not adequately represent a latent construct. Yet, from another perspective, adding unnecessary items increases survey costs, renders lower response rates, and compromises the quality of data owing to response fatigue (Dillman 2000). In addition, reliability indices such as Cronbach alpha can be artificially inflated by adding items (Peterson 1994). Researchers have addressed these issues by proposing shorter-version scales (e.g., Lagace, Goolsby, and Gassenheimer 1993; Panagopoulos and Avlontis 2008). However, this practice is also questionable since scale reduction is typically based on a single study. The characteristics of the study and its context would ultimately define the choice of items to be retained and eliminated.

This study addresses the "optimal" item issue by analyzing item properties from 260 studies published in JPSSM over a 30-year period. First, scales are collected and Cronbach alphas are re-estimated by controlling for the number of items. Then, average factor loadings are estimated for each scale item. This information is used to propose scales with an optimal number of items.

LITERATURE REVIEW

Hair et al. (2006) pointed out that no single measure could perfectly represent reliability. However, as Cronbach alpha (α) is the most widely used index to estimate reliability, this study begins with discussing the attributes and estimates of Cronbach alpha.

There are three important meta-analysis studies with α estimates: Churchill and Peter (1984), Bruner and Hensel (1993), and Peterson (1994). Churchill and Peter (1984) collected 152 Cronbach alphas from five marketing journals (1964–1982), ACR Proceedings/Advances in Consumer Research, and AMA Proceedings (1972–1982). They found that Cronbach alpha is positively related to the number of items, as more items increase the ratio of the sum of inter-item covariances to total variance.

Bruner and Hensel (1993) reviewed six key marketing journals from 1980 to 1989 and collected 750 Cronbach alphas. They tested the relationships amongst internal consistency, number of scale items, sample size, time etc. and determined a positive correlation between Cronbach alpha and the number of items. Peterson (1994) examined several psychological and marketing journals as well as two conference proceedings to collect 4,286 Cronbach alphas. He found that Cronbach alpha has a positive relationship with the number of items. Moreover, he

found that "… Cronbach alpha does not appear to systematically increase once there are more than three items in a scale" because of "… the heterogeneity in coefficient alpha values within a particular number of scale items because of differences in constructs being measured … scale type and format differences, sampling errors…" (p. 390).

Based on the findings of the aforementioned three articles, this study analyzes the formulas of Cronbach alpha in Cronbach (1951) to determine the cause and the solution for the inflation of Cronbach alpha. Cronbach's (1951) formula to calculate Cronbach alpha is either:

$$\alpha = \frac{k}{k-1}\left(1-\frac{\sum \sigma_i^2}{\sigma_T^2}\right) = \frac{k}{k-1}\left(\frac{\sum_{i\neq}\sum_{j}\sigma_{ij}}{\sigma_T^2}\right), \quad (1)$$

where α is the Cronbach alpha (estimated reliability), k is the number of items in the scale, σ_i^2 is the variance of each scale item (i = 1, 2 … k), σ_{ij} is the covariance between the ith and jth items, and σ_T^2 represents the variance of the scale.

or (Spearman-Brown prophecy formula)

$$\alpha = \frac{k\bar{r}}{1+(k-1)\bar{r}}, \quad (2)$$

where $\bar{r}$ represents the average inter-item correlation.

In equation 1, as k increases, k/(k-1) decreases from 2 to 1 (as n →∞). However, the ratio of the sum of inter-item covariances to total variance increases faster than the decrease in k/(k-1). Nunnally (1967) explained that as long as the new items covary (a rational researcher would not add unrelated items), the total variance imposes a severe limitation on the size, while the sum of inter-item covariances imposes a much lesser limit. To solve for the inflation, Cronbach (1951) applied the Spearman-Brown prophecy formula, shown in equation 2, and provided "an index unrelated to test length," the average inter-item correlation, or alternatively the correction of alpha α_t.

$$\alpha_t = \bar{r} = \frac{\alpha}{k+(1-k)\alpha} \quad (3)$$

Cronbach (1951) specified that a high inter-item correlation is a sufficient but not necessary condition for a high Cronbach alpha, because a low inter-item correlation could be inflated to a high Cronbach alpha by the number of items. Therefore, this study uses α_t (correction of alpha), as shown in equation 3, as the index to estimate the reliability of scales. However, the average inter-item correlation just represents the average value, so there may be heterogeneity in items. Therefore, factor loading is used to determine whether to eliminate the items or not. This is also supported by Kopalle and Lehmann (1997, p. 189) who studied "the effect of the elimination of items from a scale so that only those items that correlate highly are chosen."

