DOCUMENT RESUME

ED 103 707 CE 003 330

AUTHOR	DeNisi, Angelo S.; McCormick, Ernest J.
TITLE	The Cluster Analysis of Jobs Based on Data from the Position Analysis Questionnaire (PAQ). Report No. 7.
INSTITUTION	Purdue Univ., Lafayette, Ind. Occupational Research Center.
SPONS AGENCY	Office of Naval Research, Washington, D.C. Personnel and Training Research Programs Office.
REPORT NO	TR-7
PUB DATE	Sep 74
NOTE	119p.; For other PAQ documents, see CE 003 331-2; Much of the appendix is marginally legible; Best Copy Available
EDRS PRICE	MF-$0.76 HC-$5.70 PLUS POSTAGE
DESCRIPTORS	*Cluster Analysis; Graphs; *Job Analysis; *Occupational Clusters; Questionnaires; *Research Methodology; *Tables (Data)
IDENTIFIERS	BC TRY; CODAP; Coordinated Occupational Data Analysis Program; PAQ; *Position Analysis Questionnaire

ABSTRACT

The Position Analysis Questionnaire (PAQ) is a structured job analysis procedure that provides for the analysis of jobs in terms of each of 187 job elements, these job elements being grouped into six divisions: information input, mental processes, work output, relationships with other persons, job context, and other job characteristics. Two cluster analysis procedures were used in the clustering of jobs on the basis of data from the PAQ. The BC-TRY program was carried out with the 14 overall or general job dimensions as applied to a reasonable varied sample of 3,700 jobs and resulted in the identification of 33 job clusters. The CODAP (Coordinated Occupational Data Analysis Program) was based on the scores on 21 of the divisional job dimensions for a sample of 800 jobs, and resulted in the identification of 45 clusters. The differences in the results may be due to the differences in the nature of the job dimensions used in the two instances, rather than being associated with the clustering procedures as such. The 95-page appendix contains the tables of data (15 pages) and line graphs for the job clusters resulting from the two programs. (Author/AG)

The Cluster Analysis of Jobs Based on Data from the Position Analysis Questionnaire (PAQ)

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Contract No. N00014-67-A-0226-0016
Contract Authority Identification Number, NR 151-331

Report No. 7
September 1974

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THE CLUSTER ANALYSIS OF JOBS

BASED ON DATA FROM THE

POSITION ANALYSIS QUESTIONNAIRE (PAQ)

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Personnel and Training Research Programs
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Contract No. N00014-67-A-0226-0016
Contract Authority Identification Number, NR 151-331

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Technical Report No. 7	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) The cluster analysis of jobs based on data from the Position Analysis Questionnaire (PAQ)		5. TYPE OF REPORT & PERIOD COVERED Technical Report
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Angelo S. De Nisi and Ernest J. McCormick		8. CONTRACT OR GRANT NUMBER(s) N000014-67-A-0026-0016
9. PERFORMING ORGANIZATION NAME AND ADDRESS Occupational Research Center Department of Psychological Sciences Purdue University, West Lafayette, IN 47907		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS NR 151-331
11. CONTROLLING OFFICE NAME AND ADDRESS Personnel and Training Research Programs Office of Naval Research Arlington, Virginia 22217		12. REPORT DATE September, 1974
		13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

Not applicable

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Job analysid, Job clusters, Job families, Job dimensions, Position Analysis Questionnaire (PAQ), Cluster analysis, Heirarchical grouping, BC-TRY, CODAP

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Two cluster analysis procedures were used in the clustering of jobs on the basis of data from the Position Analysis Questionnaire (PAQ). The PAQ is a structured job analysis procedure that provides for the analysis of jobs in terms of each of 187 job elements, these job elements being grouped into six divisions, as follows: (1) Information input; (2) Mental processes; (3) Work output; (4) Relationships with other persons; (5) Job context; (6) Other job characteristics.

On the basis of previous research, a series of principal components analyses of the PAQ data had been carried out. One series consisted of independent analyses of the job elements within each of these six divisions, the results of this consisting of the identification of 30 principle components (called "divisional" job dimensions). In turn, an overall or general principle components analysis was based on data from 168 of the 187 job elements (called "general" - G - job dimensions).

One of the clustering procedures used was the BC-TRY program (Tryon, R.C., and Bailey, D.E., Cluster Analysis, McGraw-Hill, 1970). This clustering was carried out with the 14 overall or general (G) job dimensions as applied to a reasonably varied sample of 3700 jobs. This program resulted in the identification of 33 job clusters.

The other clustering procedure was based on the scores on 21 of the "divisional" job dimensions for a sample of 800 jobs (a sub-sample of the 3700 jobs mentioned above). The clustering consisted of the use of a hierarchical grouping technique as applied to the data for these jobs. In particular, the clustering was carried out with an adaptation of the CODAP (Coordinated Occupational Data Analysis Program) as developed by the United States Air Force. This clustering resulted in the identification of 45 clusters which seemed to have reasonable homogeneity.

A subjective comparison and a satatistied analysis of the results of these two clustering procedures give the impression that the clusters resulting from the BC-TRY program were somewhat more homogeneous that those resulting from the CODAP program. However, this difference may more likely be associated with the differences in the nature of the job dimensions used in the two instances (those based on the various "divisions" of the PAQ, as contrasted with the general or (G) dimensions), rather than being associated with the clustering procedures as such.

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Over the years various types of job classification systems have been developed and used for a variety of purposes. Among the most widely used systems are those of the United States Bureau of the Census for reflecting the occupational characteristics of the labor force, and that used by the United States Training and Employment Service for the purpose of classification of applicants for jobs and of positions available. Job classification systems have also been used by industrial organizations, such as for the establishment of rates of compensation, and by vocational and counseling agencies, for the purpose of providing counselees with some insight into various related fields of work. In the case of most job classification systems that have been developed the classification catergories, sub-classes, and in some instances sub-sub classes, have typically been based on the judgement of those responsible for the system in terms of the structure that is judged to be most appropriate for serving the purposes of the system. Individual jobs that have been grouped together in various classes and sub-classes typically have been sorted or grouped on the basis of judgements of their job similarities and differences in terms of the basis of the classification system. The use of various classification systems in certain contexts probably is some reflection of the fact that such systems have been reasonably satisfactory in serving their intended purposes.

Although most classification system probably are of an a priori nature, there have been various efforts to develop job classification systems on the basis of statistically-determined relationships between and among jobs. Such approaches would be predicated upon the use of certain common "units" of analysis of jobs that provide for characterizing jobs either in terms of quantitative values on each such "unit," or in terms of the presence or absence of specific characteristics. The values associated with these units in the case of individual jobs might in some instances be based on reasonably objective data (such as observations or film-records of work activities) or on the basis of judgements (such as ratings of the "importance" of some human attribute to performance on various jobs.

It would seem that for certain purposes the formation of grouping of jobs based on statistical analysis of similarities of job characteristics could be very useful. The range of such uses covers the conventional functions involved in personnel activities, such as personnel selection and placement, training, personnel evaluation, job evaluation, etc., and in vocational couseling.

The statistical grouping of jobs to form job families is predicated on two primary considerations, namely the basis for the grouping, and the method of grouping

Bases for Grouping Jobs

Jobs can of course be characterized in terms of any of a number of different types of descriptors (McCormick, 1974). Among such possible descriptors are the tasks or activities that are performed, the "human behaviors" that are involved in the work activities (such as sensing, psycho - motor activities, etc.), and the human "qualities" that are relevant for successful performance (such as arithmetic reasoning, finger dexterity, personality characteristics, etc.). In the formation of job families for any particular purpose, obviously the descriptors that are selected for use should be those which, if actually used in the grouping of jobs, would result in groupings that are suitable for the purpose in mind. The use of task inventories by the United States Air Force, for example, has provided for the identification of "job types" which reflect similarities in the combinations of work activities that are actually performed by personnel in the Air Force. (Morsh, June 1966). In turn, the study carried out by McCormick, Finn, Scheips (1957) was based on ratings of the personnel "requirements" for jobs, and the resulting groupings of jobs then reflected groupings of jobs that were similar in the kinds of personal qualities required for successful performance.

There is of course no single basis for the formation of job families that could be expected to serve all purposes. Rather, the basis for any such grouping (as reflected by the descriptors that are used in the grouping process) needs to be selected to serve the purposes in question. In this regard, however, Thorndike many years ago (1953) raised the provocative question of "Who belongs in the family?" Although the techniques of job and occupational analysis and of statistical manipulations have been improved during the intervening years, such developments provide no solid answers to the question Thorndike raised, which deals more with the logic that would be involved in making judgements about the appropriate bases for bundling jobs together for the purpose at hand.

Statistical Methods of Grouping Jobs

There are various procedures that have been used or that could be used in the grouping of jobs. These include factor and principal components analysis and various types of cluster analysis procedures, along with other multi-dimensional procedures. In the use of factor and principle components analysis procedures a Q-type analysis would be the type that would result in groupings of jobs on the basis of the variables used. Such a procedure was used, for example, by Hemphill in the case of a sample of executive positions.

In comparing the possible relevance of factor and principal components analysis procedures, as contrasted with various clustering procedures, an argument can be made in favor of some clustering approach since it takes into account the "elevation" of the variables that characterize the profile for any given case, as well as the "profile" itself. In case the interrelationships between individual jobs are reflected by a coefficient of correlation (as in the case of factor a principal components analyses) one can have a very high correlation between, let us say, two positions, but one might have higher values generally across the several variables (i.e., a descriptor) whereas the other might have systematically lower values. Most clustering procedures, on the other hand, are based on some index of similarity between pairs of jobs that does take into account the comparative "elevation" of the profiles.

There is one special problem however, in connection with the use of at least certain clustering procedures, that is determination of the number of clusters to use. This is, for example, a special problem in connection with the use of the hierachical grouping procedure developed by Ward (1961). This method provides for the grouping of jobs according to profile similarity in such a way that the number of groups is reduced by one in each of a series of iterations. Thus, with a given number of jobs, one starts with N groups (one job in each group), then proceeds to N-1, N-2, N-3, etc., to one group (in which all cases are put together). There presumably are no definitive guidelines for determining the number of clusters that would be most suitable for the purpose at hand.

BACKGROUND OF PRESENT STUDY

The present study is a part of a broader research program involving the use of a structured job analysis questinnaire called the Position Analysis Questionnaire (PAQ). The PAQ includes provision for the analysis of jobs in terms of 187 job elements that are organized into the following 6 divisions: (1) Information input, (2) Mental processes, (3) Work output, (4) Relationships with other persons, (5) Job context, (6) Other job characteristics. For most job elements a six-point rating scale is provided for use in rating the relevance of the items to any given job. There are different types of scales, such as importance, frequency, and time spent, and certain special scales. The scale used with any given job element is the one that is considered to be most appropriate for that job element. In the case of a few elements (those relating to the work schedule and the job context) a dichotomous scale is used to indicate whether the element does or does not apply to the job.

A series of principal components analyses were carried out with data from a reasonably representative sample of 3700 jobs, separate analyses being carried out with the job elements within the separate divisions (with two such analyses being carried out for the elements in Division 6, these being done separately for the job elements for which the six-point rating scale is used versus the dichotomous scale).

In addition, a principal components analysis was carried out with the entire pool of job elements (excluding certain ones such as those that were of a "write-in" nature).

These analyses resulted in the identification of 30 components based on the "divisional" analyses and 14 based on an overall or general (G) analysis, (Marquardt and McCormick, Report No. 1, 1973; Marquardt and McCormick Report No. 5, June 1974). These are referred to as job dimensions.

On the basis of previous studies with PAQ-based data, there is substantial evidence to indicate that such data might be used as the basis for the establishment of the job component validity of tests (i.e., the establishment of aptitude requirements directly from job data) without the need for conventional text validation. In addition, such data seem to be potentially useful for establishing compensation rates for jobs, thereby possibly eliminating the conventional job evaluation procedures.

In part because of evidence of the potential utility of the PAQ for such purposes, it would seem that the PAQ might serve as the basis for grouping jobs into job families, with the thought that such job families might have certain practical utility. Such families conceivably could be formed of those jobs which have reasonably similar profiles of job dimension scores. Given such job families, each of which hopefully would be reasonably homogeneous, it would be conceivable that one could determine separately the profile of aptitude requirements for the jobs within any given family. If such a procedure were possible, and if the aptitude profiles so identified would be reasonably valid for the jobs within any given family, it would then be possible with a new job to compare its PAQ profile to those of the various families in order to allocate it to the family with it most nearly matched. In such a case one could then apply to that job the aptitude profile for the family in question with reasonable assurance that the profile would have acceptable validity for the purpose of personnel selection for the job in question. Similarly, it would be conceivable that the compensation rates for jobs in individual families might be found to be reasonably similar. In such a case it would then be possible, in a similar fashion, to match a job to a family and to apply to it a compensation rate which was appropriate for that job family. Other possible applications of such job families come to mind as well, as in vocational counseling.

This study was then directed toward the use of PAQ based data as the basis for the identification of job families.

In this investigation two separate studies were carried out, one involving a hierarchical grouping technique as the basis for the clustering of jobs, and the other involving the BC-TRY cluster analysis procedure (Tryon and Bailey, 1970).

STUDY 1: JOB CLUSTERING WITH THE BC-TRY PROGRAM

One of the clustering procedures used was the BC-TRY cluster analysis procedures. This consists essentially of two phases (Tryon and Bailey, 1970). The first phase, a V-analysis, consists of discovering the general properties of "objects," and the second phase, an O-type analysis, consists of the discovery of the general types into which the "objects" can be classed.

Sample of Jobs

The jobs used in this procedure consisted of the total sample of 3700 jobs used by Marquardt and McCormick (Report No. 4, June 1974) in a series of principal components analyses. This sample was relatively representative of employed workers in the labor force in terms of major occupational categories.

Job Dimensions Used

One of the principal components analyses carried out by Marquardt and McCormick (Report No. 4, June 1974) was an "overall" or "general" analysis, in which 168 of the job elements of the PAQ were pooled together. This resulted in the identification of 14 (G) principle components, (job dimensions). The scores of the 3700 jobs on these 14 job dimensions served as the input to the BC-TRY program. Then 14 job dimensions then comprised the V-analysis data. (The names of these 14 dimensions are given in Appendix A).

Execution of BC-TRY Program

The application of the O-type analysis of the BC-TRY program was carried out by Peter Lenz, Portland, Oregon.

RESULTS

The program resulted in the identification of 33 job clusters. These clusters are described primarily in terms of the mean scores on the 14 job dimensions and of the variability of the scores in these dimensions. The profiles of the clusters are given in Appendix B, the profile for each cluster representing the mean values on the 14 job dimensions. The standard diviations of the mean job dimension scores are also given with the profile for each cluster.

In addition an index of homogeneity (H) is given for each job dimension for each cluster. This is a quantitiative index of the amount of similarity of the values on each dimension. If they were all identical the H value would be 1.00. The index is derived by the following formula (Tryon and Bailey):

$$H \text{ (homogeneity)} = \sqrt{1 - \frac{\text{variance of group}}{\text{total variance for all jobs}}}$$

The hierarchical grouping portion of the CODAP program has been adapted under the direction of Dr. William J. Cunningham, North Carolina State University, for use with occupational data such as that resulting from the PAQ.

STUDY 2: JOB CLUSTERING WITH CODAP PROGRAM

The other procedure involved in the development of job families was based on a hierarchical grouping technique developed by Ward (1961). As indicated earlier, this procedure is based on an index of job similarity between all possible pairs of jobs, and by an iterative process the jobs are formed into groups ranging from N down to 1. This procedure has been incorporated in the Comprehensive Occupational Data Analysis Programs (CODAP) of the United States Air Force for processing task inventory data.

Job Samples

The jobs used in this clustering procedure were part of a sample of 3700 jobs used with the BC-TRY program. Since the capacity of the program was limited to a sample of 2,000, and since the computer costs rise exponentially with numbers of cases, a subsample of 800 jobs was selected from the 3700 jobs.

Job Dimension Used

In this study 21 of the 30 "divisional" job dimensions were used, these being the ones which were considered to be potentially more relevent as the basis for the grouping. (The names of these job dimensions are given in Appendix A).

