

**Time for Reflection: A Factor Analytic Study of the
Communication Satisfaction Instrument**

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Abstract

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The purpose of this study was to explore the usefulness of the factor structure for the Communication Satisfaction Questionnaire as originally purposed by Downs and Hazen(1977). Using a database composed of 20 different companies and approximately 1500 individuals three specific questions were asked:

- 1) Is the suggested 8-factor solution reasonable?
- 2) Is the instrument equally useful for supervisory and nonsupervisory personnel?
- 3) Is the instrument stable across organizations?

Principal components analyses with varimax rotation were used to probe these questions.

The analyses suggested four specific observations. First, a 5-factor solution provides a better explanation of the data than the originally proposed 7-factor solution. Second, the 5-factor solution highlights two new dimensions of communication satisfaction not previously reported. Third, the instrument proves to be equally useful for supervisory and nonsupervisory personnel. Fourth, the 5-factor solution is stable for different organizational types. However, certain unique factors did emerge from the different organizational types.

One reason for scientific progress is that the instruments used by scientists are continually being refined. For instance, only in the last few years has it been possible to develop optical analog computers because of the greater precision wrought by atomic clocks which allow the breakdown of laser light into picoseconds(Seaton & Smith, 1983). Likewise, in order for social science to progress there is a need to continually assess and refine the instruments used in research. Scholars in organizational communication may not use atomic clocks and graduated cylinders but they should be equally interested in the quality of their most frequently used instruments: namely, paper-and-pencil tests. Such a concern was the impetus for this study.

One of the most widely used instruments in the area of organizational communication is the Downs and Hazen(1977) measure of communication satisfaction. Over a dozen dissertations or theses have used the instrument as an integral part of the research methodology(cf. Clampitt & Girard, 1986). Most recently Pincus(1986) used a version of the instrument in a field study of 327 hospital nurses. Job satisfaction and performance has been highly related to communication satisfaction. In particular, three of the communication satisfaction dimensions - Personal Feedback, Communication Climate, and Supervisory Communication - have been linked most strongly with job satisfaction and performance(cf. Pincus, 1986; Avery, 1977; or Nicholson, 1980).

But what if the instrument is less precise than presumed? Are these results still useful? What if the clocks used in a computer were calibrated inaccurately? Would those results be suspect? These are the kinds of questions that lead to the current study. In particular the following research questions were asked:

1. Is the proposed 8-factor solution used for the Communication Satisfaction instrument reasonable?
2. Is the instrument equally useful for supervisory and nonsupervisory personnel?
3. Is the instrument stable across organizations?

History

Downs and Hazen(1977) suggested that communication satisfaction was a multidimensional concept. The questionnaire they developed was constructed along these theoretical lines and yielded eight different dimensions upon factor analysis. The original development of the instrument was done with exceptional thoroughness and attentiveness to detail(Hecht,1978). In particular, after extensive factor analytic tests with different subject pools an original questionnaire of 88 items was reduced to 40 items. Eight factors emerged from the questionnaire with five items loading per dimension. More detail on the development is contained elsewhere(Downs & Hazen, 1977). However, a brief description of the factors is presented below:

Communication Climate reflects communication on both the organizational and personal level. On one hand, it includes item such as the extent to which communication in the organization motivates and stimulates workers to meet organizational goals and the extent to which it makes them identify with the organization. On the other, it includes estimates of whether or not people's attitudes toward communicating are healthy in this organization.

Supervisory Communication includes both upward and downward aspects of communicating with superiors. Three of the principal items include the extent to which a superior is open to ideas, the extent to which the supervisor listens and pays attention, and the extent to which guidance is offered in solving job-related problems.

Organizational Integration revolves around the degree to which individuals receive information about the immediate work environment. Items include the degree of satisfaction with information about

departmental plans, the requirements of their job, and some personnel news.

Media Quality deals with the extent to which meetings are well organized, written directives are short and clear, and the degree to which the amount of communication is about right.

Co-worker Communication concerns the extent to which horizontal and informal communication is accurate and free flowing. This factor also includes satisfaction with the activeness of the grapevine.

Corporate Information deals with broadest kind of information about the organization as a whole. It includes items on notification about changes, information about the organizations' financial standing, and information about the over-all policies and goals of the organization.

Personal Feedback is concerned with the workers need to know how they are being judged and how their performance is being appraised.

Subordinate Communication focuses on upward and downward communication with subordinates. Only workers in a supervisory capacity respond to these items which include subordinate responsiveness to downward communication and the extent to which subordinates initiate upward communication.

The first seven dimensions clearly are concerns for any employee.

However, the Subordinate Communication factor is only applicable to supervisory personnel. This becomes important later because only complete cases can be used to test the underlying factor structure.

Previous Research

In the original design of the questionnaire, the factors were selected on the basis of a principle-component factor analysis with a varimax rotation. The eight factor solution were deemed reasonable for three reasons: "1) these eight factors are the most consistent over the factor analytic work, 2) they account for the largest part of the variance, and 3) they represent the consistent separation of certain marker variables from earlier pilot studies"(Downs & Hazen, 1977, p. 69). A basic confirmation of the eight factor solution was also

revealed in the original work using 510 subjects from four different companies. Not only did the structure basically remain intact for the entire sample but importantly for each company as well. Moreover the size of the subject pool is well over the recommended minimum respondent-to-item ratio of five-to-one(Gorsuch1983).