METHODOLOGY

To achieve the research purposes, this study reviewed all the scales used in empirical articles in JPSSM, the most authoritative journal in sales research. The time period covers 30

years from the first issue in 1980 to the fourth issue in 2009. Scales were collected according to the following five criteria:

1. Include all empirical articles using scales with primary or secondary data
2. Include all scales measuring latent variables
3. Exclude scenario measures, such as Valentine and Barnett's (2007) use of a scenario-based approach to measure the stages of the ethical decision-making process
4. Exclude dichotomous/definition measures (respondents choose one from the given statements)
5. Include different scales (short or long version) measuring the same latent variable, and they were treated as individual scales in counting frequency. For example, Flaherty et al. (2009) used supervisor-rated and self-rated performance to measure job performance

Subsequently, 1,066 scales were collected from 260 articles. Peterson (1994) mentioned that the Cronbach alpha may be influenced by scale type, and in practice, scale category would be more efficient for users to find and compare relative scales measuring the same latent variables. Therefore, the study classified the 1,066 scales into 393 scale categories according to the scales' original definitions and their actual items, rather than their scale title in the article. For example, "Job stress" in Jaramillo et al. (2009) and "Job tension" in Ramaswami, Srinivasan, and Gorton (1997) are classified in the "Felt stress" category.

There are either one or several scales in each scale category. This study calculated α_t using equation 3 to remove the influence of the number of items and then ranked the scales in the same scale category according to α_t. If a scale was used more than once, the number of items would be the simple average and Cronbach alpha would be the weighted average of the sample size (larger sample size has more weight). Composite Reliability (CR) and Average Variance Extracted (AVE) were calculated for further evaluation, although they were not provided in most articles. These scale rankings help users to choose a highly reliable scale with an appropriate number of items.

When a scale is used either once or several times using the same items, the number of items (k), Cronbach alpha (α), and correction of alpha (α_t) can be easily calculated without any ambiguity. However, when a scale is used more than once with different number of items (the results after choosing the high factor loading items), α_t would be calculated based on the average of k and the weighted average of α. Therefore, α_t under a given k estimates reliability, and factor loading is used to determine which items are included. Hair et al. (2006) specified that "Factor loadings are the correlation of each variable and the factor." In other words, eliminating items with low factor loadings will increase α_t (Kopalle and Lehmann 1997), and the given k determines the final number of items. Therefore, scales with high reliability and an optimal number of items can be defined.

RESULTS

Table 1 shows the top 35 out of the total 393 scale categories in the order of their respective frequencies. The first one, "Job performance," with a frequency of 82 implies that "Job performance" has been used 82 times across the 30-year period. The top six scale categories with frequency above 30 are "Job performance," "Job satisfaction," "Organizational commitment," "Role ambiguity," "Intention to leave," and "Role conflict." An interesting finding is that the top six scale categories, comprising 1.5% (6/393) of the overall scale categories, cover 30% (316/1066) of scale usage. Obviously, we can determine intensive usage

in some scale categories. Therefore, this study focuses on the top two categories, "Job performance" and "Job satisfaction," and discusses their high reliable scales with the optimal number of items.

Job Performance

In the "Job performance" category, Table 2 presents the 32 scales with their frequency, number of items, Cronbach alpha, correction of alpha, composite reliability, and average variance extracted. The frequency of "Job performance" is 82, but the total frequency in Table 2 is 62 after excluding records with missing Cronbach alpha. Cronbach alpha (α) has a range from .66 to .95, and the average of the number of items (k) ranges from 2 to 87. Correction of alpha (α_t) ranges from .142 to .852.