Execution of CODAP Program

The CODAP program requires the use of an index of similarity of the profiles of each pair of cases (in this instance for each pair of the 800 jobs). For this purpose a d^2 index was used. The execution of the program was carried out under the direction of Dr. William J. Cunningham, North Carolina State University.

RESULTS

Since the hierarchical grouping portion of the CODAP program is an iterative one, and since there are no generally recognized objective criteria for relecting the "optimum" iteration, the investigator must use his judgement in making such determination. In the present instance it was considered desirable, in terms of the possible future use of job clusters, to have a reasonably limited number, compatable with the additional desirability of having each cluster include job.

that are reasonably homogeneous. In making such a judgement with the data from this analysis, listings of the jobs that formed the clusters were used.

On the basis of an examination of the jobs that fell into the various clusters at various iterations, it appeared that the interation at which 42 clusters were formed would reflect a reasonable compromise between the contradictory objectives of having a small number of clusters and still having each cluster represent what was considered to be a relatively homogeneous groups of jobs.

The profiles of these 42 clusters are given in Appendix B, along with the means of the job dimension scores that characterize each profile, the standard deviations of those means, and the homogenuity (H) values.

DISCUSSION

In the case of the job clusters resulting from the two procedures used, no effort was made to label the clusters, other than by a combination letter (T for the BC-TRY clusters, and C for the CODAP cluster) followed by a number (1, 2, 3, etc.).

The ultimate evaluation of the job clusters developed by any given procedure would have to be in terms of some judgement regarding the extent to which they might serve their intended purposes. The primary objective in developing these job clusters was that of ultimutely using them as the possible basis for the establishment of apititude requirements for individual jobs. The evaluation of the suitability of the clusters for this purpose would depend essentially upon the homogeneity of the actual aptitude requirements of jobs that fall in the various clusters. (A planned continuation of research with the PAQ hopefully would result in some data that would shed light on this). A secondary objective relates to the possible use of job clusters as the basis for the establishment of compensation rates for jobs. The fulfillment of this objective would depend similarly upon the homogeneity of rates of pay for the jobs and the various clusters. (Here, again, further planned research might result in data that would contribute to the evaluation of job clusters for this purpose).

In the absence of organized data to serve either of these objectives, a present assessment of the job clusters must be based in part of the computer out-put available for the clusters, such as the mean job dimension scores of the jobs in each cluster, the standard deviations of those means, and the homogenuity (H) values. In addition, some assessment can be made on the basis of the jobs that form the clusters.

A comparison of the mean values of the job dimension scores of the clusters generated by the two procedures indicates that there is more variability in those mean values for the clusters resulting from the BC-TRY procedure than from the CODAP procedure. Since the job dimension scores of the jobs are in standard score or (with a mean of zero and a standard deviation of about 1) the means of the scores on any given job dimension can be compared with those for other dimensions. The BC-TRY clusters show, for example, more such mean values about 1.00 (or at values just below that, such as .90, .80 or .70) than in the clusters resulting from the CODAP program. This suggests that the BC-TRY clusters by-and-large are more "discriminating" than the CODAP clusters in that the profiles are more easily characterized in terms of several dominant dimensions on which the jobs in each cluster scored high.

Further, the standard deviations and homogeneity (H) values for the BC-TRY clusters generally reflect less variability for the jobs in each of the clusters than did the CODAP clusters. In this regard, the overall mean H value (for all clusters) was:

.75 for the BC-TRY clusters and[1]
.45 for the CODAP clusters, thus confirming this difference.

Subsequent to the completion of the CODAP clustering procedures Dr. Cunningham at North Carolina State University in a personal communication [1974] reported that they had made a comparison of various "distance" metrics as used with the CODAP program. On the basis of this comparison it was considered that the d^2 index was not as appropriate for use in clustering of jobs as were certain other indexes such as precent overlap or a coeffecent of correlation. Since the CODAP clusters reported in this study were based on a d^2 index it is very possible that this accounts in part for the lack of homogeneity in the CODAP clusters, as contrasted with those derived from the BC-TRY program. The results should be interpreted with this in mind.

In connection with the various job clusters, several observations are in order. For example, a number of the job clusters seem to be characterized dominantly by a limited number of job dimension, in that the mean scores on only a few dimensions deviated markedly above, or below, the central range of mean dimension values for all jobs. In other words, in the case of a number of clustes that mean scores on several or many of the job dimensions fall somewhere around the midpoint, and seem not to serve as "discriminators" of the dimensions. Although the BC-TRY clusters generally have more job dimensions with higher mean values than

1. Due to the nature of the formula for computing homogeneity, it is possible to get a negative value. It was decided, however, for the sake of conceptual clarity to report only positive values and to assign a value of zero for all others. This only happened once in the case of the BC-TRY clusters but repeatedly in the case of the CODAP clusters. These average values reflect this policy.

do the CODAP clusters, the same pattern applies to the CODAP clusters but in more moderate degree. Thus, in reviewing the profiles for individual clusters it is suggested that the reader might look at the job dimension values that are particularly high or particularly low to get a "feel" for the dimensions that tend to earmark the individual clusters. Further, within each of the two sets of the clusters there are certain clusters that tend to have relatively similar profiles in job dimension scores in terms of at least certain of the dimensions, but that differ appreciably from each other in terms of only one or a very limited number of the dimensions.

It should also be noted that, although the mean values on the different dimensions tend to characterize the clusters, the variability of the job dimension scores on certain of the dimensions are in some cases rather great. This is reflected by the standard deviations (the higher standard deviations of course indicating greater variability) and by the homogeneity (H) values (the lower scores indicating greater variability). The implication of this is that the profile of the dominant job dimension scores that characterize a given cluster is not a universally applicable profile for all of the jobs within a cluster. In other words, on certain of the dimensions the jobs within a cluster are more variable than they are on the dimensions which presumably have served as the dominant basis for the identification of the cluster.

It should be noted that the differences in the results from the BC-TRY and CODAP analyses are not necessarily the consequence of the procedures as such, but may rather be attributed, at least in part, to the nature of the job dimensions used as the input data. Those used in the BC-TRY program were the overall or general (G) dimensions, whereas those used with the CODAP program were the "divisional" dimensions (these generally being characterized by job elements of the same general "class," such as input, mediation and output activities).

In connection with clustering procedures generally, one additional reflection will be made, this being admittedly an impression without any supporting data to back it up. In the typical clustering procedures (as those used in this study) the variables used (in this instance job dimensions) are given equal statistical weight as the basis for the grouping of jobs into the clusters. It is suggested that if the "truth" were known, it might be that certain variables (in this instance job dimensions) should receive more weight or importance in the clustering than others. However, the basis for any such weighting of course would present a serious problem.

An examination of many of the jobs that fall within the individual clusters seems generally to make rational sense, but at the same time, at least in certain of the clusters, there are a number of jobs that seem subjectively not to "fit" with the jobs which tend to characterize the cluster in general. These seem to fall into two general classes. In the first place, although some combinations of jobs seem to represent strange bedfellows in terms of the overt job-related activities that are involved, it should be recalled that the basis for the clustering is in terms of job dimension scores. In this regard, jobs that involve rather obviously different kinds of overt behaviors might still have job dimension scores that are reasonably comparable. This kind of grouping is probably to be expected since the clustering process results in the reduction of a large number of jobs into a seasonably limited number of classes, with those with relatively similar job dimension score profiles falling into the same cluster.

In the second place, however, there are certain clusters which include jobs that might be thought of as distinct odd balls, and it would be difficult to envision them falling within the same class as the other jobs. A ready explanation for this is not immediately apparent, although in certain instances this could be a function of the initial PAQ analysis for such jobs. (In this regard, it should be noted that many of the jobs were analyzed by single analyses, who may not have had much experience with the PAQ, and therefore may have misinterpreted certain of the job elements, resulting in unreliable analysis).

As indicated before, the ultimate test of any job clustering would depend upon its ultimate use for certain practical objectives. It is probable that subsequent planned research efforts will at least provide partial inklings about the utility of clusters developed by the two procedures used in this particular study.

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Appendix A

Tables of Data

Table 1

Job Dimensions Used With BC-TRY Program

JG- 1	Decision/Communication/Social Responsibilities
JG- 2	Environmental Demands/General Body Control
JG- 3	Equipment/Machine Operation
JG- 4	Environmental Awareness
JG- 5	Manual Control Activities
JG- 6	Office/Related Activities
JG- 7	Evaluation of Sensory Input
JG- 8	General/Public Related Personal Contact
JG- 9	Use of Technical/Related Materials
JG-10	General Physical Activities versus Sedentary Activities
JG-11	Hazardous/Personally Demanding Situations
JG-12	Attentive/Vigilant Work Activities
JG-13	Routine/Controlled Work Activities
JG-14	Supervision/Coordination

Table 2

Job Dimensions Used with CODAP Program

J1- 1	Perceptual Interpretation
J1- 2	Evaluation of Sensory Input
J1- 3	Visual Input from Deices/ Materials
J1- 4	Input from Representational Sources
J2- 6	Decision Making
J2- 7	Information Processing
J3- 8	Manual/Control Activities
J3- 9	Physical Coordination in Control/Related Activities
J3-10	General Body Activity versus Sedentary Activities
J3-11	Manipulating/Handling Activities
J3-12	Adjusting/Operating Machines/Equipment
J3-13	Skilled/Technical Activities
J3-14	Use of Miscellaneous Equipment/Devices
J4-15	Interchange of Ideas/Judgements/Related Information
J4-16	Supervisory/Staff Activities
J4-18	Communicating Instructions/Directions/Related Job Information
J4-19	General Personal Contact
J5-23	Personally Demanding Situations
J6-24	Attentive Job Demands
J6-25	Vigilant/Discriminating Work Activities
J6-26	Structured versus Unstructured Work Activities

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Table 3

Means, Standard Deviations, and Homogeneity Indexes of Dimensions for BC-TRY Clusters

Cluster		Job Dimension 1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	M	-1.30	-.06	-.57	.49	.65	-.28	-.37	.11	-.19	.52	-.29	.57	-.23	.07
	SD	.36	.53	.48	.57	.42	.54	.35	.56	.46	.61	.40	.55	.44	.55
	H	.93	.85	.88	.80	.90	.82	.93	.82	.89	.77	.91	.81	.90	.78
Cluster 2	M	-.98	.40	-1.12	-.28	-.81	.58	2.31	.36	.19	.36	-.86	1.35	.40	-.37
	SD	.45	.78	.71	.60	.73	.53	.72	.75	.65	.94	.55	.87	.60	.55
	H	.88	.63	.70	.78	.67	.83	.68	.63	.76	.24	.82	.39	.79	.77
Cluster 3	M	-.71	1.67	-.25	.72	-.16	-.13	-.91	-.44	.04	-.16	.32	.43	.27	-1.13
	SD	.41	.71	.84	.50	.51	.83	.50	.85	.90	.88	.73	.86	.57	.71
	H	.90	.70	.54	.85	.85	.48	.86	.47	.42	.40	.66	.41	.81	.59
Cluster 4	M	-.75	-.44	-.47	.16	.56	-.09	.27	.08	-.10	.32	-.13	-.59	.35	.97
	SD	.48	.45	.49	.61	.64	.55	.57	.66	.72	.65	.63	.59	.55	.58
	H	.87	.90	.87	.76	.76	.81	.81	.73	.69	.74	.76	.78	.83	.75
Cluster 5	M	-.72	-.99	.50	-.81	-.21	-.68	.01	-.24	-.01	.75	-.58	.38	.02	-1.31
	SD	.46	.42	.79	.78	.47	.78	.44	.63	.81	.70	.60	.77	.58	.67
	H	.88	.91	.61	.57	.88	.57	.89	.75	.57	.68	.79	.58	.81	.65
Cluster 6	M	-1.34	-.11	1.29	-.02	.32	.93	-.44	-.18	.82	1.32	-.63	-.21	.10	-.47
	SD	.42	.72	.73	.66	.51	.48	.40	.64	.67	.83	.57	.63	.49	.68
	H	.90	.69	.69	.72	.85	.86	.91	.75	.74	.50	.81	.75	.87	.63
Cluster 7	M	-.72	-.64	1.20	.52	.07	-.30	-.56	-.45	.20	.38	-.08	.23	.21	.52
	SD	.47	.44	.64	.50	.44	.59	.33	.60	.64	.68	.57	.61	.47	.59
	H	.87	.90	.77	.85	.89	.78	.94	.78	.76	.71	.81	.77	.88	.74
Cluster 8	M	-1.03	.73	-.02	.92	.36	-.73	.25	.54	-.48	-.64	-.45	.38	.10	.44
	SD	.34	.70	.62	.53	.50	.48	.70	.67	.58	.62	.49	.66	.55	.55
	H	.94	.71	.79	.84	.86	.86	.70	.72	.81	.77	.87	.72	.83	.78
Cluster 9	M	.02	-.79	-.70	-.21	-.17	1.4	-.60	.07	.20	-1.36	-.24	-.32	.22	-.55
	SD	.66	.51	.63	.66	.67	.68	.49	.65	.80	.64	.57	.59	.63	.79
	H	.73	.86	.78	.72	.73	.70	.87	.74	.59	.74	.81	.78	.77	.43

M = Mean

SD = Standard Deviation

H = Homogeneity

Table 3 (cont.)

Cluster		Job Dimension 1	2	3	4	5	6	7	8	9	10	11	12	13	14
10	M	-.19	-.35	-.28	-.29	-.32	-.15	-.51	-1.01	-.47	-1.09	1.50	-.68	-.07	.20
	SD	.57	.71	.71	.72	.48	.57	.50	.77	.72	.68	.63	.54	.71	.75
	H	.81	.70	.70	.66	.87	.80	.86	.61	.69	.71	.77	.82	.70	.51
11	M	.05	-.09	-1.34	-.39	-.06	1.75	-.31	.64	-.50	.24	-.39	-1.49	.26	.90
	SD	.57	.74	.51	.73	.57	.76	.51	.80	.80	.65	.54	.70	.69	.77
	H	.81	.67	.86	.64	.82	.60	.85	.56	.60	.73	.83	.67	.71	.48
12	M	-.23	-.22	-.46	-1.30	-.53	-.54	-.38	.46	-.50	.39	-.21	-.03	.06	-.01
	SD	.48	.33	.43	.56	.49	.31	.34	.43	.49	.59	.59	.64	.52	.56
	H	.87	.94	.90	.81	.87	.94	.94	.89	.87	.79	.80	.74	.85	.77
13	M	-.26	.91	1.11	.60	-.62	-.97	1.49	.40	-.76	-.41	.20	-.85	-.22	.30
	SD	.57	.85	.74	.61	.62	.66	.73	.88	.78	.63	.70	.68	.71	.59
	H	.81	.53	.67	.77	.77	.71	.67	.41	.62	.75	.70	.70	.70	.74
14	M	-.78	.17	-.87	.32	.04	.56	-.16	.29	-.89	-.95	1.38	-1.49	-.99	-.55
	SD	.34	.51	.44	.53	.40	.87	.45	.43	.96	.56	.51	.60	.53	.73
	H	.94	.86	.90	.83	.91	.38	.89	.90	.24	.82	.85	.77	.84	.55
15	M	-.71	-.05	-.21	.15	.02	-.78	-.20	-.31	.77	-1.98	-.17	.31	.24	.19
	SD	.49	.66	.67	.62	.73	.53	.55	.64	.76	.76	.62	.68	.49	.62
	H	.86	.75	.74	.76	.70	.83	.83	.75	.64	.62	.77	.70	.86	.71
16	M	.84	-.20	-.60	-.01	-.46	-.42	-.58	.46	-.54	.26	-.01	.60	-.00	.34
	SD	.53	.36	.43	.57	.56	.33	.36	.51	.55	.56	.65	.54	.69	.53
	H	.83	.93	.90	.80	.82	.94	.93	.85	.83	.81	.74	.82	.77	.80
17	M	.01	-.72	-.15	-.26	-.36	-.67	.31	.32	.21	.25	2.00	.16	.16	.32
	SD	.61	.51	.71	.63	.53	.48	.67	.61	.78	.62	.60	.63	.68	.60
	H	.77	.86	.70	.75	.84	.86	.73	.78	.62	.77	.79	.75	.72	.73
18	M	.90	-.10	-.62	.42	-.15	-.43	-.51	-.17	1.39	.00	.06	-.12	.94	.40
	SD	.68	.60	.69	.70	.73	.50	.55	.70	.77	.63	.75	.70	.79	.74
	H	.71	.80	.72	.67	.67	.85	.82	.69	.63	.75	.64	.68	.60	.54

Table 3 (cont.)