Since then two researchers have analyzed the usefulness of the instrument using different data sets. This is obviously the only way to confirm the reasonableness of the eight factor solution. It would be analogous to having different researchers test the accuracy of an atomic clock under different environmental conditions.

Crino and White(1981) tested the instrument on 137 first-line supervisors from five textile mills. As in the original study, they used a principal components analysis with a varimax rotation. The eigenvalue cutoff points were designated at the traditional 1.0 level. Crino and White(1981) also tested the internal consistency of each subscale. The results indicated that the 8-factor solution was reasonable. Although the subscale structure was a bit problematic. The difficulty with this study, as the authors point out, is that the subject-to-item ratio of 3.4-to-1 was obviously below the recommended level.

Pincus(1986) in a footnote also briefly addressed the factor configuration issue. He added one factor to the original 8-factor design, which he named "Top Management Communication". Part of the rationale for adding this dimension comes from a theoretical concern. Pincus(1986) argues that each of the 8-dimensions can be decomposed into three basic categories - Relational Dimensions, Informational/Relational Dimensions, and Informational Dimensions. Whether these three categories are meant to be some kind of second order factors in a statistical sense is unclear(cf. Rummel, 1970, p.423-432) Table 1 shows how the factors align under this system. The new

factor seeks to fill a perceived gap among the Relational Dimensions.

Using a sample of 327 nurses at an urban hospital, Pincus(1986) reported that the factor analysis "largely confirmed the composition" of the three categories(p.403). Because of the focus of the study was not on the factor analytic analysis, it remains unclear if the 8-factor, or in this case the 9-factor, solution is equally acceptable. Moreover the eigenvalue cutoff points are not discussed in enough detail to fully answer these questions.

In sum, the research to date appears to be inconclusive. In one case the subject-to-item ratio is not at the appropriate level(Crino & White,1981) In another, not enough detail is not provided to clearly assess the impact on the overall usefulness of the measure(Pincus, 1986). Hence, research meant to fill these gaps is needed. Moreover, the process of testing instrumentation should be continuous scientific endeavor, just as one regularly tests the accuracy of a clock.

Methods

Databank

The databank established at a midwestern university allows for just such a testing process. Over the past six years 20 communication audits have been conducted in which the Communication Satisfaction Questionnaire has been used. Table 2 shows the various organizations contained in the databank. The firms range from a small trucking firm of 29 employees to a large local newspaper with 239 employees. Great care was taken to insure a high return rate of the questionnaires and the results were pleasing. The average return rate was 84.5%.

The sample size for the entire databank is 1494. Since some subjects did not complete certain items, some of the cases are incomplete and hence all these cases can not be used in the principal components analysis. Nevertheless the size of the databank insures that the Gorsuch(1983) respondent-to-item

recommendation is easily met.

Procedures

Using this databank a principal components analysis with a varimax rotation was conducted. The traditional eigenvalue cutoff point of 1.0 was used in selecting the factors. Since this procedure requires only complete cases, two separate analyses were actually performed. First with all subjects in the databank but excluding the items about Subordinate Communication. In the second analysis the Subordinate Communication items were included. In essence this meant that only supervisors were included in the second analysis because employees without subordinates did not complete these questionnaire items. The first analysis included 1362 cases and the second analysis consisted of 319. Both analyses met the Gorsuch(1983) respondent-to-item ratio criterion.

In order to assess the usefulness of the factor solution across organizational type, a principal components analysis with varimax rotation was performed on the four data sets formed by pooling responses by organizational type. The solutions obtained were then compared with the five factor solution obtained using the entire data set.

Results

The Obtained Factor Solution

The Subordinate Communication items were excluded from the first analysis, which meant that 35 items from the Communication Satisfaction Questionnaire were actually used. If the Downs-Hazen solution were stable, then within reasonable variation, a 7-factor solution should have been obtained from the databank. It was not. In fact a 5-factor solution was obtained. Table 3 shows the eigenvalues for the five factors obtained when the cutoff point was designated as 1.0. Table 4 presents 5-factor solution matrix when varimax rotated.

Why was a varimax rotation used? An oblique rotation - direct quartimin rotation for simple loadings - was also performed on the original unrotated factor matrix. The loadings of the variables that clustered on the factors obtained from an oblique analysis are not substantially higher than those obtained by the varimax rotation. That is, no variable central to a cluster was omitted by the varimax because of low loadings. Moreover, Downs and Hazen(1977) in their original study used a varimax rotation. Therefore, our analysis is based on varimax rotation for comparability, simplicity and conceptual clarity (Rummel, 1970).

How does the 5-factor solution compare to the hypothesized 7-factor solution? This is a more conceptual issue than a purely statistical one. In the original developmental work (Downs & Hazen, 1977) an item was deemed central to the factor if its loading equaled or exceeded .50 in the rotated (varimax) factor loading matrix. Using this same criteria Table 5 shows the items that satisfied this criterion when the 5-factor solution was used.