Based on the rankings ordered by α_t, the last four scales have more than three dimensions with more than 10 items. The most significant scale is the one used by Churchill et al. (1985), which had 87 items in six dimensions (personal factors, skill, role, aptitude, motivation, and organizational/environmental factors). Its Cronbach alpha is very high at .95, but α_t is only .179. The reason is that α_t measures the average inter-item correlation, so in multidimensional scales, items that are highly correlated in their dimension may have low correlation between dimensions. Netemeyer, Maxham, and Pulling (2005) have the highest α_t at .826 with four items in one dimension. The scale contains items such as "I voluntarily assist customers even if it means going beyond job requirements" and "I often help customers with problems beyond what is expected or required." In view of this, the measures of job performance are demonstrated (as indicated in Table 4).

Job Satisfaction

Table 3 presents the 26 scales in the "Job satisfaction" category. The total frequency of "Job satisfaction" across the 30-year period is 71, but the total frequency in Table 3 is 61 owing to the missing Cronbach alpha and one unknown source. Cronbach alpha (α) ranges from .45 to .94, and the average of the number of items (k) ranges from 2 to 59. Correction of alpha (α_t) ranges from .076 to .758. Similar to the scales with low α_t in "Job performance," Smith, Kendall, and Hulin (1969), Comer, Machleit, and Lagace (1989), and Schletzer (1965) used multidimensional scales with more than 10 items. In particular, the scales used by Smith, Kendall, and Hulin (1969) have as many as 72 original items in seven dimensions (pay, promotion, work, supervisor, coworkers, customers, and overall). It has a high Cronbach alpha at .83, but α_t is only .076. Ping's (1993) scale has the highest α_t at .758 with five items in one dimension. The scale contains items such as "All in all, my relationship with my company is very satisfactory" and "All in all, my company is very fair with me." The measures of job satisfaction are demonstrated (see Table 5).

DISCUSSION

It is unsurprising that multidimensional scales have more items, high Cronbach alphas, and low values of α_t. Moreover, it is not unusual to find that researchers have only adapted parts of these multidimensional scales. For instance, Behrman and Perreault's (1982) scale measuring "Job performance" was used 15 times in 30 years, applying as less as three items and as many as

26 items. Smith, Kendall, and Hulin's (1969) scale measuring "Job satisfaction" was used 10 times, and the number of items applied varies from 18 to 72. Without considering the original number of dimensions in the scales, 84% (52/62) of scales in "Job performance" and 77% of scales (47/61) in "Job satisfaction" are unidimensional. Therefore, the estimated reliability α_t of a scale relies neither on the number of items nor on the number of dimensions (unidimensional scale does not guarantee a high α_t).

According to Table 2 and 3, this study finds that scales with frequency of more than five are few (at least five effect sizes have been mentioned in Arthur et al. 2003). Table 2 has three scales used by Sujan, Weitz, and Kumar (1994); Behrman and Perreault (1982); and Cravens et al. (1993) having a frequency of 7, 15, and 6 times respectively. Similarly, Table 3 has three scales used by Churchill, Ford, and Walker (1974); Comer, Machleit, and Lagace (1989); and Smith, Kendall, and Hulin (1969) having a frequency of 10, 5, and 10 times respectively. Ideally, a scale with a frequency of more than five and a high α_t is our best choice, for example, Sujan, Weitz, and Kumar (1994). Yet, because of the limited number of scales with a frequency of more than five and a value of α_t, this study demonstrates the general optimal scales with k given items.

Table 4 shows the four items of Netemeyer, Maxham, and Pulling (2005) and their factor loadings. However, the goal of this study is to choose items according to factor loadings under a given k and α_t. Sujan, Weitz, and Kumar (1994) has k = 6.5 and α_t = .516, so in the second part of Table 4, the first six items were chosen and the seventh was eliminated (lower factor loading). This way, α_t can be at least .516. The reason that the values of k and α_t were followed is that these values are known and easily comparable with other scales. If more items (the sixth and the fifth) were eliminated, it would be possible to reach a higher but unknown α_t (> .516). However, we can know neither the reliability nor the comparability with other scales. Table 5, similar to Table 4, shows the scale with the highest α_t used by Ping (1993) and the one with k = 6 and α_t = .527 used by Hackman and Oldham (1974, 1975). In this study, the first six items with the highest factor loadings were selected. The key point is that after evaluating k and α_t, researchers can use appropriate scales efficiently with clearly identified items.