		Job Dimension 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Cluster 19	M	-.08	.87	.42	-.13	-.27	.27	1.40	-.45	.79	.15	-.45	-.65	.42	.79
	SD	.56	.75	.76	.55	.71	.65	.64	.93	.68	.66	.63	.82	.85	.62
	H	.82	.66	.66	.82	.69	.73	.76	.78	.73	.73	.76	.50	.51	.70
Cluster 20	M	-.28	-.71	-.37	.69	-.50	-.31	1.87	.18	-.28	.01	-.16	-.06	-.36	-.03
	SD	.66	.59	.59	.56	.57	.44	.63	.67	.72	.65	.67	.85	.81	.50
	H	.73	.81	.81	.81	.81	.88	.77	.72	.69	.74	.73	.44	.56	.82
Cluster 21	M	-.66	-.52	-.40	-.83	-.17	1.38	-.59	-.77	-.21	-.24	.54	.73	.12	-.60
	SD	.35	.61	.56	.44	.53	.64	.41	.61	.60	.65	.63	.71	.48	.72
	H	.93	.79	.83	.89	.84	.74	.91	.77	.79	.74	.76	.67	.87	.56
Cluster 22	M	-.12	-.36	1.25	.35	-.69	1.19	-.34	-.80	-.07	-.40	.87	.92	.02	-.74
	SD	.46	.82	.66	.61	.49	.67	.50	.77	.77	.85	.62	.77	.60	.72
	H	.88	.57	.75	.76	.87	.70	.86	.60	.63	.48	.77	.58	.79	.57
Cluster 23	M	.41	1.70	.97	-.64	.40	1.15	.09	.97	.51	-.04	.14	.27	-.16	-.06
	SD	.61	.83	.73	.76	.84	.69	.64	.70	.80	.69	.64	.66	.70	.79
	H	.77	.56	.68	.59	.51	.69	.71	.69	.59	.70	.75	.71	.70	.43
Cluster 24	M	.20	.36	1.13	.19	-.35	.31	-.14	.24	-1.02	.17	.99	-.78	-.07	.94
	SD	.55	.76	.59	.59	.50	.67	.58	.67	.70	.65	.66	.71	.61	.62
	H	.82	.64	.80	.78	.86	.71	.81	.72	.70	.74	.74	.66	.78	.71
Cluster 25	M	.12	.46	1.47	.00	-.61	.71	1.33	.68	-.50	-.77	-.21	.84	.30	.47
	SD	.50	.62	.61	.70	.70	.61	.85	.85	.77	.82	.72	.64	.59	.64
	H	.86	.78	.79	.68	.70	.76	.49	.47	.63	.53	.67	.74	.80	.68
Cluster 26	M	-.11	-.40	.99	.10	-.03	1.43	-.19	.47	.65	1.00	.46	-.23	.17	.85
	SD	.54	.75	.69	.56	.52	.56	.74	.70	.79	.62	.65	.65	.56	.72
	H	.83	.66	.72	.81	.85	.81	.66	.69	.61	.77	.75	.72	.82	.57
Cluster 27	M	.08	1.90	1.20	.17	-.70	.38	-.36	-.55	.23	.10	.32	.56	.27	.48
	SD	.41	.73	.62	.77	.59	.74	.67	.78	.85	.60	.63	.73	.68	.68
	H	.91	.69	.78	.59	.80	.62	.73	.59	.52	.79	.77	.57	.72	.63

Table 3 (cont.)

		Job Dimension 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Cluster 28	M	.32	-.49	.15	-1.19	.27	-.46	-.43	-.15	-.53	-.51	-.68	-.38	.81	-.29
	SD	.56	.43	.56	.69	.73	.52	.39	.61	.79	.74	.59	.69	.64	.69
	H	.82	.90	.83	.68	.67	.84	.92	.78	.60	.64	.80	.68	.76	.62
Cluster 29	M	1.29	.59	-.98	-.02	.27	.09	-.44	.68	.90	.70	1.59	.46	.45	.33
	SD	.43	.72	.67	.67	.83	.61	.48	.67	.90	.58	.59	.78	.77	.62
	H	.90	.69	.74	.71	.53	.76	.87	.72	.42	.80	.80	.56	.62	.70
Cluster 30	M	.97	-.60	-.27	.35	-1.05	-.29	-.46	.16	.98	-.43	-1.29	-.52	-1.25	-.23
	SD	.56	.47	.46	.74	.47	.56	.49	.64	.89	.55	.57	.60	.65	.74
	H	.90	.85	.89	.63	.88	.81	.86	.75	.43	.82	.81	.77	.75	.54
Cluster 31	M	1.48	-.52	-.27	1.01	.04	-.38	-.36	-.00	-.62	.38	-.81	.40	-1.61	[illegible]
	SD	.55	.38	.43	.60	.60	.40	.61	.75	.69	.57	.69	.61	.80	[illegible]
	H	.82	.92	.90	.78	.57	.91	.78	.63	.72	.81	.71	.76	.59	[illegible]
Cluster 32	M	1.17	-.52	-.73	.79	.65	-.63	1.67	-.58	.24	.29	.54	-.36	1.29	-.62
	SD	.54	.61	.54	.52	.84	.58	.62	.81	.81	.65	.98	.83	.84	.66
	H	.83	.79	.84	.84	.52	.79	.71	.55	.58	.74		.48	.52	.65
Cluster 33	M	1.87	-.29	-.36	.84	.67	-.52	-.35	-.23	-.62	.25	-.66	-.30	.56	-.55
	SD	.47	.45	.47	.64	.88	.42	.60	.62	.71	.63	.67	.66	.76	.60
	H	.87	.90	.88	.74	.44	.90	.79	.77	.69	.76	.73	.72	.64	.73

Table 4

Means, Standard Deviations, and Homogeneity Indexes of Dimensions for CODAP Clusters

	Job Dimension												
	1	2	3	4	6	7	8	9	10	11	12	13	14
Cluster 1 M	.35	.04	.36	-.26	-.18	-.22	-.10	.14	-.02	.15	.60	-.36	-.17
SD	1.18	1.00	1.07	.99	.80	.99	.94	1.36	1.09	.93	1.13	.96	.80
H	—	—	—	—	.62	—	.30	—	—	.37	—	.07	.59
Cluster 2 M	.34	-.41	.30	-.27	-.17	-.52	-.51	-.43	.30	-.47	.34	.07	-.65
SD	1.04	.72	.54	.74	1.11	.55	.96	.64	.43	.56	.72	.54	.41
H	—	.63	.83	.66	—	.83	.25	.77	.90	.83	.69	.83	.91
Cluster 3 M	.15	-.49	.17	-.33	-.21	-.35	-.23	-.10	.56	.02	.01	-.01	-.05
SD	.97	.76	1.21	.97	.85	.87	1.22	.67	1.27	1.10	1.06	.66	.97
H	.27	.57	—	.20	.55	.47	—	.74	—	—	—	.73	.20
Cluster 4 M	.16	-.22	.21	-.32	-.33	-.73	-.62	-.31	.14	-.38	-.03	-.45	.13
SD	.98	.73	.92	1.00	1.08	.60	1.02	.83	.85	.78	.90	.87	.81
H	.20	.62	.33	—	—	.79	—	.55	.52	.63	.43	.43	.58
Cluster 5 M	.37	-.12	.46	-.28	-.05	-.29	-.26	.27	.32	-.06	.53	-.12	-.03
SD	1.08	1.03	1.13	.91	.94	.89	1.10	1.13	.79	.92	1.15	1.01	1.27
H	—	—	—	.39	.39	.42	—	—	.61	.39	—	—	—
Cluster 6 M	.54	-.18	.54	-.40	.08	-.52	-.81	.02	.23	.03	.40	.01	-.01
SD	1.15	1.05	.92	.86	.97	.97	1.29	1.20	.86	1.03	1.05	1.00	2.13
H	—	—	.35	.49	.31	.19	—	—	.50	—	—	—	—
Cluster 7 M	.37	-.18	.23	-.20	-.05	-.20	-.33	.03	.18	-.12	-.02	.07	.00
SD	1.28	.95	1.04	1.13	1.23	1.05	.76	.77	1.14	1.05	1.01	.93	1.26
H	—	—	—	—	—	—	.64	.64	—	—	—	.26	—
Cluster 8 M	-.02	.08	-.06	.13	-.08	.16	-.06	.11	-.13	-.10	-.11	-.04	.32
SD	1.03	.93	.92	1.04	1.05	1.09	.97	1.09	1.04	.96	.78	.81	1.33
H	—	.38	.34	—	—	—	.18	—	—	.28	.63	.54	—
Cluster 9 M	.10	.24	-.41	-.34	-.11	-.77	.04	.01	.36	-.29	-.26	-.59	.22
SD	1.26	1.12	.74	1.13	1.15	.81	.99	1.05	1.02	.81	1.01	.64	1.07
H	—	—	.66	—	—	.57	—	—	—	.66	—	.57	—

M = Median

SD = Standard Deviation

H = Homogeneity

Table 4 (cont.)

Cluster		Job Dimension 15	16	18	19	23	24	25	26
1	M	.24	-.21	.15	.19	-.22	.19	-.39	.29
	SD	.72	.71	1.01	.54	.78	.92	1.10	.88
	H	.72	.68	-----	.82	.63	.35	-----	.27
2	M	.23	-.46	.29	.26	-.55	.33	-.05	-.06
	SD	.76	.47	.84	.57	.57	1.05	1.13	.48
	H	.67	.87	.54	.80	.82	-----	-----	.88
3	M	.28	-.13	.03	-.31	-.28	.30	-.12	-.09
	SD	.75	.79	1.01	1.69	1.18	1.03	.91	.97
	H	.68	-----	-----	-----	-----	-----	.43	.32
4	M	.55	-.17	-.14	.20	-.35	.80	.21	-.03
	SD	.38	.58	1.16	.56	.78	.87	.98	.93
	H	.93	.80	-----	[illegible]	.64	.47	.25	.43
5	M	.17	.07	.33	-.21	-.09	.40	-.35	.11
	SD	.84	.83	.96	1.52	1.26	1.05	.90	.98
	H	.40	.52	.25	-----	-----	-----	.45	.30
6	M	.23	-.08	.40	.07	-.23	.18	-.31	.11
	SD	.62	.99	1.02	.91	.94	.62	.94	.88
	H	.80	-----	-----	.29	.38	.77	.38	.52
7	M	.11	-.00	-.02	-.07	.12	.17	-.11	-.28
	SD	.31	1.24	1.11	.87	1.21	1.02	.97	1.09
	H	---	-----	-----	.42	-----	-----	.28	-----
8	M	.20	-.06	-.12	-.20	.01	.03	.07	.39
	SD	.89	.89	.95	1.10	.85	.78	1.04	.94
	H	.50	.41	.31	-----	.55	.62	-----	.40
9	M	.35	.57	-.12	-.25	-.27	.49	-.16	.15
	SD	.70	1.00	1.32	.76	.88	1.06	.84	.96
	H	.73	-----	-----	.58	.50	-----	.55	.36

Table 4 (cont.)

Cluster		Job Dimension 1	2	3	4	6	7	8	9	10	11	12	13	14
Cluster 10	M	.15	.19	-.10	-.09	.11	-.14	-.12	.49	.12	-.14	.09	-.10	-.05
	SD	.56	1.03	.85	.96	1.16	.93	1.08	1.09	.97	.93	1.00	1.12	1.01
	H	.30	——	.50	.21	——	.33	——	——	.24	.20	——	——	——
Cluster 11	M	.11	-.22	.35	-.12	-.19	-.19	-.26	.01	.02	.01	.24	-.15	-.25
	SD	.96	.76	.94	1.06	.96	.79	.98	.90	1.09	.99	.96	.94	.96
	H	.29	.58	.27	——	.35	.60	.11	.42	——	.15	.28	.25	.25
Cluster 12	M	.07	-.55	-.25	.09	-.11	-.61	-.28	.16	-.03	-.32	-.10	-.30	-.51
	SD	.56	.39	.79	1.03	1.17	.70	.88	.88	.80	.44	.71	1.05	.54
	H	.83	.91	.59	——	——	.70	.46	.46	.60	.90	.71	——	.84
Cluster 13	M	.12	.19	.19	.31	1.06	-.24	-.12	.41	-.19	-.20	-.16	.40	.14
	SD	1.02	.96	1.17	.40	.82	.79	.94	.82	.71	.96	.70	1.27	.98
	H	——	——	——	.91	.59	.60	.30	.57	.70	.27	.72	——	.12
Cluster 14	M	-.22	-.17	.05	.34	.29	-.09	-.14	-.12	-.10	-.24	-.56	.38	.23
	SD	.89	.85	.97	.84	.72	.89	.68	.72	1.14	.64	.72	1.14	.80
	H	.46	.40	.16	.52	.71	.42	.72	.69	——	.77	.69	——	.58
Cluster 15	M	-1.04	-.67	-.14	.71	.12	.57	.86	.01	-.59	.60	-.75	.96	.01
	SD	.58	.19	1.16	.47	.60	1.30	.55	.64	.29	1.47	.33	.93	.17
	H	.82	.89	——	.88	.81	——	.83	.77	.96	——	.94	.29	.98
Cluster 16	M	.18	.27	.45	.85	.98	.64	.01	-.18	-.01	-.52	.12	1.00	.24
	SD	1.06	1.03	.69	.62	.91	.72	1.02	.70	.90	.94	.86	.78	1.14
	H	——	——	.71	.78	.45	.67	——	.71	.42	.33	.50	.59	——
Cluster 17	M	-.81	1.01	-.25	1.12	.85	1.09	.54	-.11	-.33	-.40	-.24	.28	.36
	SD	.41	.82	1.22	.37	.62	.93	.35	.58	.45	.56	.70	.44	.43
	H	.91	.47	——	.93	.79	.32	.93	.81	.89	.83	.71	.89	.90
Cluster 18	M	-.29	.08	-.57	.24	-.06	.32	.46	-.03	-.37	.07	-.42	-.01	-.08
	SD	.68	.78	.67	.91	1.03	.96	.70	.98	.84	.90	.61	.84	.60
	H	.74	.55	.73	.39	——	.21	.70	.18	.53	.43	.79	.50	.79
Cluster 19	M	-.20	-.05	-.30	.38	-.17	.37	.40	-.37	-.60	.40	.29	-.09	-.13
	SD	.65	.62	1.00	.85	1.10	.88	1.00	.44	.93	1.16	1.19	.79	.44
	H	.76	.75	——	.52	——	.45	——	.90	.37	——	——	.58	.89

Table 4 (cont.)

		Job Dimension							
		15	16	18	19	23	24	25	26
Cluster 10	M	- .07	.24	.21	- .13	.46	- .01	- .44	- .10
	SD	1.11	1.14	1.16	1.07	1.33	1.06	.96	.98
	H	——	——	——	——	——	——	.31	.29
Cluster 12	M	.23	- .03	.07	.23	- .33	.21	.08	.20
	SD	.78	.76	.90	.62	.75	.90	1.11	1.06
	H	.65	.62	.43	.77	.67	.41	——	——
Cluster 12	M	.50	.01	.12	.17	.09	.23	- .00	.24
	SD	.49	.45	.51	.20	.86	.82	.90	.74
	H	.88	.39	.86	.98	.53	.55	.46	.69
Cluster 13	M	- .68	.13	.12	.09	.10	- .45	.02	- .38
	SD	1.14	1.08	.97	.99	.74	.58	.68	1.40
	H	——	——	.22	——	.68	.81	.74	——
Cluster 14	M	- .14	- .50	.19	.14	- .13	- .33	.48	.10
	SD	.94	.76	1.01	.55	.64	.55	1.00	.99
	H	.40	.62	——	.82	.78	.83	——	.25
Cluster 15	M	- .45	- .86	.66	.49	.24	-1.13	1.10	.13
	SD	.79	.57	1.19	.54	.63	.52	.79	.84
	H	.64	.81	——	.82	.79	.85	.62	.57
Cluster 16	M	-1.36	.11	.08	.05	.68	- .65	- .36	- .56
	SD	1.16	1.48	.99	1.33	1.17	.75	.95	.97
	H	——	——	.10	——	——	.64	.35	.33
Cluster 17	M	-1.39	.76	.00	.32	.82	-1.12	.16	- .55
	SD	.84	.91	.42	.48	.96	.54	.99	1.00
	H	.57	.36	.91	.87	.32	.84	.22	.22
Cluster 18	M	- .07	- .03	- .36	.11	.06	- .31	.41	- .02
	SD	1.05	.77	.79	1.00	.85	.87	.92	1.08
	H	——	.61	.61	——	.55	.46	.41	——
Cluster 19	M	.06	- .16	- .67	.05	- .34	- .43	.85	.09
	SD	.98	.34	.66	.66	.56	.80	.92	1.23
	H	.30	.94	.75	.72	.85	.59	.41	——

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Table 4 (cont.)