Only 23 of the original 35 items meet this criterion. However this might be expected. Three items each from the original Organizational Integration and Media Quality factors are not loaded according to this 5-factor solution. Two items from the Personal Feedback and Communication Climate factor did not meet the .50 breakoff point, while one item each from the Supervisor Communication and Peer Communication factors were excluded.(See Table 4)

Factors two, three, and four appear to maintain their conceptual integrity. Factor two contains items that are primarily associated with Corporate Informational concerns. Factor three is clearly composed of items that concern the relationship with ones' supervisor and factor four deals with personal feedback.

Factors one and five present the true curiosities. Factor one contains items from the original Peer Communication, Media Quality, and Communication

Climate factors. Conceptually all the items appear to relate to the general communication effectiveness of the organization. Items are related to both the abilities of individual communicators in the system as well as the general effectiveness of the communication system. The items also seem to blur the distinctions between formal and informal communication. Some researchers have called similar factors the general communication climate of the organization.

Factor five was one of the most surprising. Other items such as "informal communication is active and accurate" and "horizontal communication with other employees is accurate and free-flowing" would be expected to group along this dimension. This was **not** the case. Apparently the subjects in this databank distinguished between grapevine activity and other informal or peer types of communication.

In sum, the 5-factor solution suggests the following conceptual breakdown of communication satisfaction: General Communication Effectiveness, Corporate Information, Supervisory Relationships, Personal Feedback, and Grapevine Activity. Rescaling the instrument along these lines might prove revealing.

Seven-Factor Solution

Is it possible to come up with a seven factor solution? Of course. But that might defeat the entire purpose of a principal components analysis which is to find natural groupings of the variables in the data base. Nevertheless by adjusting the minimum eigenvalue level to .85 a seven factor solution can be obtained.

The critical question is whether .85 is an acceptable cutoff point.

Rummel(1970) argues:

The eigenvalue-one criterion is a neat and easy one to apply. It should not be employed, however without certain precautions. In some cases the criterion may discriminate between factors that have little difference in

eigenvalues. One factor may have an eigenvalue of 1.02 and the subsequent factor one of .96. For a study in which the eigenvalues may range, say, from 14.6 to 0.0, this small variance difference between factors appears hardly meaningful, yet one factor is retained and the other dropped. . . . Given the effect that various design decisions can have on the eigenvalues, it seems foolhardy to apply the eigenvalue-one criterion mechanically. (p363-4)

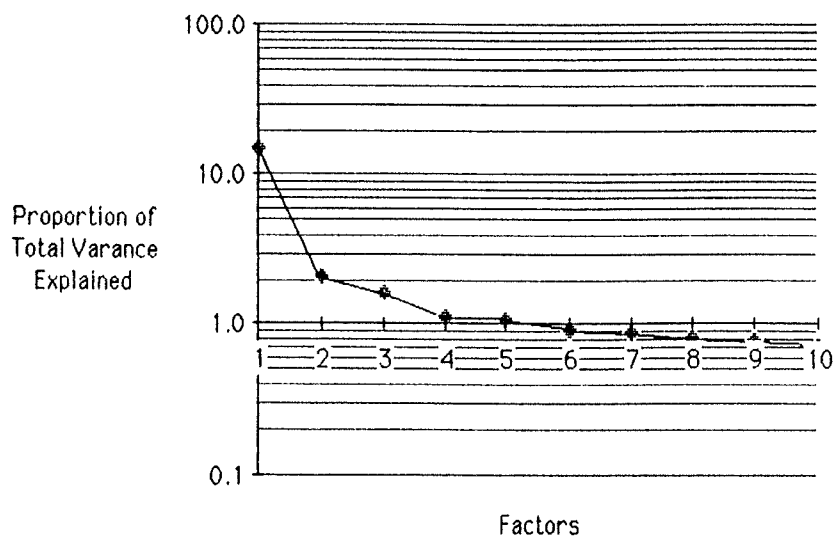
Coincidentally, the example he gives above roughly corresponds to the results obtained in this study.

Rummel then suggests that the eigenvalue-one criterion be used in conjunction with one of "discontinuity". This procedure basically involves examining the eigenvalues on a grid and finding the point where there is a sharp drop - a discontinuity - between the various factor solutions available.

Illustration 1 presents this analysis and demonstrates that the 5-factor solution is preferable. A 7-factor solution would seem almost as reasonable as 10-factor one. Little is gained by adding the two additional factors to the 5-factor solution.

Illustration 1

Discontinuity Analysis of Eigenvalues



Even if the .85 cutoff point is accepted, does the 7-factor solution resemble the hypothesized structure? Table 6 presents the varimax rotated factor loadings for the 7-factor solution. Factor 1 clearly corresponds to the Corporate Information dimension found **both** in the original study as well as the newly proposed 5-factor solution. The same is true of factors three and four which correspond fairly well with the Supervisory Relationship and Personal Feedback factors respectively.

Factors two, five, and seven are problematic from the perspective of the originally hypothesized 7-factor solution. Factor two has elements of the original dimensions of Peer Communication, Communication Climate, and Media Quality. In fact, this dimension corresponds rather nicely with the newly proposed general Communication Effectiveness factor. Likewise factor seven contains the item which designates the factor of the Grapevine. Factor six is composed of elements from the Peer Communication factor. The truly problematic factor is number five with elements from Supervisory Relationships, Media Quality, and Organizational Integration. There appears to be little conceptual purity in this dimension.