CONCLUSIONS

Reliability and validity were tested when introducing a new scale, but traditionally, researchers continue to conduct factor analysis and then compute the Cronbach alpha when using existing scales. This process not only shows the homogeneity but also generates appropriate Cronbach alpha by eliminating the low factor loading items; however, it seems inefficient. This study intends to provide a new perspective on the efficient use of existing scales. By collecting relative data of scale usage in JPSSM over a 30-year period, the study assessed scales through correction of alpha rather than Cronbach alpha, which can be inflated by the number of items. Further, under a given number of items and a given correction of alpha, the items with factor loadings were identified. The optimal scales were formed through these processes.

Therefore, the theoretical implication is that researchers can use these existing scales more efficiently than ever. They can choose an appropriate number of items under a given reliability, because long scales just make respondents impatient and reduce the accuracy of the scale. DeVellis (1991) also argues that a more reliable scale can use a smaller sample size while having the same statistical power. The managerial implication of this is also significant. Executives can use these optimal scales without calculating factor loadings and Cronbach alphas and can obtain reliable results. In addition, once the unique database of optimal scales is

accessible online, users can choose the appropriate scales under different categories. Evidently, the optimal scales save time and money for both users and respondents.

However, this study has several limitations. First, many scales have been used only once; therefore, the information about the number of items and Cronbach alpha may bias the assessment. Moreover, the frequency of at least five (Arthur et al. 2003) was not applied in the study. Second, the correction of alpha may not be appropriate to evaluate multidimensional scales. Voss, Stem, and Fotopoulos (2000, p. 179) pointed out that "Inter-item correlations cannot distinguish between items from the same domain and items from a different, but highly correlated domain." Third, many studies either adapted existing scales or added a new item. These changes are difficult to find and their impacts are difficult to evaluate owing to incomplete information. Fourth, Peterson (1994) suggested other factors influencing scale reliability, such as scale type, format differences, and sampling errors, which were not considered in this study. In addition, optimal scales were defined for each individual category, so there is no optimal scale superior to all categories.

This study is just the beginning of the research on optimal scales, and this method can be applied to different categories. First, future research would be required to enrich the relative data of scales obtained from major marketing journals (JM, JMR, etc.). Therefore, an ample data set can represent different sets of optimal scales. Other reliability indices (composite reliability, average variance extracted) can be considered, rather than focusing only on correction of alpha, so that reliability can be assessed comprehensively. Furthermore, more attributes of scale usage can be added, such as scale format, sample type, etc. Scales can be classified according to these attributes, so that users can choose optimal scales fitting their specific needs.

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Table 1
Frequency Ranking of Scales Category (The Top 35)

Scale Category 1980-2009	Frequency	Cumulated Frequency	Cumulated percentage(%)
Job performance	82	82	7.69
Job satisfaction	71	153	14.35
Organizational commitment	52	205	19.23
Role ambiguity	45	250	23.45
Intention to leave	33	283	26.55
Role conflict	33	316	29.64
Adaptive selling	15	331	31.05
Felt stress	15	346	32.46
Customer orientation	14	360	33.77
Motivation_Intrinsic	12	372	34.90
Job involvement	11	383	35.93
Self-efficacy	11	394	36.96
Trust _Managers-Salespeople	11	405	37.99
Motivation	10	415	38.93
Trust_Buyers-Salespeople	10	425	39.87
Expectations	9	434	40.71
Trust	9	443	41.56
Effectiveness	8	451	42.31
Effort	8	459	43.06
Motivation_Extrinsic	8	467	43.81
Satisfaction_Buyers-Salespeople	8	475	44.56
Commitment_Buyers-Salespeople	7	482	45.22
Ethical climate	7	489	45.87
Learning orientation	7	496	46.53
Locus of Control	7	503	47.19
Organizational citizenship behaviors	7	510	47.84
Task attribute/characteristics	7	517	48.50
Attributions_Salespeople	5	522	48.97
Burnout	5	527	49.44
Control strategy	5	532	49.91
Ethical values	5	537	50.38
Procedural justice	5	542	50.84
Self-esteem	5	547	51.31
Social desirability_Marlowe-Crown	5	552	51.78
Trust_Coworkers	5	557	52.25
Number of scale category			393
Number of scale			1066
Number of article			260
Average number of scale per article			4.1