		Job Dimension												
		1	2	3	4	6	7	8	9	10	11	12	13	14
Cluster 20	M	-.32	.42	-.07	-.36	.58	-.08	-.19	.03	.22	-.44	-.55	-.21	-.19
	SD	.58	1.27	.38	1.43	.92	1.00	.92	.96	.34	.56	.16	.63	.40
	H	.82	——	.92	——	.42	——	.37	.26	.94	.83	.99	.76	.92
Cluster 21	M	-.20	.24	.10	-.18	-.59	.16	.01	-.03	.40	.99	-.37	.01	-.24
	SD	.90	.92	1.02	.66	.42	1.15	.82	1.02	1.36	1.38	1.25	.45	.83
	H	.43	.16	——	.74	.91	——	.55	——	——	——	——	.86	.54
Cluster 22	M	-.26	.06	-.45	.34	.32	.04	.26	-.28	-.19	.01	-.36	.22	.22
	SD	.90	1.00	.61	.90	.98	.81	.63	.89	.84	.82	.73	.73	.93
	H	.44	——	.78	.41	.28	.57	.77	.44	.54	.57	.68	.50	.34
Cluster 23	M	-.89	.49	.24	.47	.67	.19	.38	-.32	-.32	-.37	-.15	.40	-.11
	SD	.64	.95	.93	.75	.88	.79	.71	.54	.69	.79	1.08	.94	.38
	H	.77	——	.35	.65	.51	.60	.70	.84	.72	.61	——	.23	.92
Cluster 24	M	-.04	.18	.09	.32	.21	.14	.51	-.01	.52	.37	.33	-.03	.33
	SD	.64	.91	.79	1.03	.91	.73	.91	.67	1.05	1.02	1.16	1.17	.26
	H	.77	.21	.59	——	.45	.67	.39	.74	——	——	——	——	.96
Cluster 25	M	-.42	.02	-.70	.05	-.40	.42	-.17	.03	-.23	-.02	-.77	-.21	.10
	SD	.47	.85	.72	.70	.58	1.12	.86	.94	.76	1.08	.56	.75	.51
	H	.88	.41	.68	.70	.82	——	.48	.34	.65	1.00	.83	.63	.85
Cluster 26	M	-.21	-.47	.03	.09	.15	.47	-.09	-.28	-.58	-.06	-.59	-.16	-.27
	SD	.70	.92	.77	.73	.71	.46	.86	.32	1.11	1.35	.55	.62	.42
	H	.72	.17	.62	.67	.72	.88	.48	.95	——	——	.84	.77	.91
Cluster 27	M	-.75	-.09	-.03	.10	-.31	.17	.04	.06	-.24	.31	-.29	-.41	-.06
	SD	.27	.67	.78	.85	1.05	.97	.75	1.26	1.13	1.05	.78	.74	.78
	H	.96	.70	.60	.51	——	.14	.65	——	——	——	.63	.64	.62
Cluster 28	M	.17	.74	-.28	.47	-.07	.17	.53	-.31	-.50	.11	.28	-.67	-.26
	SD	.86	.99	.53	.79	.57	1.08	.90	.30	.81	.87	1.19	.60	.56
	H	.52	——	.84	.60	.83	——	.41	.95	.58	.49	——	.78	.82
Cluster 29	M	-.77	.34	-.56	-.06	-.38	.53	.49	-.51	-.63	.84	-.45	-.25	-.04
	SD	.17	.83	.64	.72	.74	.98	.49	.34	.89	1.08	.94	.41	.23
	H	.99	.46	.75	.68	.69	.12	.87	.94	.46	——	.35	.90	.97

Table 4 (cont.)

Cluster		Job Dimension 15	16	18	19	23	24	25	26
20	M	.45	.60	.22	.29	-.02	.09	-.49	-.27
	SD	.54	1.18	1.05	.81	1.22	.54	.81	1.10
	H	.85	——	——	.53	——	.84	.60	——
21	M	.49	-.44	-.10	.22	-.17	-.10	-.06	.84
	SD	.29	.44	.91	.46	.96	.64	1.00	.68
	H	.96	.89	.41	.88	.31	.76	.14	.75
22	M	-.41	.34	-.31	.09	.25	-.20	.28	-.20
	SD	1.21	1.15	.96	.72	1.02	1.39	1.00	.85
	H	——	——	.28	.65	——	——	.18	.56
23	M	-.81	.49	-.67	.40	.47	-.53	.60	-.72
	SD	1.32	1.21	.43	.75	1.01	.67	.79	1.03
	H	——	——	.90	.61	.03	.74	.63	——
24	M	-.51	-.24	-.08	.69	-.02	-.60	.09	.38
	SD	1.44	1.34	.50	.48	.62	1.19	.63	.55
	H	——	——	.86	.87	.79	——	.78	.85
25	M	-.01	.22	-.01	.51	.01	-.01	.45	-.32
	SD	1.11	1.34	.93	.52	.61	.95	.71	.79
	H	——	——	.36	.84	.79	.26	.71	.64
26	M	.00	-.27	-.55	-.03	.06	-.49	.62	-.08
	SD	1.10	.53	.84	.49	.93	.54	.67	1.02
	H	——	.84	.53	.51	.40	.84	.75	.12
27	M	.20	-.25	-.63	.00	-.42	.29	.28	.19
	SD	.53	.46	.89	.34	.32	.77	.66	.92
	H	.86	.88	.45	.93	.95	.63	.76	.44
28	M	-.28	.31	-.39	-.09	-.04	-.63	.59	.13
	SD	.96	.66	.93	.88	.59	1.04	.60	1.38
	H	.35	.74	.37	.39	.81	——	.80	——
29	M	.17	-.10	-.44	.03	.01	-.32	.98	.25
	SD	.51	.29	.90	.77	.79	.76	.78	1.13
	H	.87	.95	.43	.59	.63	.64	.64	——

Table 4 (cont.)

Cluster		Job Dimension 1	2	3	4	6	7	8	9	10	11	12	13	14
30	M	-.31	-.05	-.87	.69	-.27	1.02	.71	-.27	-.65	.40	-.81	.20	.08
	SD	.97	.68	.49	.32	.81	.67	.13	.40	.56	.78	.17	.50	.32
	H	.25	.69	.87	.95	.61	.74	.99	.91	.83	.62	.99	.86	.95
31	M	-.64	.03	-.97	.13	-.31	.19	.52	-.50	-.65	.20	-.53	-.44	.32
	SD	.09	.75	.34	.57	.49	.73	.37	.22	.57	.62	.51	.67	.34
	H	1.00	.59	.94	.82	.88	.67	.93	.98	.82	.79	.86	.72	.94
32	M	-.34	.26	-.81	-.46	-.21	-.42	.38	-.45	.11	-.01	-.26	-.04	-.23
	SD	.18	1.12	.41	1.19	1.07	1.38	.66	.56	1.22	1.37	.30	.45	.50
	H	.98	——	.91	——	——	——	.74	.83	——	——	.95	.89	.86
33	M	.05	.11	-.91	-.98	-.10	.45	.25	1.03	-.31	-.83	-.15	.01	-.24
	SD	1.10	.90	.50	.99	1.10	.67	.48	1.42	.96	.51	.67	1.02	.67
	H	——	.27	.86	——	——	.74	.87	——	.26	.86	.74	——	.73
34	M	-.16	.22	-.39	-.29	-.43	.46	.18	-.40	-.04	1.03	-.27	.23	-.40
	SD	1.18	1.25	.69	1.26	.99	1.00	.61	.45	1.02	1.58	.70	1.25	.65
	H	——	——	.71	——	.23	——	.79	.89	——	——	.71	——	.75
35	M	-.15	-.33	-.30	.33	-.10	-.02	.28	.01	-.24	.38	-.20	-.19	.02
	SD	.63	.66	.92	.85	.85	1.00	.84	1.07	.99	.83	1.22	.96	1.02
	H	.78	.71	.34	.35	.55	——	.48	——	.12	.55	——	.15	——
36	M	-.42	-.28	-.93	.40	-.00	.38	.27	-.53	-.88	.23	-.87	-.04	-.14
	SD	.30	.42	.36	.68	1.02	.97	.39	.14	.62	1.05	.23	.33	.22
	H	.95	.90	.93	.73	.09	.19	.92	.99	.78	——	.97	.94	.97
37	M	-.69	.27	-.58	.11	.05	.88	.64	.11	.29	.01	-.62	.06	.02
	SD	.32	.93	.49	1.00	1.50	1.01	.43	.61	1.06	1.40	.30	.53	.70
	H	.95	.08	.87	——	——	——	.90	.79	——	——	.95	.83	.70
38	M	-.58	-.20	.31	.78	.27	.58	-.06	-.39	-.31	.48	-.48	-.41	.03
	SD	.65	.78	.96	.73	.74	.97	.67	.53	.76	1.17	.63	1.30	.97
	H	——	.74	.47	.85	.92	.58	——	——	.83	.69	——	.34	.97
39	M	-.18	.74	-.57	.05	.17	.29	.39	.45	-.80	.57	-.36	.09	-.09
	SD	1.00	.64	.57	.76	1.00	.50	.48	.87	.37	.98	.80	.63	.60
	H	——	.73	.81	.64	.21	.86	.88	.49	.93	.21	.60	.76	.79

Table 4 (cont.)

Cluster		15	16	18	19	23	24	25	26
		Job Dimension							
30	M	.05	.53	-.53	.44	.33	-.57	.28	.30
	SD	.76	1.91	.64	.49	1.10	.96	.10	1.23
	H	.68	———	.76	.86	———	.24	1.00	———
31	M	.62	.03	-.37	-.10	-.60	-.22	.71	.24
	SD	.41	1.01	.87	.91	.32	.59	.51	.75
	H	.92	———	.48	.30	.95	.80	.87	.68
32	M	.60	.61	-.85	.02	-.36	.21	.66	.36
	SD	.27	.96	.42	.72	.66	1.44	.33	1.55
	H	.97	.13	.91	.65	.76	———	.95	———
33	M	-.30	-.48	.17	.19	-.15	.16	.14	.04
	SD	1.21	.41	1.24	.48	.60	1.27	1.34	.39
	H	———	.91	———	.86	.80	———	———	.92
34	M	-.19	.20	.28	-.84	.06	-.29	.45	.25
	SD	.63	.90	1.11	1.50	.94	.91	.87	.86
	H	.79	.38	———	———	.37	.39	.52	.55
35	M	.23	-.03	-.05	.28	-.07	-.14	.32	.10
	SD	.88	.63	.84	.50	.67	.89	.73	1.07
	H	.51	.77	.54	.85	.75	.43	.69	———
36	M	-.10	.61	-1.21	.39	-.40	-.51	.70	-.04
	SD	.56	1.15	.29	.37	.68	.57	.42	1.23
	H	.84	———	.96	.92	.74	.81	.91	———
37	M	-.99	.11	-.04	.28	1.05	-.95	.77	-.05
	SD	1.16	1.33	.51	.74	1.11	.66	.74	1.05
	H	———	———	.86	.64	———	.75	.68	———
38	M	-.99	-.40	-.12	.01	.29	-.60	.07	-.20
	SD	1.20	1.11	.75	.63	.82	.68	.72	.9'
	H	———	.80	.39	.93	.78	.64	———	———
39	M	-.06	.22	-.63	-.43	1.01	-.68	.46	.34
	SD	1.31	1.02	.47	1.56	1.04	.91	.78	1.44
	H	———	———	.88	———	———	.38	.64	———

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Table 4 (cont.)

Cluster		Job Dimension 1	2	3	4	6	7	8	9	10	11	12	13	14
40	M	- .00	- .12	1.25	.24	.51	.28	-1.17	- .09	- .49	.22	- .12	.37	.16
	SD	1.20	.63	.86	.52	.40	.80	1.22	1.02	.55	.73	1.03	.91	.22
	H	———	.74	.47	.85	.92	.58	———	———	.83	.69	———	.34	.97
41	M	1.75	- .43	- .39	.06	- .01	- .24	- .75	2.43	- .33	.20	.67	- .28	- .18
	SD	.30	.30	1.06	1.03	.71	.30	1.36	.30	.18	.33	.10	.35	.14
	H	.96	.95	———	———	.72	.95	———	.95	.98	.94	1.00	.93	.99
42	M	- .16	- .02	- .14	.21	.07	.19	.27	- .14	- .04	- .01	- .17	.22	- .14
	SD	.95	.82	.91	.94	.95	.98	.84	.94	1.01	.90	.96	1.00	.66
	H	.32	.49	.37	.29	.36	.02	.30	.34	———	.44	.29	.25	.74

Table 4 (cont.)

Cluster		Job Dimension 15	16	18	19	23	24	25	26
40	M	-.62	-.66	.38	.66	.36	-.75	.55	-.23
	SD	1.07	.59	.92	.35	.63	.75	1.03	1.07
	H	-----	.80	.39	.93	.78	.64	-----	-----
41	M	-.00	-.49	.72	.76	-.40	.81	-1.55	-.26
	SD	.43	.12	1.04	.49	.74	.72	.02	.14
	H	.91	.99	-----	.86	.68	.68	1.00	.99
42	M	-.18	-.17	-.26	.09	-.12	-.04	.23	-.18
	SD	1.05	.93	.80	.84	.84	1.02	.97	.94
	H	-----	.27	.60	.47	.55	-----	.30	.39

Table 5

Average Homogeneity Indexes for BC-TRY Clusters

Cluster		Cluster	
1	.86	18	.70
2	.70	19	.68
3	.67	20	.74
4	.79	21	.80
5	.74	22	.71
6	.77	23	.66
7	.82	24	.75
8	.80	25	.69
9	.74	26	.74
10	.74	27	.70
11	.72	28	.76
12	.86	29	.71
13	.69	30	.78
14	.79	31	.77
15	.75	32	.67
16	.84	33	.76
17	.76		

Overall Average = .75

Table 6

Average Homogeneity for CODAP Clusters

Cluster		Cluster	
1	.26	22	.39
2	.61	23	.47
3	.25	24	.43
4	.45	25	.57
5	.20	26	.56
6	.24	27	.61
7	.11	28	.49
8	.24	29	.62
9	.26	30	.66
10	.11	31	.76
11	.34	32	.50
12	.62	33	.42
13	.34	34	.34
14	.47	35	.41
15	.64	36	.69
16	.31	37	.43
17	.65	38	.48
18	.44	39	.47
19	.46	40	.47
20	.48	41	.74
21	.44	42	.32