Usefulness for Supervisory and Nonsupervisory Personnel

Previous attempts to confirm the factor structure have by necessity exclusively dealt with supervisory personnel (Crino & White, 1981). The results reviewed in the discussion above deal with nonsupervisory personnel and hence fill a gap in the research. However, it is still important to determine the factor structure for the supervisory personnel as a group. In particular, with the addition of the Subordinate Communication items will the hypothesized 8-factor solution emerge?

As Tables 7 and 9 show an 8-factor solution did **not** emerge. In fact a 6-factor one did. Examination of the heavily loaded items on each factor as can be seen in Table 9, when compared with Table 5, demonstrates that the 5-factor

solution proposed above has remained basically intact. The one additional factor is an exact mirror of Subordinate Communication in the proposed in the original study(Downs & Hazen,1977).

Company Type

It is natural to ask whether or not the proposed 5-factor solution is stable across organizations. This question could not be directly addressed because only one of the organizations had a sufficient number of employees to satisfy Gorsuch's(1983) suggested respondent-to-item ratio. The next best alternative was to group the organizations by type. Hence, the organizations in the databank were divided into four categories: financial institutions, service related organizations, manufacturing companies, and media related institutions. Table 2 shows the type designated for each organization. Each grouping was then investigated using a principal components analysis with a varimax rotation. Only the 35 items which all employees completed were used in the analysis. Hence, Subordinate Communication items were deleted from the analysis because the respondent-to-item ratio was too low. An eigenvalue cutoff point of 1.0 was used.

As seen in Table 10 the results indicated a different factor structure size for each of the organizational types. The media category was the only one in which a the 5-factor solution was obtained. Does this necessarily mean that the factor structure of the instrument is fundamentally unstable? We think not. In fact close examination shows that the items composing each of the five factors are almost perfectly mirrored in the solutions obtained in each organizational type. That is, the variables cluster together just as specified in the 5-factor solution discussed above.

However, additional factors were obtained for manufacturing organizations, financial businesses, and service organizations. More specifically, as seen in Table 11 the manufacturing industry picked up a factor

that relates to job information. The service group had an additional dimension that related to work group relationships and the financial grouping had two additional factors. One of which related to horizontal communication and another which focused on governmental impact on the organization.

Limitations

Two major concerns temper the conclusions of this study. First, the databank is composed of relatively small organizations. Perhaps larger organizations communicate somewhat differently. Second, all the data was generated in a central geographic location of a midwestern metropolitan area. Generalizability to other locales may be somewhat problematic. However, these limitations are not necessarily fatal and useful observations can still be made.

Discussion

The purpose of this paper was to explore the usefulness of the factor structure for the Communication Satisfaction Questionnaire as originally proposed by Downs and Hazen(1977) The results confirm the multidimensional nature of the communication satisfaction construct. The analyses suggest that while the originally suggested factor structure should be revised, the instrument itself continues to be an effective tool for the analysis of communication in organizations. In particular, five observations can be made about the Communication Satisfaction Questionnaire.

First, a 5-factor solution provides a better explanation of the data than the originally proposed 7-factor solution. Both the traditional eigenvalue cutpoint and the discontinuity test would indicate a 5-factor solution. Moreover the five factor-solution has a greater conceptual appeal than the seven-factor solution. The dimensions defined by the 7-factor solution do not clearly resemble those originally designated for communication satisfaction. Hence, there are both statistical and conceptual reasons for accepting the 5-factor solution.

Second, the five-factor solution highlights two new dimensions of

communication satisfaction not previously reported. The Communication Effectiveness factor suggests a general concern by employees for how well the communication system works in the organization, whether through informal channels or formal ones. In short, this dimension appears to measure the degree of employee satisfaction with the entire communication system as it impinges on them personally.

The really surprising result of this study was the isolation of the grapevine as a unique dimension of communication satisfaction. The grapevine loads separately in every one of the analyses conducted in the study. The implications are intriguing. In contrast to the traditional definitions of the grapevine, employees do not clearly associate grapevine activity and other informal types of communication(cf. Gibson & Hodgetts,1986). The grapevine is not the same as horizontal communication as is suggested in the original factor design. Apparently the grapevine exists as a separate, unique, and distinct communication channel. It plays a role that no other mode of communication plays. Hence, employees may express satisfaction with horizontal and informal communication without implying a similar evaluation of the grapevine. In fact, demonstrating that the grapevine is indeed a separate dimension of communication satisfaction places all the more significance on previous findings that most employees tend to feel they get more information than they want from the grapevine(Goldhaber, 1983).

Third, the instrument proves to be equally useful for supervisory and nonsupervisory personnel. Conceivably, managers and employees might react to communication in very different ways. This was not the case. The results showed that the same 5-factor solution emerged regardless. Although managers see the fundamental nature of communication the same as their employees, they do respond to one added dimension - Subordinate Communication. As would be expected, this makes organizational

communication somewhat more complex for the manager. Nevertheless, managers do **not** have a distinctly different conception of the fundamental communication processes in the organization. Hence, future researchers can be confident that the Communication Satisfaction Questionnaire acts consistently with both supervisory and nonsupervisory personnel.