Note: The shadow part represents that the top six scale categories, 1.5% (6/393) of scale categories, cover 30% (316/1066) of scale usage.

Table 2
Scales in Job Performance (Ranked by α_t)

Source	Fq	k (Range)	α	α_t	CR	AVE
Netemeyer, Maxham, and Pulling (2005)	1	4	0.950	0.826		
Ramaswami, Srinivasan, and Gorton (1997)	1	3	0.920	0.793		
Pruden and Reese (1971)	1	2	0.860	0.754		
Maxwell, Reed, Saker, and Story (2005)	1	3	0.890	0.730		
Frazier and Rody (1991)	1	3	0.860	0.672	0.9	0.75
Evans, Landry, Li, and Zou (2007)	1	6	0.920	0.657	0.92	0.66
Marks, Vorhies, and Badovick (1996)	1	4	0.870	0.626		
Deshpande, Farley, and Webster (1993)	1	3	0.830	0.619		
Bagozzi (1978)	1	3	0.820	0.603		
Pilling, Donthu, and Henson (1999)	1	3	0.820	0.603		
Dwyer, Hill, and Martin (2000)	2	5	0.875	0.583		
Bagozzi (1980)	1	5	0.870	0.572		
Giacobbe, Jackson Jr., Crosby, and Bridges (2006)	1	3	0.793	0.561		
DeCarlo, Teas, and McElroy (1997)	2	3	0.785	0.549		
Yammarino and Dubinsky (1990)	1	10	0.920	0.535		
Sujan, Weitz, and Kumar (1994)	7	6.5 (6-7)	0.874	0.516	0.92	0.7
DelVecchio (1998)	2	5 (3-7)	0.838	0.508		
Brown (1988)	1	9	0.900	0.500		
Low, Gravens, Grant, and Moncrief (2001)	1	9	0.900	0.500		
Futrell and Parasuraman (1984)	2	9 (8-10)	0.899	0.497		
Russ, McNeilly, and Comer (1996)	1	9	0.890	0.473		
Sengupta, Krapfel, and Pusateri (1997)	1	5	0.800	0.444		
Behrman and Perreault (1984)	2	5.5 (5-6)	0.795	0.414		
Leach, Liu, and Johnston (2005)	1	3	0.660	0.393		
Dubinsky and Mattson (1979)	1	6	0.770	0.358		
Behrman and Perreault (1982)	15	9 (3-26)	0.816	0.330	0.776	0.549
Hackman and Oldham (1980)	1	5	0.690	0.308		
Piercy, Cravens, and Lane (2001)	1	8	0.760	0.284		
Cron, Jackofsky, and Slocum, Jr. (1993)	1	17	0.830	0.223		
Cravens, Ingram, LaForge, and Young (1993)	6	10.4 (6-25)	0.747	0.221		
Churchill, Ford, Hartley, and Walker (1985)	1	87	0.950	0.179		
Apasu-Gbotsu (1982)	1	19	0.758	0.142		

Note:
Fq: Frequency
k: The number of items
CR: Composite Reliability
AVE: Average Variance Extracted
Blank cells represent missing data.