Overall Average = .45

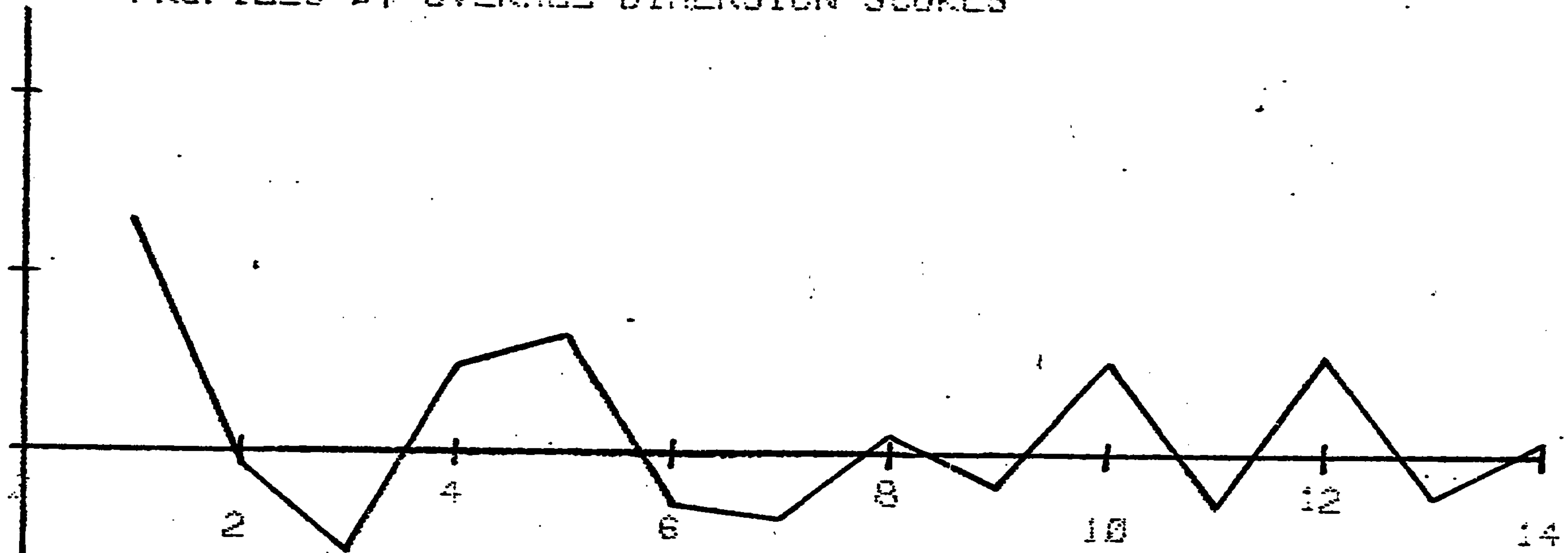
Appendix B

Job Clusters Resulting from BC-TRY Program

Note: The three sets of values for each dimension (as shown for each cluster) represent the following:

1.	Top Value	Mean
2.	Middle Value	Standard Deviation
3.	Lower Value	Homogeneity Index

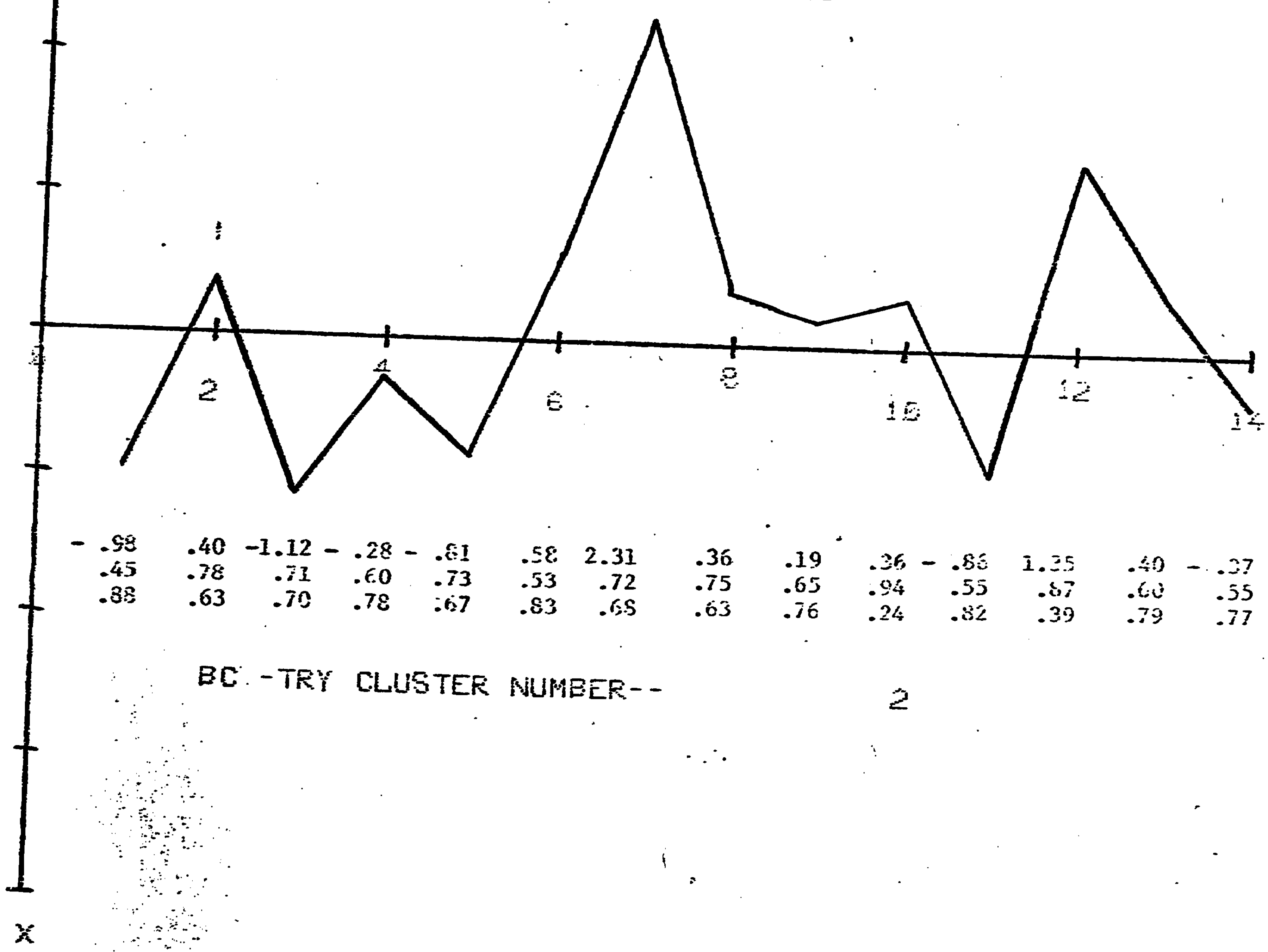
PROFILES BY OVERALL DIMENSION SCORES



-1.30	-.06	-.57	.49	.65	-.28	-.37	.11	-.19	.52	-.29	.57	-.23	.07
.36	.53	.48	.57	.42	.54	.35	.56	.46	.61	.40	.55	.44	.55
.93	.85	.88	.80	.90	.82	.93	.82	.89	.77	.91	.81	.90	.78

BC -TRY CLUSTER NUMBER-- 1

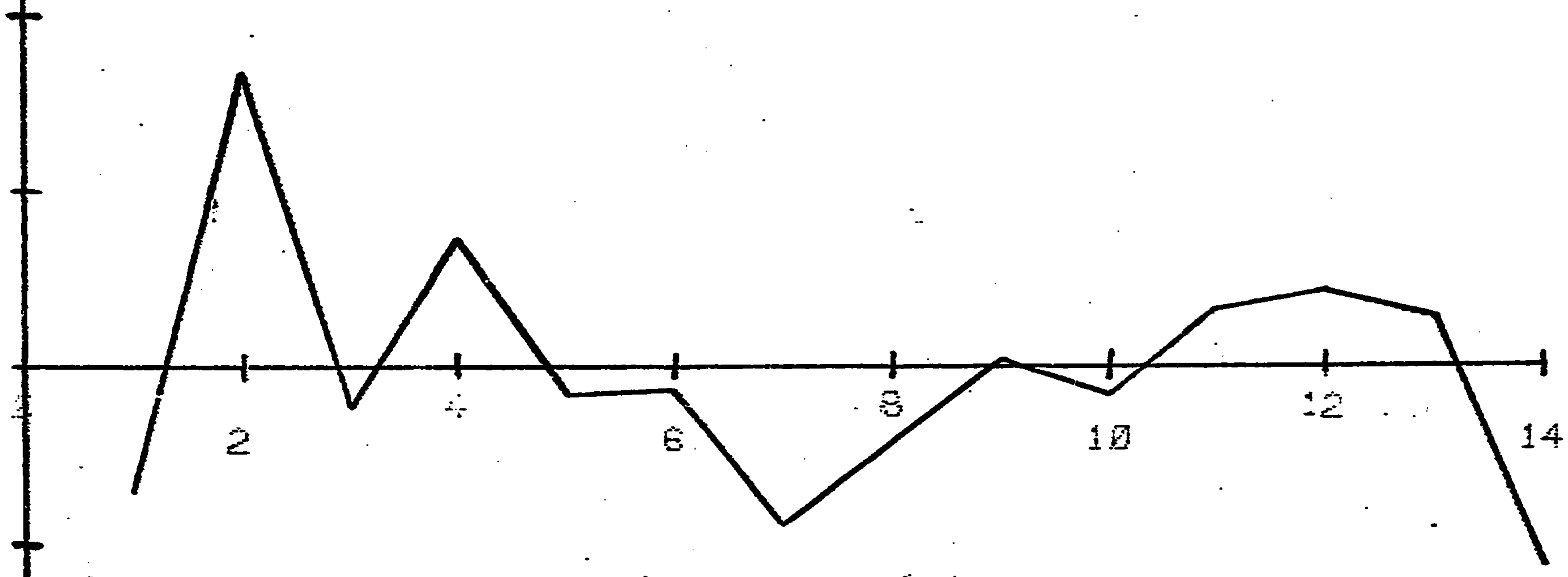
PROFILES BY OVERALL DIMENSION SCORES



-.98	.40	-1.12	-.28	-.81	.58	2.31	.36	.19	.36	-.86	1.35	.40	-.37
.45	.78	.71	.60	.73	.53	.72	.75	.65	.94	.55	.87	.60	.55
.88	.63	.70	.78	.67	.83	.68	.63	.76	.24	.82	.39	.79	.77

BC -TRY CLUSTER NUMBER-- 2

PROFILES BY OVERALL DIMENSION SCORES



-.71	1.67	-.25	.72	-.16	-.13	-.91	-.44	.04	-.16	.32	.43	.27	-1.13
.41	.71	.84	.50	.51	.83	.50	.85	.90	.88	.73	.86	.57	.71
.90	.70	.54	.85	.85	.48	.86	.47	.42	.40	.66	.41	.81	.59

BC'-TRY CLUSTER NUMBER--> N

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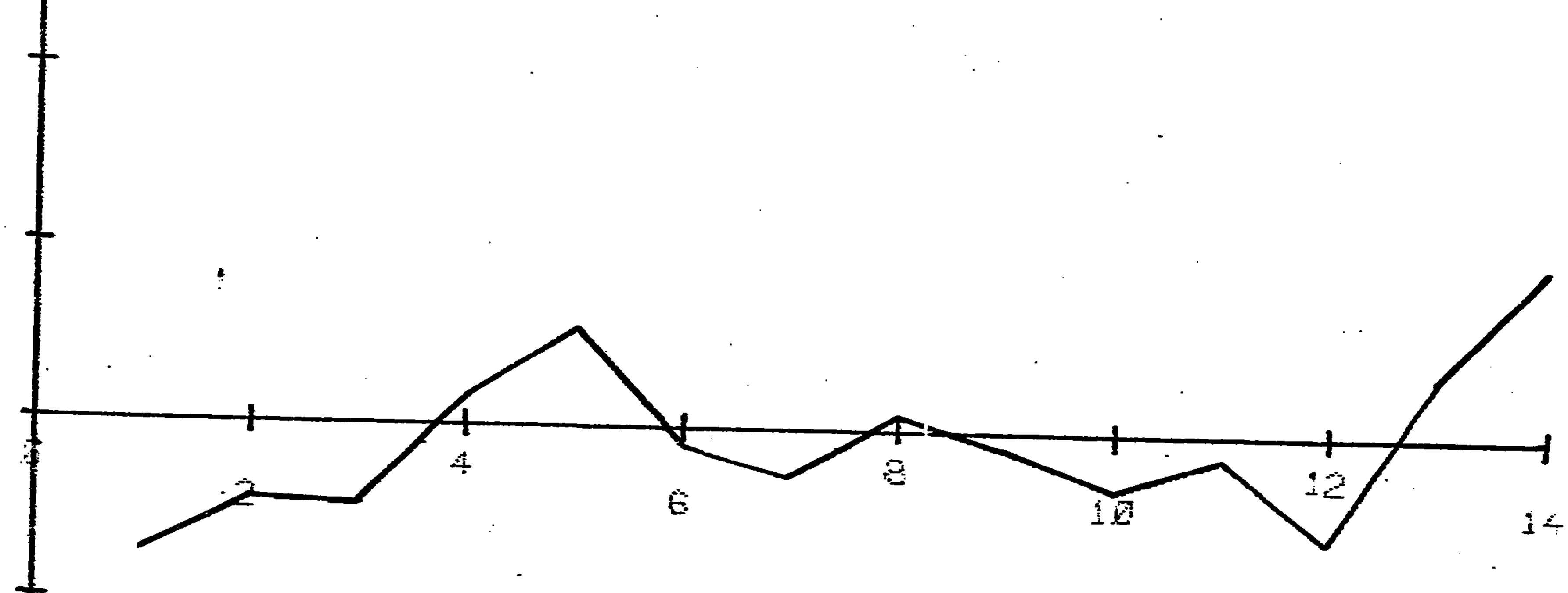
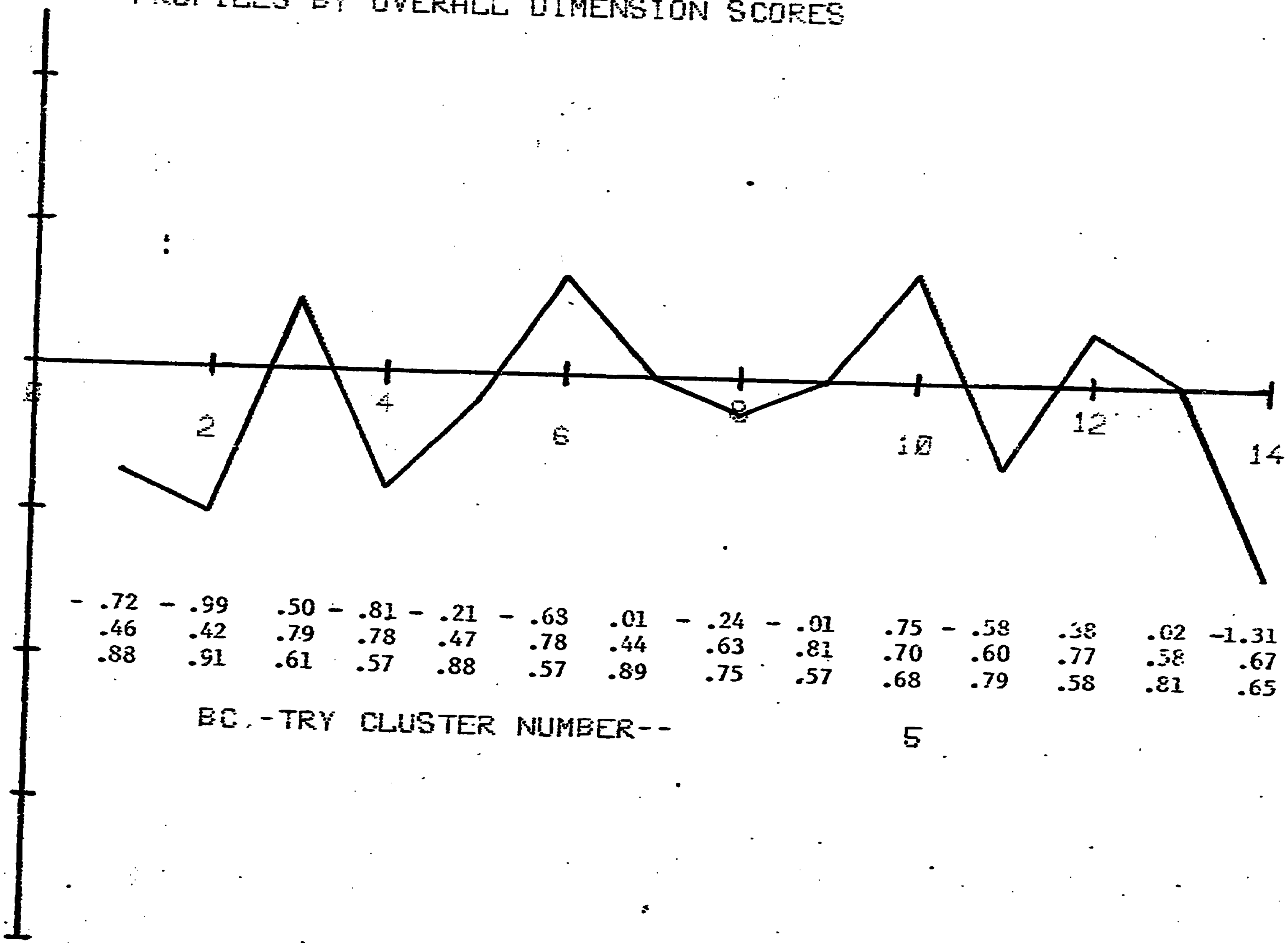