Fourth, the 5-factor solution is stable for different organizational types.

The analyses confirmed a similar factor structure for all four different types of organizations. The contingency view of organizational communication taken to the extreme might imply that every industry has its own unique communication concerns. Hence, generalization across organizations would be useless. The present study does not suggest such an approach.

Apparently, employees in organizations of any type are concerned with issues of general communication effectiveness, feedback, general corporate information, and the grapevine. Perhaps these are the core communication issues in any organization. At least in these five areas, generalizations about organizational communication might prove useful.

Fifth, certain unique factors did emerge from different organizational types. Although the basic 5-factor structure remained intact for all of the different types of organizations, there were some added dimensions in three types of organizations. Employees from the manufacturing organizations reflect a unique concern for certain specific types of job-related information. This seems reasonable in light of their need to meet stricter performance guidelines. However, this dimension did not emerge as unique concern for service employees who may have less concern with specific information about performance. Instead a concern for interpersonal relationships might seem to be more indigenous to the service industry. Indeed, a unique factor along these lines was found in service organization type. Financial institutions are a service industry of sorts and a similar horizontal communication/relationship factor also

emerged from the analysis. Another factor that was obtained for these institutions was one concerning information about government regulation. This dimension no doubt reflects the unique concerns of employees in financial institutions who as a group must be more sensitive government regulations than those in other service industries or even manufacturing organizations.

Why did the analysis of the media organizations almost exactly mirror the findings from the entire databank? Perhaps the questionnaire was not sensitive to the unique communication issues of employees who work in the media. Or maybe, because of the rapid pace of business in the media industry only the bare essential elements of a communication system emerge and are of concern to employees. The question is really still quite open.

In sum, there appear to be certain core communication concerns for all organizations. Based on the present analyses these are: Communication Effectiveness, Corporate Information, Feedback, Supervisory Relationships and the Grapevine. Three of factors are retained from the original analysis(Downs & Hazen, 1977). However, there are also certain dimensions of communication that appear to be of unique concern to different types of organizations. These concerns relate both to the nature of the task as well as the competitive environment. A thorough cataloging of these factors or even a conceptual framework for these additional factors might prove a useful endeavor for organizational communication scholars. Hence, this research project suggests a framework for the study of organizational communication in which there are certain factors expected in all organizations but also unique issues for every different type of organization.

Conclusion

Organizational communication scholars will continue to need instruments that they have faith in and believe can provide useful information whether for a communication audit or a research project. The Downs and Hazen(1977)

instrument is one that has proved useful for many years. However, the results of this study coupled with the findings of other researchers would suggest a refinement of the instrument is warranted (Crino & White, 1981; Hecht, 1978). In particular, a 5-factor solution appears more useful than the originally proposed one (Downs & Hazen, 1977). Moreover, analyses reported in this paper assure that the instrument scored in light of the 5-factor solution should be stable across organizational type and prove equally useful with supervisory and nonsupervisory personnel.

The compelling implication of the study concerns the traditional contingency perspective of organizational communication. While every organization is no doubt unique and is shaped by a multitude of industry specific nuances, there appear to be a central core of communication satisfaction factors common to all the different types of organizations. The communication satisfaction questionnaire exposes five particular core issues: general communication effectiveness, feedback, supervisory relationships, corporate information, and the grapevine. Are there more? Future researchers will have to answer that question.

On the other hand, the study also suggests that different types of organizations will have additional factors that appear to be industry specific. Are there other factors not suggested by this study? That seems a certainty. Is there any conceptual pattern that would lead to uncovering these new factors? The additional factors found in this study seem to be a product of the specific organizational output and/or environmental concerns, like the government. Are there other equally important issues that influence the development of an industry specific factor? These questions can only be answered as our knowledge of organizational communication grows.

Illustration 2 is offered as a starting point for discussion. The contingency perspective of organizational communication would suggest unique

communication factors for each type of organization. The model allows for this perspective. The more traditional scientific approach would seek meaningful generalizations which operate across organizational contexts. And this perspective is also borne out in the model. Hence, both the traditional and contingency approaches can be compatible. In short, this study has shown that it is time to refine the Communication Satisfaction Instrument but also importantly our notion of the contingency perspective.