Table 3
Scales in Job Satisfaction (Ranked by α_t)

Source	Fq	k (Range)	α	α_t	CR	AVE
Ping (1993)	1	5	0.940	0.758		0.72
Lagace, Goolsby, and Gassenheimer (1993)	1	4	0.920	0.742		
Netemeyer, Brashear-Alejandro, and Boles (2004)	2	3	0.880	0.710	0.885	0.725
Jaworski and Kohli (1991)	1	5	0.900	0.643		
Churchill, Ford, and Walker (1979)	1	7	0.920	0.622		
Hunt and Chonko (1984)	1	3	0.810	0.587		
Spector (1985)	3	3	0.804	0.578	0.748	0.513
Brayfield and Rothe (1951)	1	6	0.880	0.550		
Hackman and Oldham (1974, 1975)	2	6 (3-9)	0.870	0.527		
Dubinsky and Mattson (1979)	1	6	0.870	0.527		
Hrebiniak and Alutto (1972)	1	5	0.820	0.477		
Brown and Peterson (1994)	3	4	0.750	0.429	0.76	0.52
Hackman and Oldham (1980)	2	3.5 (3-4)	0.710	0.412		
O'Reilly and Caldwell (1981)	1	2	0.570	0.399	0.58	0.41
Churchill, Ford, and Walker (1974)	10	12.75 (4-28)	0.894	0.398		0.6
Churchill, Ford, and Walker (1976)	2	10 (6-14)	0.840	0.344		
Singh, Verbeke, and Rhoads (1996)	1	6	0.740	0.322		
Wood, Chonko, and Hunt (1986)	2	11.5 (9-14)	0.820	0.284		
Ruekert and Churchill (1984)	1	10	0.797	0.282		
Porter and Lawler (1968)	2	13	0.821	0.261		
Weiss, Dawis, England, and Lofquist (1967)	2	15 (9-21)	0.840	0.259		
Bagozzi (1980)	3	8	0.692	0.219		
Schletzer (1965)	1	15	0.797	0.207		
Comer, Machleit, and Lagace (1989)	5	23.75 (13-28)	0.858	0.203		
Bagozzi (1978)	1	8	0.450	0.093		
Smith, Kendall, and Hulin (1969)	10	59 (18-72)	0.830	0.076		

Note:
Fq: Frequency
k: The number of items
CR: Composite Reliability
AVE: Average Variance Extracted
Blank cells represent missing data.

Table 4
Factor Loadings of Items of Scales in Job Performance

Item	Netemeyer, Maxham, and Pulling (2005)	Average Factor loading
1	I voluntarily assist customers even if it means going beyond job requirements.	0.96
2	I often help customers with problems beyond what is expected or required.	0.95
3	I am willing to go out of my way to make a customer satisfied.	0.89
4	I go above and beyond the "call of duty" when serving the customers.	0.87

Item	Sujan, Weitz, and Kumar (1994)	Average Factor loading
1	Generating a high level of dollar sales.	0.822
2	Exceeding sales targets.	0.819
3	Quickly generating a high level of dollar sales.	0.777
4	Contributing to your company's acquiring a good market share.	0.758
5	Assisting your sales supervisor meet his/her goals.	0.750
6	Identifying and selling to major accounts in your territory.	0.727
7	Selling high profit-margin products.	0.652

Table 5
Factor Loadings of Items of Scales in Job Satisfaction

Item	Ping (1993)	Average Factor loading
1	All in all, my relationship with my "company" is very satisfactory. Ping (2007)	
2	All in all, my "primary wholesaler" is very fair with me.	
3	Overall, my "primary wholesaler" is a good company to do business with.	
4	In general am pretty satisfied with my relationship with my "primary wholesaler."	
5	Overall, my "primary wholesaler" treats me very fairly.	

Item	Hackman and Oldham (1974, 1975)	Average Factor loading
1	Generally speaking, I am very satisfied with this job.	0.905
2	The feelings of worthwhile accomplishment I get.	0.826
3	I am generally satisfied with the kind of work I do in this job.	0.817
4	The amount of personal growth and development I receive.	0.764
5	The amount of challenge.	0.762
6	The chance to get to know other people.	0.758
7	How secure things look for me in the future.	0.738
8	How my contributions to my company result in earnings for me.	0.737
9	The amount of independent though and action I can exercise.	0.709
10	The chance to help other people.	0.661
11	The poeople with whom I talk and work.	0.660
12	I frequently think of quitting this job.	0.650

Note:
Ping (2007) replaced "primary wholesaler" in Ping (1993) with "company."
Blank cells represent missing data.