-.75	-.44	-.47	.16	.56	-.09	.27	.08	-.10	.32	-.13	-.59	.35	.97
.48	.45	.49	.61	.64	.55	.57	.66	.72	.65	.63	.59	.55	.58
.87	.90	.87	.76	.76	.81	.81	.73	.69	.74	.76	.78	.83	.75

BC -TRY CLUSTER NUMBER-- 4

PROFILES BY OVERALL DIMENSION SCORES



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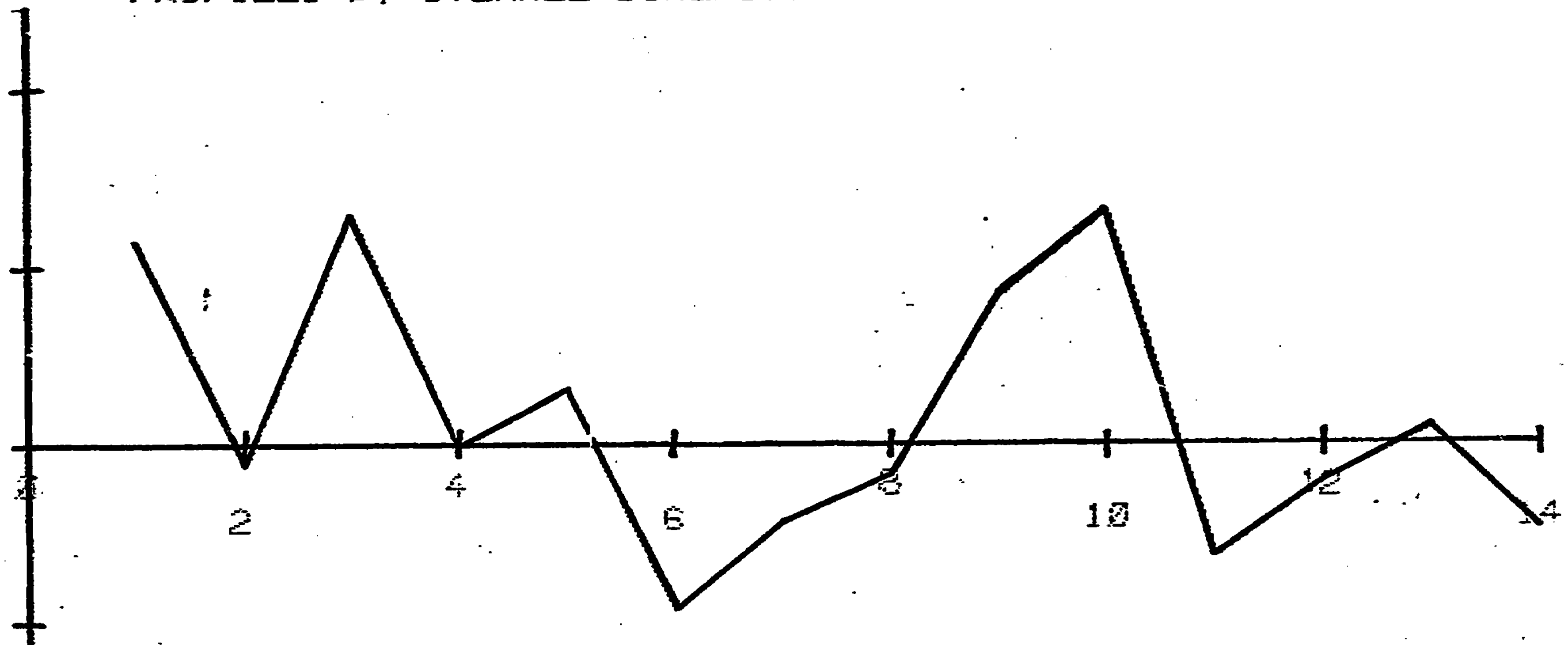
PROFILES BY OVERALL DIMENSION SCORES



-1.14	- .11	1.29	- .02	.32	.93	- .44	- .18	.82	1.32	- .63	- .21	.10	- .47
.42	.72	.73	.66	.51	.48	.40	.64	.67	.83	.57	.63	.49	.68
.90	.69	.69	.72	.85	.86	.91	.75	.74	.50	.81	.75	.87	.63

BC -TRY CLUSTER NUMBER-- 6

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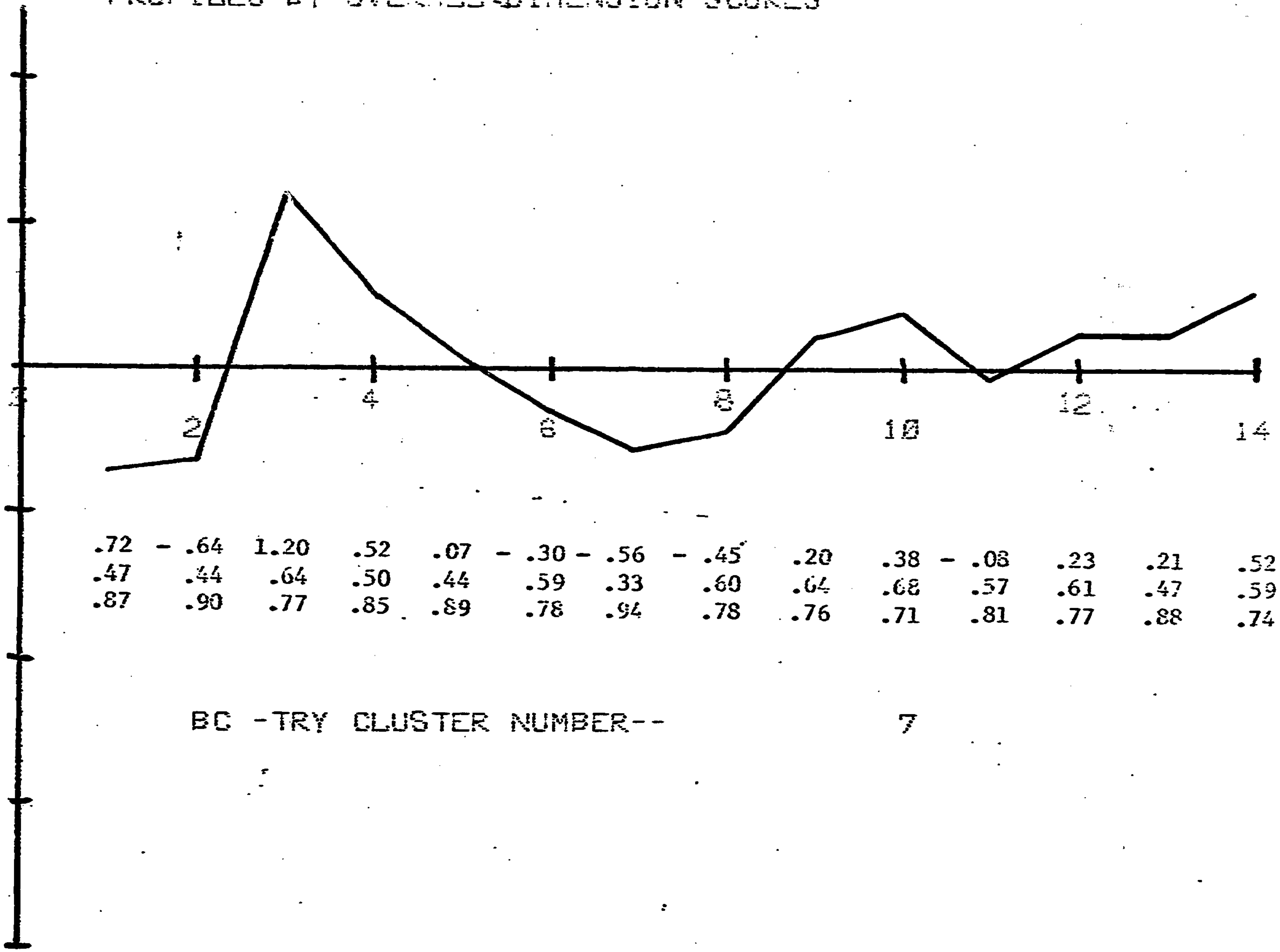
PROFILES BY OVERALL-DIMENSION SCORES



BC -TRY CLUSTER NUMBER-- 7

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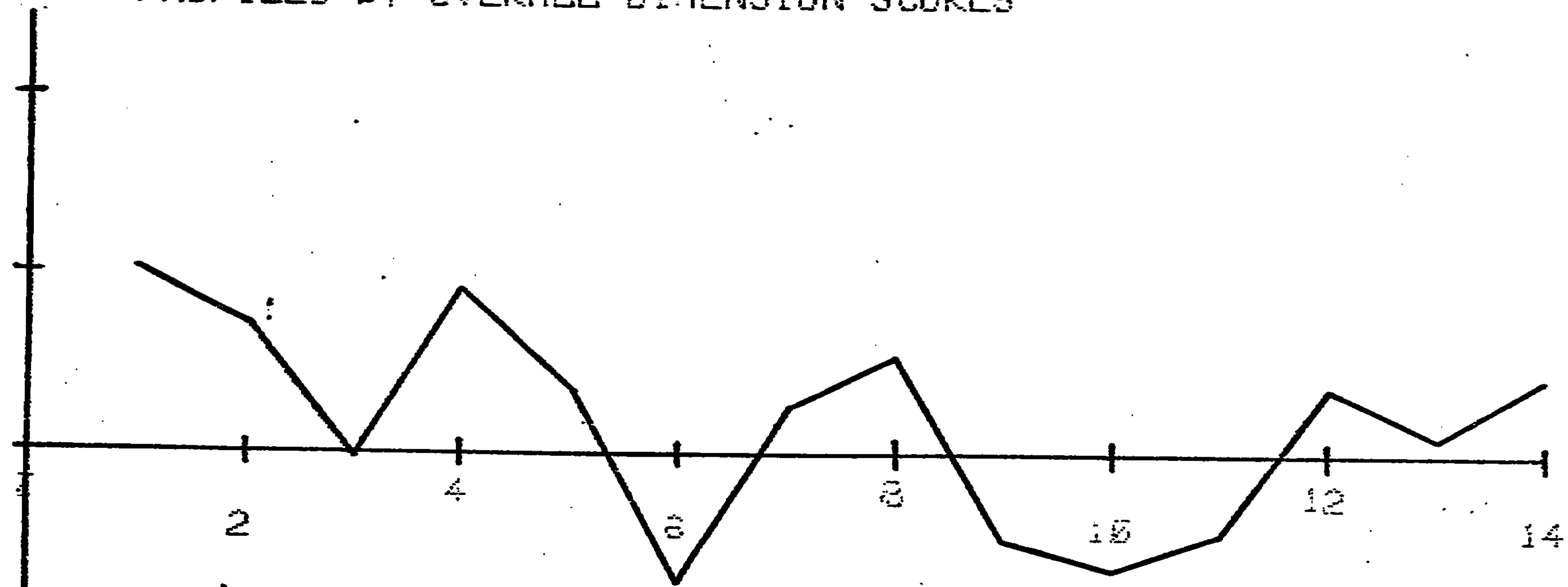
PROFILES BY OVERALL DIMENSION SCORES



1.03	.73	-.02	.92	.36	-.73	.25	.54	-.48	-.64	-.45	.38	.10	.44
.34	.70	.62	.53	.50	.48	.70	.67	.58	.62	.49	.66	.55	.55
.94	.71	.79	.84	.86	.86	.70	.72	.81	.77	.87	.72	.83	.78

BC -TRY CLUSTER NUMBER-- 8

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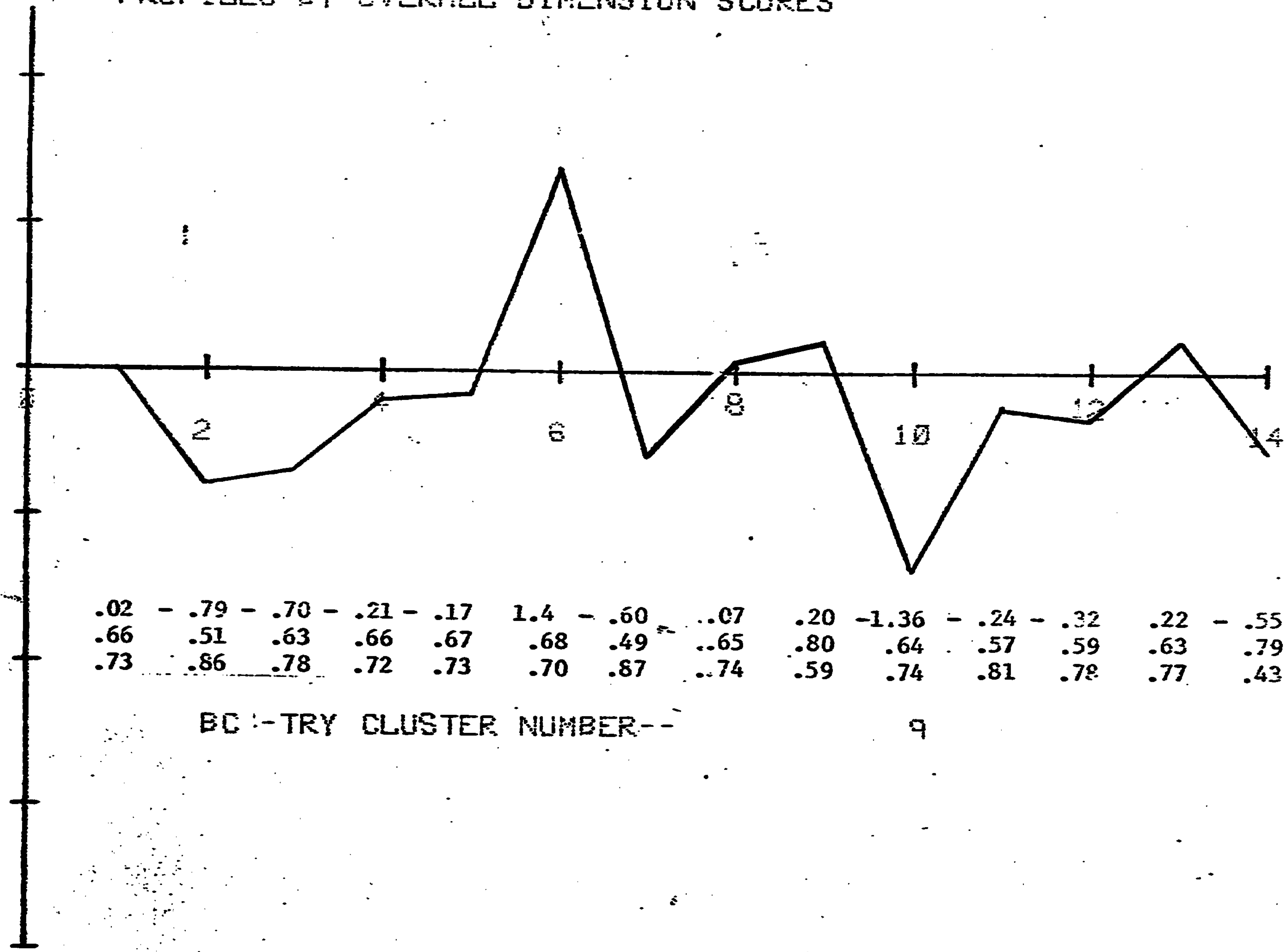
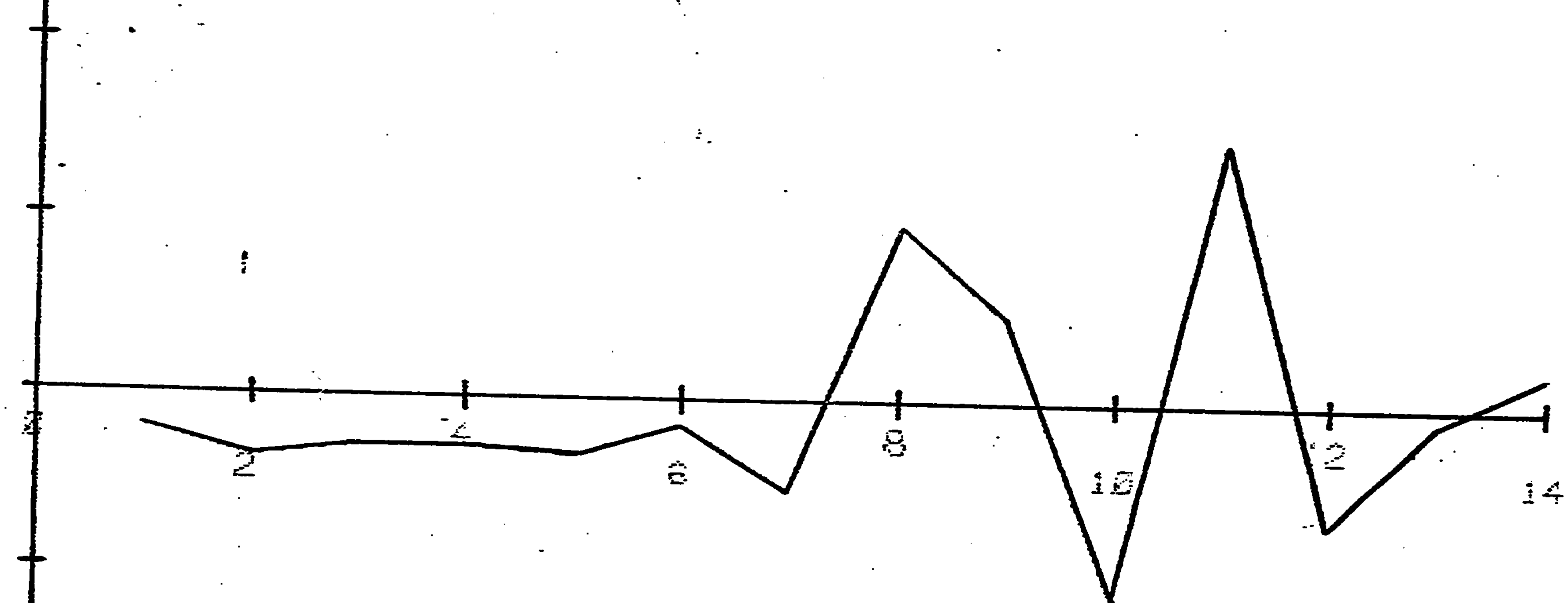
PROFILES BY OVERALL DIMENSION SCORES