Illustration 2

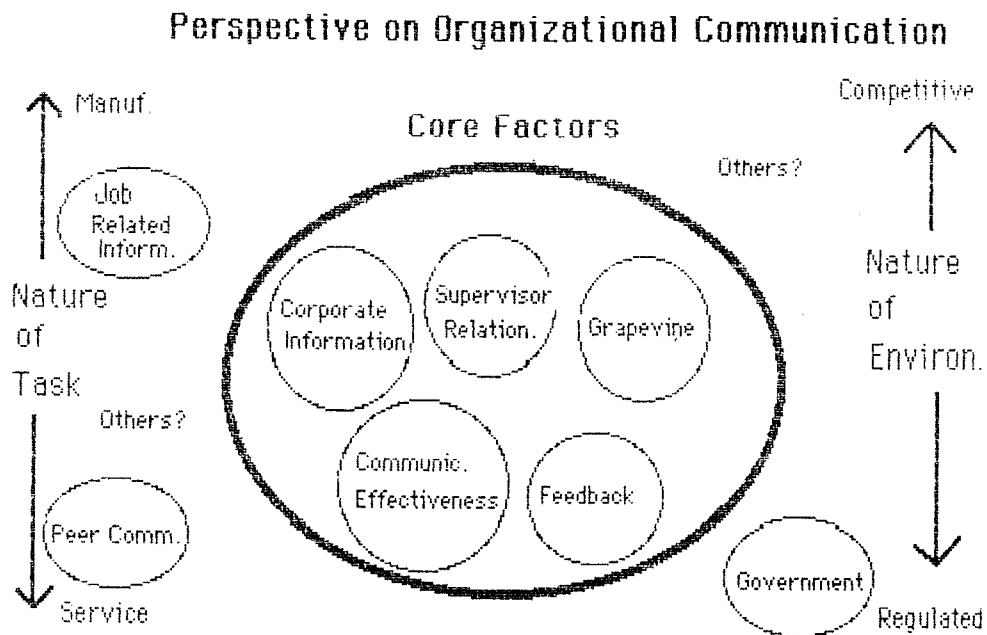


Table 1

Pincus Conception of the Communication Satisfaction Factors

Relational Dimensions	Informational/Relational Dimensions	Informational Dimensions
<ul style="list-style-type: none"> • Subordinate Comm. • Horizontal Comm. • Top Manage. Comm.* 	<ul style="list-style-type: none"> • Personal Feedback • Comm. Climate • Supervisory Comm 	<ul style="list-style-type: none"> • Media Quality • Organ. Integration • Organ. Perspective

* The factor added by Pincus(1986).

Table 2

Data Bank Composition

<u>Organization</u>	<u>Type</u>	<u>Survey Date</u>	<u>N</u>	<u>Response Rate</u>
Auto Dealer	Service	Fall 1982	44	100.0 %
TV Station	Media	Spring 1983	79	75.0
Industrial Laundry	Service	Spring 1983	62	94.0
Packaging Plant	Manufacturing	Spring 1983	43	77.0
Hotel	Service	Spring 1982	81	87.0
Insurance Firm	Service	Spring 1982	44	90.0
Health Agency	Service	Summer 1983	28	77.7

Table 2 , continued

Savings and Loan	Financial	Spring 1982	78	92.8
TV Station	Media	Spring 1983	24	66.7
Savings and Loan	Financial	Fall 1981	65	100.0
Chair Manufacturer	Manufacturing	Fall 1981	116	98.0
Nuts and Bolt Distributor	Service	Fall 1983	97	88.0
Custom Manufacturer	Manufacturer	Spring 1984	57	90.0
Savings and Loan	Financial	Spring 1984	90	92.0
Bank	Financial	Spring 1984	63	61.0
Motel	Service	Spring 1984	63	65.0
Newspaper	Media	Spring 1985	239	75.0
TV Station	Media	Spring 1985	79	92.0
Trucking Firm	Service	Spring 1986	29	90.0
Paper Product Producer	Manufacturer	Spring 1986	54	95.0

Table 3

Eigenvalues and Variances for Factors

Factor	Eigenvalue	Variance Explained(Rotated)
1	14.600	5.294
2	2.042	5.153
3	1.577	4.552
4	1.087	4.122
5	1.069	1.357

Table 4
Varimax Rotated Factor Matrix 5-Factor Solution

Item	1	2	3	4	5
			Corporate Information		
6	.264	.605	.165	.285	-.001
12	.153	.635	.024	.151	.116
13	.296	.665	.136	.241	-.017
16	.083	.803	.139	.040	.156
17	.138	.809	.135	.119	.082
			Personal Feedback		
7	.205	.264	.118	.696	.114
8	.217	.209	.220	.794	.032
9	.199	.171	.349	.718	.025
14	.298	.376	.339	.446	-.054
18	.384	.360	.425	.357	-.097
			Organizational Integration		
4	.174	.194	.222	.742	.110
5	.265	.463	.099	.353	.102
10	.228	.483	.337	.390	.026
11	.224	.277	.394	.488	.105
15	.146	.562	.228	.201	.169
			Supervisory Relationships		
20	.219	.172	.779	.267	-.008
22	.296	.192	.714	.244	-.045
24	.418	.481	.108	.162	-.063
29	.251	.116	.752	.186	.098
34	.266	.162	.476	.214	.373
			Communication Climate		
19	.452	.454	.353	.266	-.148
21	.572	.252	.344	.245	-.047
23	.464	.440	.338	.334	-.085
26	.431	.256	.367	.230	.194
27	.541	.241	.440	.240	.043
			Peer Communication		
28	.094	.123	.027	.051	.746
30	.563	.038	.199	.085	.357
31	.571	.206	.340	.086	.163
32	.357	.092	.381	.065	.356
37	.741	.138	.111	.189	.124
			Media Quality		
25	.192	.123	.691	.207	.164
33	.500	.241	.296	.159	.115
35	.474	.263	.202	.198	.319
36	.702	.266	.200	.265	.040
38	.704	.357	.208	.237	.002

* Items used in any nuclear cluster are boldfaced in the first column. Factor loadings are bold faced to indicate the factor on which the item loads.