BC -TRY CLUSTER NUMBER-- 9

PROFILES BY OVERALL DIMENSION SCORES



-.19	-.35	-.28	-.29	-.32	-.15	-.51	-1.01	-.47	-1.69	1.50	-.68	-.07	.20
.57	.71	.71	.72	.48	.57	.50	.77	.72	.68	.63	.54	.71	.75
.81	.70	.70	.66	.87	.80	.86	.61	.69	.71	.77	.82	.70	.51

BC -TRY CLUSTER NUMBER-- 10

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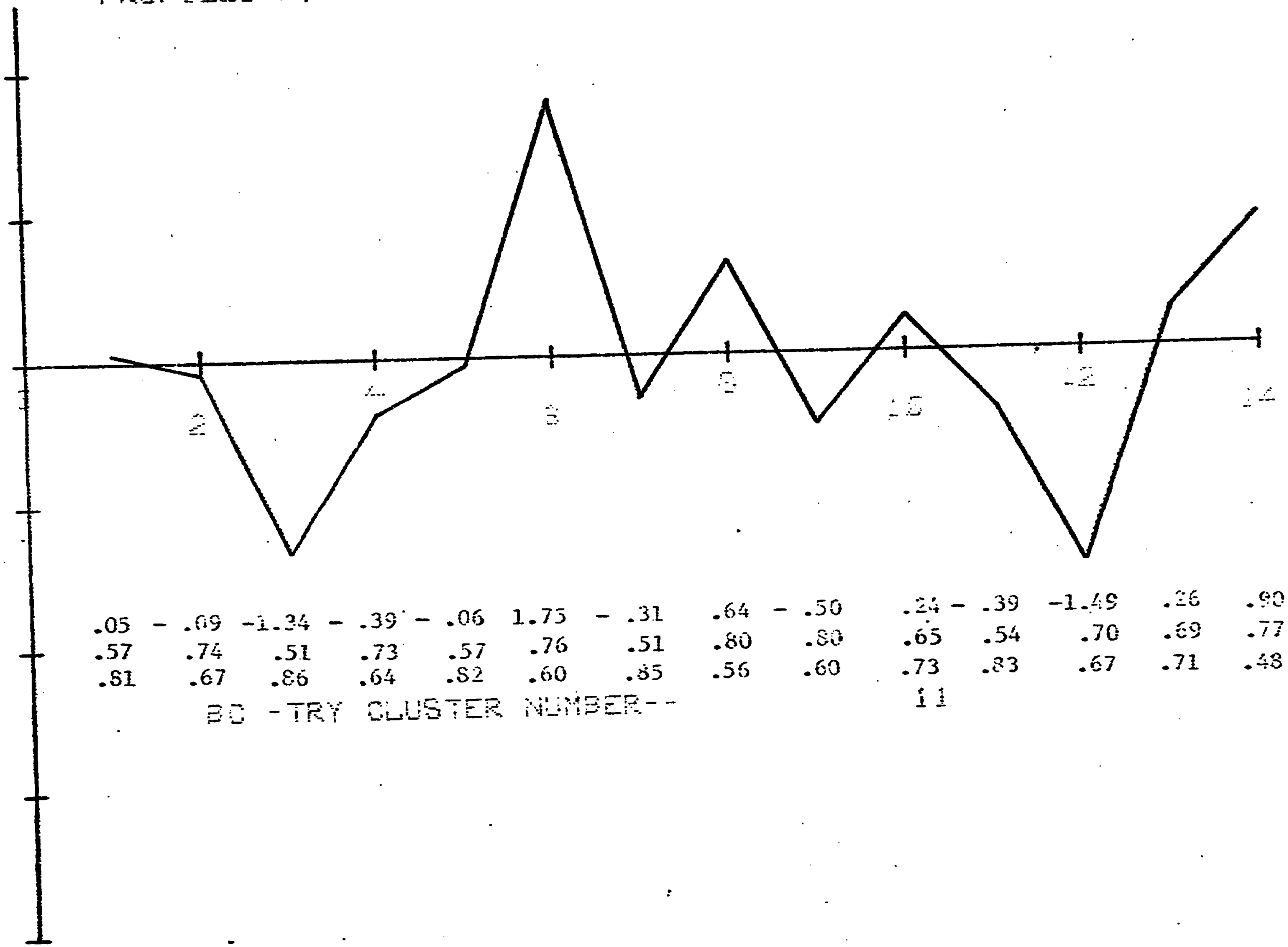
PROFILES BY OVERALL DIMENSION SCORES



.05	-.69	-1.34	-.39	-.06	1.75	-.31	.64	-.50	.24	-.39	-1.49	.26	.90
.57	.74	.51	.73	.57	.76	.51	.80	.80	.65	.54	.70	.69	.77
.81	.67	.86	.64	.82	.60	.85	.56	.60	.73	.83	.67	.71	.48

BC -TRY CLUSTER NUMBER--

11

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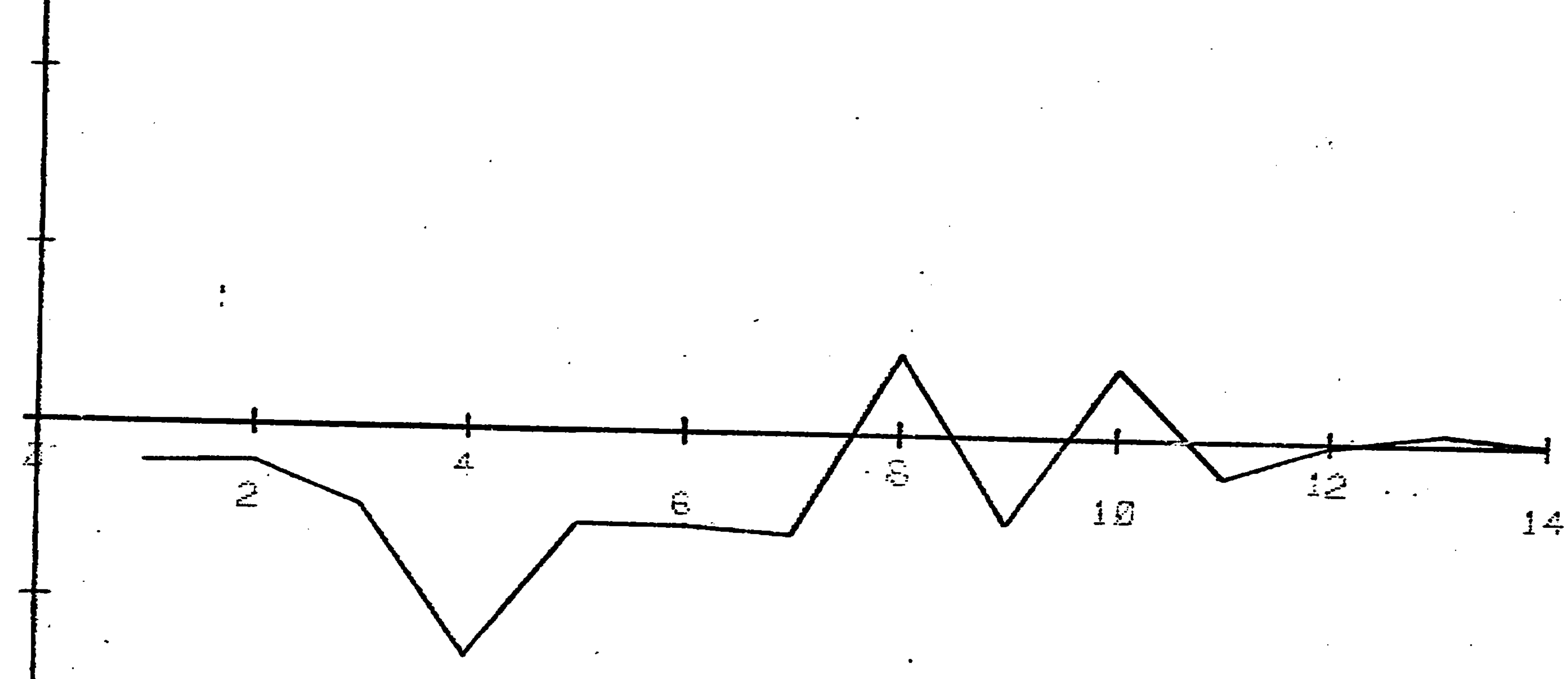
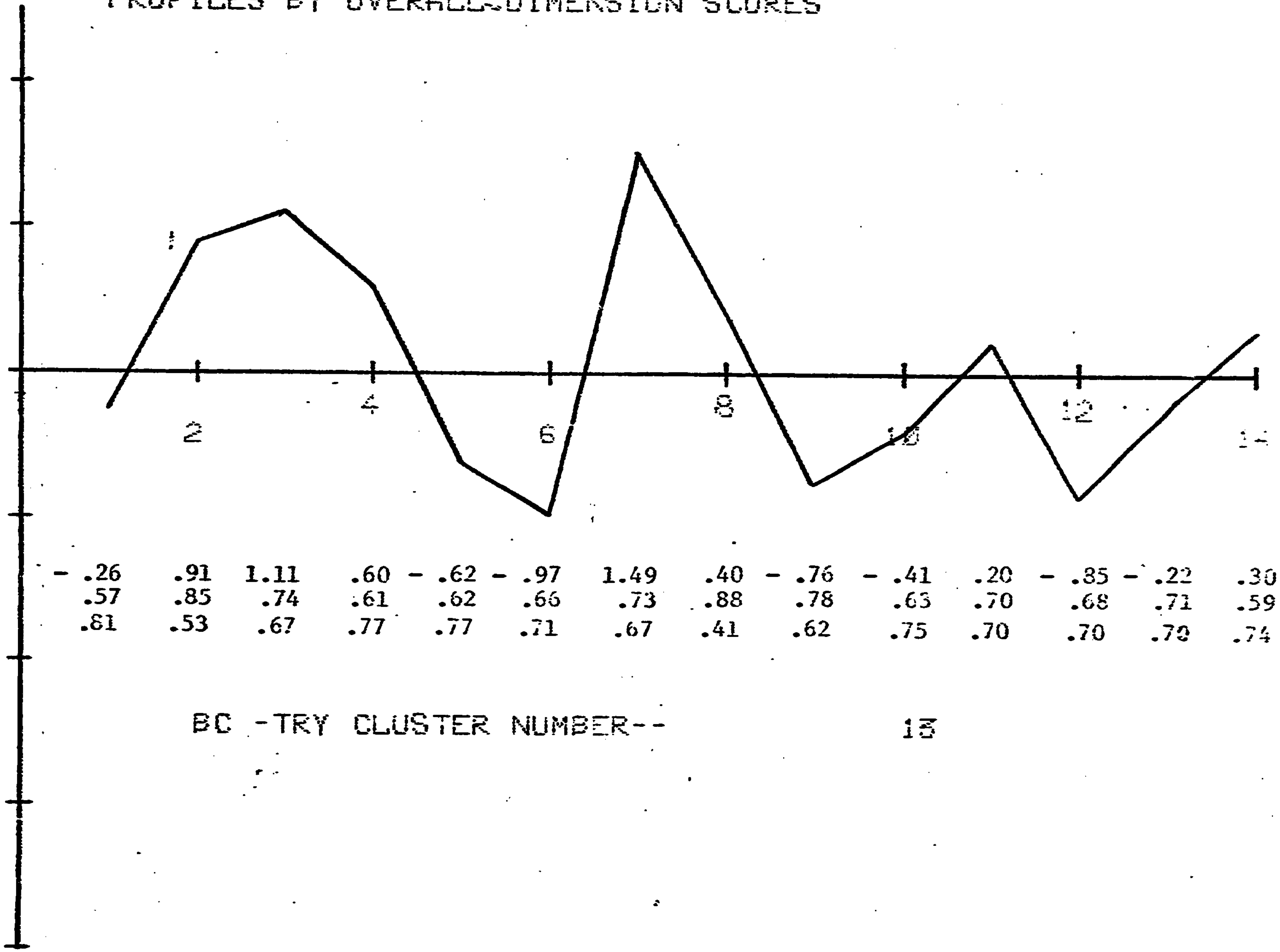
PROFILES BY OVERALL DIMENSION SCORES



-.23	-.22	-.46	-1.30	-.53	-.54	-.38	.46	-.50	.39	-.21	-.03	.06	-.01
.48	.33	.43	.56	.49	.31	.34	.43	.49	.59	.59	.64	.52	.56
.87	.94	.90	.81	.87	.94	.94	.89	.87	.79	.80	.74	.85	.77