Table 5
Summary of Central Loadings for 5-Factor Solution

Factor 1

Factor Loading	Item #	Original Factor	Question Summary
.741	37	PeerCom	Informal comm. is active and accurate
.704	38	Media	Amount of comm. is right
.703	36	Climate	Comm. Attitudes healthy
.572	21	Climate	People have great abilities as communicators
.571	31	PeerCom	Comm. practices in emergency
.563	30	PeerCom	Horizontal comm. accurate and free-flowing
.541	27	Climate	Conflicts appropriately handles in right channel
.500	33	Media	Meetings are well organized

Factor 2

Factor Loading	Item #	Original Factor	Question Summary
.808	17	Corplnf	Information about accomplishments/failures of comp.
.803	16	Corplnf	Company profits and financial standing
.665	13	Corplnf	Information about changes in the organization
.636	12	Corplnf	Government action affecting company
.606	6	Corplnf	Company policies and goals
.564	15	Integ	Benefits and pay (employee)

Factor 3

Factor Loading	Item #	Original Factor	Question Summary
.779	20	SupCom	Supervisor listens and pays attention to me
.752	29	SupCom	Supervisor open to ideas
.714	22	SupCom	Supervisor offers guidance to solve problems
.691	25	SupCom	Supervisor trusts me

Table 5 continued

Factor 4

Factor Loading	Item #	Original Factor	Question Summary
795	8	Feedback	Information about how I am being judged
.741	4	Integ	Information about progress in my job
.719	9	Feedback	Recognition of my efforts
.695	7	Feedback	How my job compares with others

Factor 5

Factor Loading	Item #	Original Factor	Question Summary
746	28	PeerCom	Grapevine activity

Table 6
Varimax Rotated Factor Matrix 7-factor Solution

Item	Factor						
	1	2	3	4	5	6	7
Corporate Information							
6	.548	.243	.113	.255	.372	.073	-.147
12	.656	.144	.039	.182	-.045	.138	.120
13	.634	.326	.142	.231	.159	.019	-.026
16	.802	.084	.137	.052	.117	.076	.126
17	.803	.170	.155	.128	.079	.011	.10
Personal Feedback							
7	.257	.178	.112	.705	.091	.155	.060
8	.187	.225	.230	.790	.104	.057	.025
9	.156	.197	.360	.717	.081	.078	.023
14	.348	.287	.328	.437	.156	.110	-.109
18	.346	.403	.458	.356	.008	.070	-.037
Organizational Integration							
4	.168	.177	.226	.734	.153	.050	.093
5	.427	.265	.085	.337	.228	.066	.048
10	.420	.173	.254	.356	.459	.161	-.203
11	.218	.154	.314	.454	.450	.189	-.115
15	.526	.068	.145	.187	.388	.226	-.260
Supervisory Relationships							
20	.156	.190	.782	.258	.109	.128	-.017
22	.163	.281	.717	.225	.147	.095	-.049
24	.469	.452	.145	.163	-.011	.042	.011
29	.108	.195	.749	.183	.100	.206	.076
34	.088	.215	.425	.159	.521	.114	.251
Communication Climate							
19	.430	.476	.379	.259	.045	.065	-.106
21	.238	.533	.348	.245	.042	.240	-.061
23	.414	.491	.368	.325	.066	.059	-.033
26	.196	.424	.359	.187	.333	.070	.174
27	.206	.530	.455	.220	.141	.137	.070
Peer Communication							
28	.137	.068	.071	.060	.072	.112	.852
30	.082	.348	.139	.137	-.031	.717	.165
31	.201	.451	.300	.094	.121	.439	.039
32	.112	.108	.258	.097	.210	.723	.012
37	.101	.693	.107	.171	.157	.260	.102
Media Quality							
25	.102	.139	.675	.193	.196	.170	.114
33	.197	.414	.238	.136	.310	.293	-.043
35	.161	.453	.149	.123	.609	.058	.199
36	.204	.704	.205	.226	.249	.111	.046
38	.307	.704	.218	.210	.182	.137	.015

* Items used in any nuclear cluster are boldfaced in the first column. Factor loadings are bold faced to indicate the factor on which the item loads.

Table 7

Eigenvalues and Variance for Factor with Supervisory Personnel

Factor	Eigenvalue	Variance Explained (Rotated)
1	17.231	6.082
2	2.269	5.055
3	1.687	5.048
4	1.549	4.161
5	1.177	3.481
6	1.104	1.192

Table 8
Varimax Rotated Factor Matrix 6-Factor Solution

Item	1	2	3	4	5	6
Corporate Information						
6	.235	.637	.216	.106	.316	-.084
12	.336	.501	.159	.091	-.254	.326
13	.202	.642	.303	.129	.199	-.012
16	.158	.722	.059	.179	.171	.113
17	.140	.721	.154	.247	.240	.018
Personal Feedback						
7	.284	.185	.676	.144	.018	.153
8	.141	.175	.786	.163	.232	.032
9	.161	.179	.705	.085	.367	-.003
14	.336	.372	.588	.149	.096	-.004
18	.324	.420	.465	.138	.319	-.005
Organizational Integration						
4	.120	.188	.753	.162	.165	.127
5	.229	.532	.295	.144	-.040	.058
10	.247	.564	.390	.240	.260	-.062
11	.245	.330	.634	.241	.190	-.079
15	.306	.560	.229	.124	.080	-.018
Supervisory Relationships						
20	.300	.251	.327	.145	.690	.059
22	.388	.286	.381	.106	.548	.008
24	.581	.271	.237	.043	.069	-.047
29	.301	.147	.257	.161	.679	.137
34	.529	.087	.264	.182	.345	.255
Communication Climate						
19	.370	.478	.373	.130	.286	.052
21	.679	.207	.282	.154	.113	-.056
23	.434	.376	.401	.214	.417	.022
26	.402	.347	.325	.246	.259	-.173
27	.479	.290	.373	.297	.323	-.238
Peer Communication						
28	.028	.049	.096	.114	.111	.858
30	.680	.091	.178	.204	.088	.142
31	.616	.217	.082	.235	.276	.150
32	.347	.171	.149	.508	.130	-.097
37	.689	.226	.149	.214	.206	-.006
Media Quality						
25	.275	.204	.231	.183	.661	-.000
33	.606	.292	-.014	.230	.379	-.044
35	.483	.276	.132	.272	.214	.070
36	.608	.246	.252	.312	.184	-.005
38	.640	.313	.279	.241	.285	-.071
Subordinate Relationships						
42	.097	.168	.180	.776	.064	.058
43	.151	.119	.128	.771	.155	.131
44	.254	.207	.118	.628	.055	.048
45	.116	.090	.155	.769	.133	.065
46	.271	.132	.060	.719	.060	-.041

* Items used in any nuclear cluster are boldfaced in the first column. Factor loadings are bold faced to indicate the factor on which the item loads.

Table 9
Summary of Central Loadings for 6-Factor Solution

Factor 1

Factor Loading	Item #	Original Factor	Question Summary
.689	37	PeerCom	Informal comm. is active and accurate
.680	30	PeerCom	Horizontal comm. is accurate and free-flowing
.679	21	Climate	People have great abilities as communicators
.640	38	Media	Amount of comm. is right
.616	31	PeerCom	Comm. practices in emergency

Factor 2

Factor Loading	Item #	Original Factor	Question Summary
.722	16	Corplnf	Company profits and financial standing
.721	17	Corplnf	Information about accomplishments or failures of company
.642	13	Corplnf	Information about changes in the organization
.637	6	Corplnf	Company policies and goals

Factor 3

Factor Loading	Item #	Original Factor	Question Summary
.786	8	Feedback	Information about how I am being judged
.753	4	Integ.	Information about progress in my job
.705	9	Feedback	Recognition of my efforts
.676	7	Feedback	How my job compares to others
.634	11	Integ.	Information about job requirements

Table 8 continued

Factor 4

Factor Loading	Item #	Original Factor	Question Summary
.776	42	SubCom	Sub. responsive to downward comm.
.771	43	SubCom	Sub. anticipate my information needs
.769	45	SubCom	Sub. open to evaluation, suggestions & criticism
.719	46	SubCom	Sub. initiate accurate upward comm.
.628	44	SubCom	Extent I do not have comm. overload

Factor 5

Factor Loading	Item #	Original Factor	Question Summary
.690	20	SupCom	Supervisor listens and pays attention to me
.679	29	SupCom	Supervisor open to ideas
.661	25	SupCom	Supervisor trusts me
.548	22	SupCom	Supervisor offers guidance to solve problems

Factor 6

Factor Loading	Item #	Original Factor	Question Summary
.858	28	PeerCom	Grapevine activity

Table 10

Factor Solutions for Organizational Types

Organizational Type	Number of Factors	N size	Respondent-to-item Ratio
Media	5	393	11.23 to 1
Service	6	375	10.71 to 1
Manufacturing	6	221	6.3 to 1
Financial Inst.	7	373	10.66 to 1

Table 11
Additional Factors by Organizational Type

Service Organizations

Factor Loading	Item #	Question Summary
.680	33	Extent to which our meetings are well organized.
.639	32	Extent to which my work group is compatible.
.576	34	Amount of supervision is about right.

*This factor was loaded fifth out of six factors and had an eigenvalue of 2.496.

Manufacturing Organizations

Factor Loading	Item #	Question Summary
.682	11	Information about job requirements.
.669	15	Information about employee benefits and pay.
.573	10	Information about departmental policies and goals

*This factor was loaded fifth out of six factors and had an eigenvalue of 2.890.

Financial Organizations

Factor 5

Factor Loading	Item #	Question Summary
.680	30	Horizontal comm. is accurate and free-flowing.
.637	32	Extent to which work group is compatible.

*This factor was fifth out of seven factors and had an eigenvalue of 2.199.

Factor 6

Factor Loading	Item #	Question Summary
.602	12	Information about government action affecting my company.

*This factor was sixth out of seven factors and had an eigenvalue of 1.176.

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