BC -TRY CLUSTER NUMBER-- 12

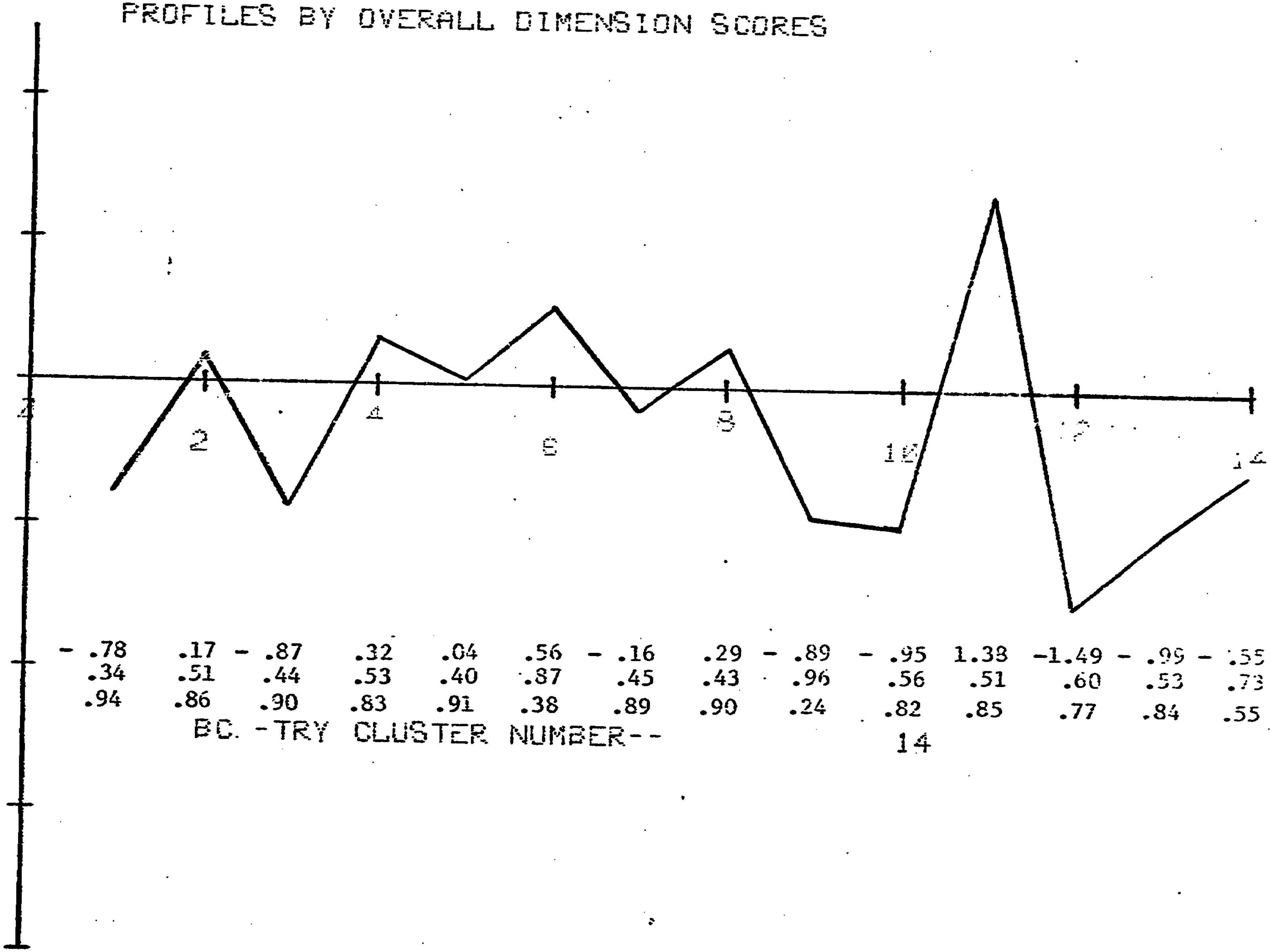
PROFILES BY OVERALL-DIMENSION SCORES



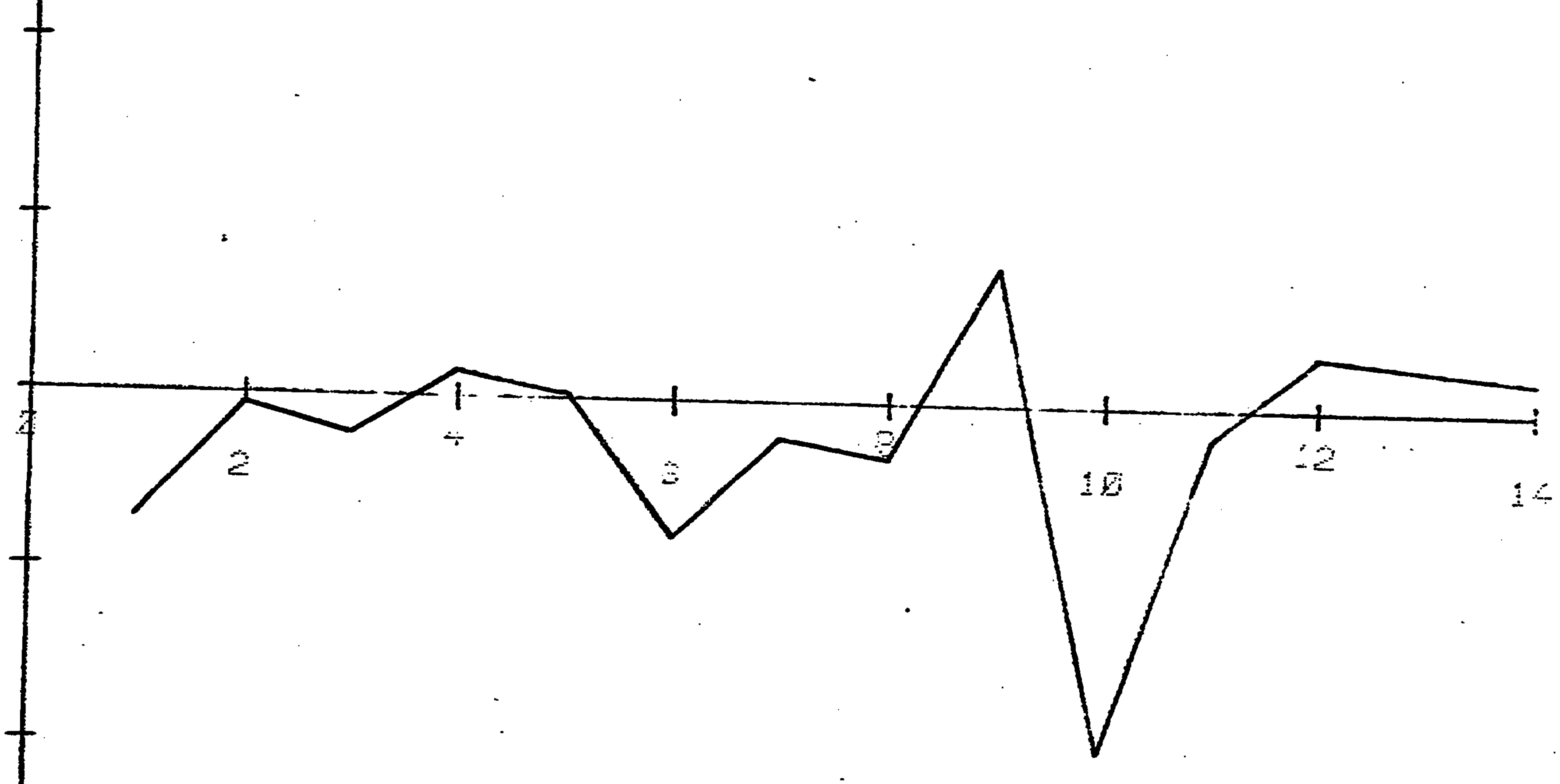
-.26	.91	1.11	.60	-.62	-.97	1.49	.40	-.76	-.41	.20	-.85	-.22	.30
.57	.85	.74	.61	.62	.66	.73	.88	.78	.63	.70	.68	.71	.59
.81	.53	.67	.77	.77	.71	.67	.41	.62	.75	.70	.70	.70	.74

BC -TRY CLUSTER NUMBER-- 13

PROFILES BY OVERALL DIMENSION SCORES



PROFILES BY OVERALL DIMENSION SCORES



BC -TRY CLUSTER NUMBER--

15

-.71	-.05	-.21	.15	.02	-.78	-.20	-.31	.77	-1.98	-.17	.31	.24	.19
.49	.66	.67	.62	.73	.53	.55	.64	.76	.76	.62	.68	.49	.62
.86	.75	.74	.76	.70	.83	.83	.75	.64	.62	.77	.79	.86	.71

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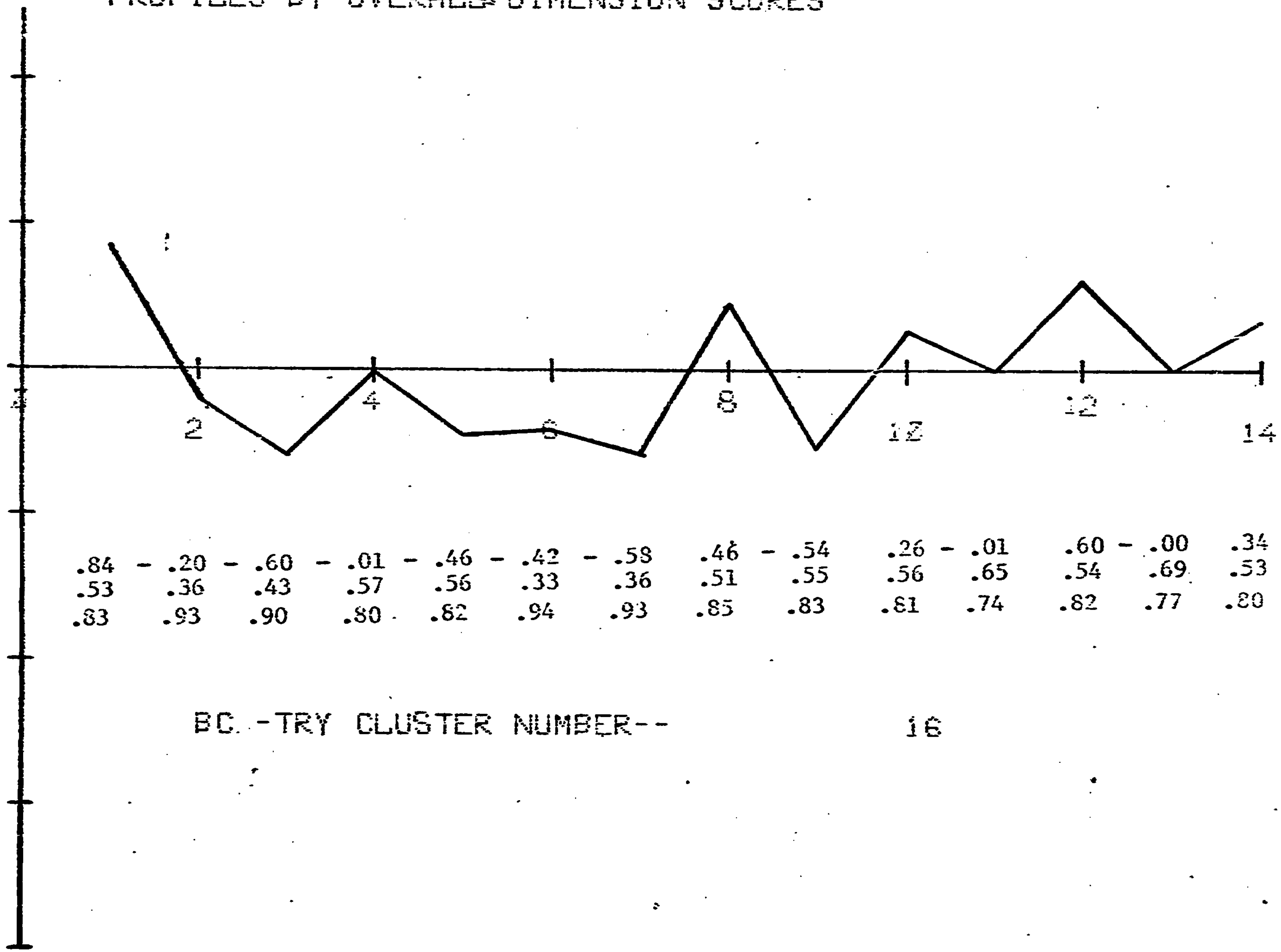
PROFILES BY OVERALL DIMENSION SCORES



.84	.20	.60	.01	.46	.42	.58	.46	.54	.26	.01	.60	.00	.34
.53	.36	.43	.57	.56	.33	.36	.51	.55	.56	.65	.54	.69	.53
.83	.93	.90	.80	.82	.94	.93	.85	.83	.81	.74	.82	.77	.80

BC.-TRY CLUSTER NUMBER-- 16

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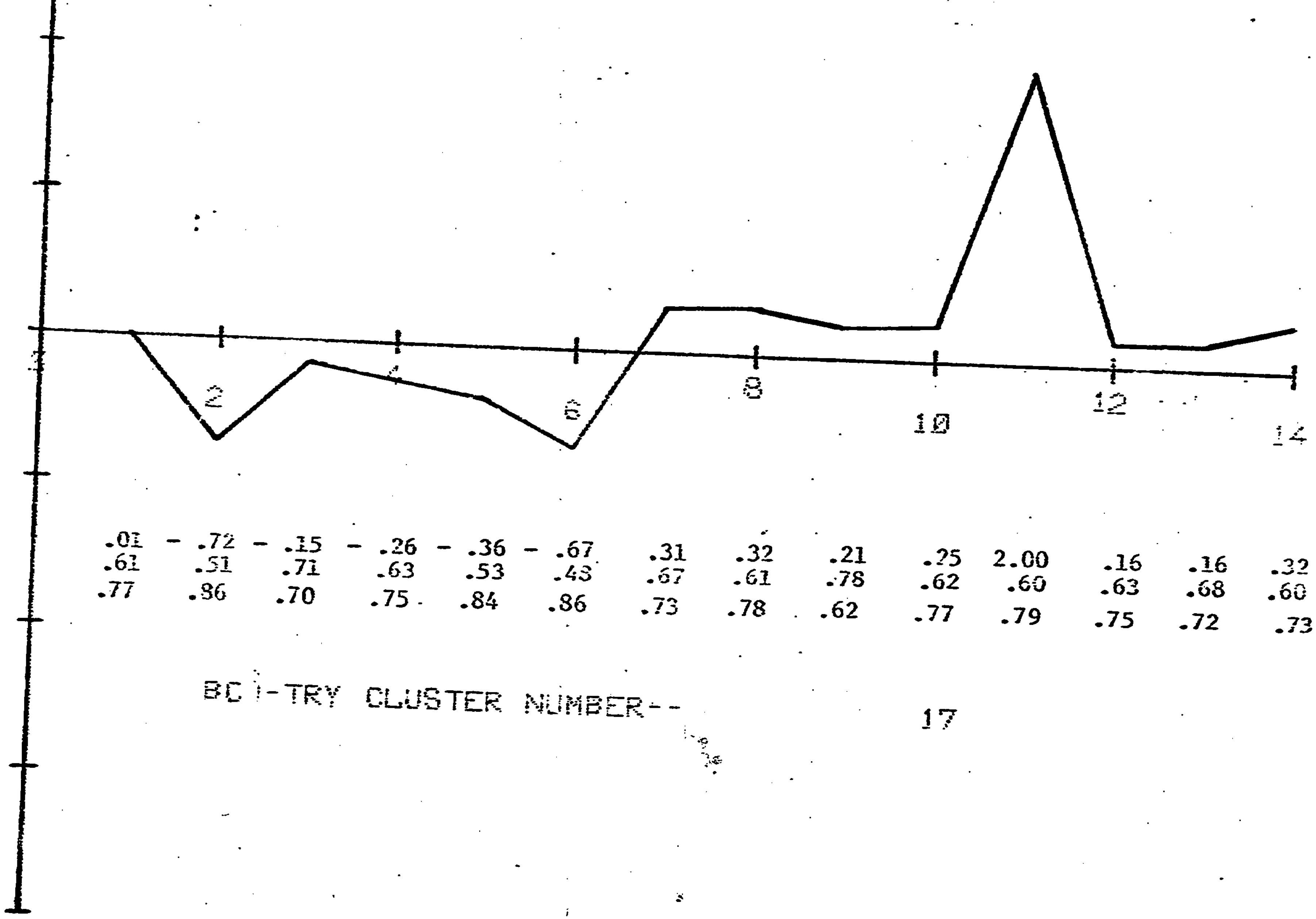
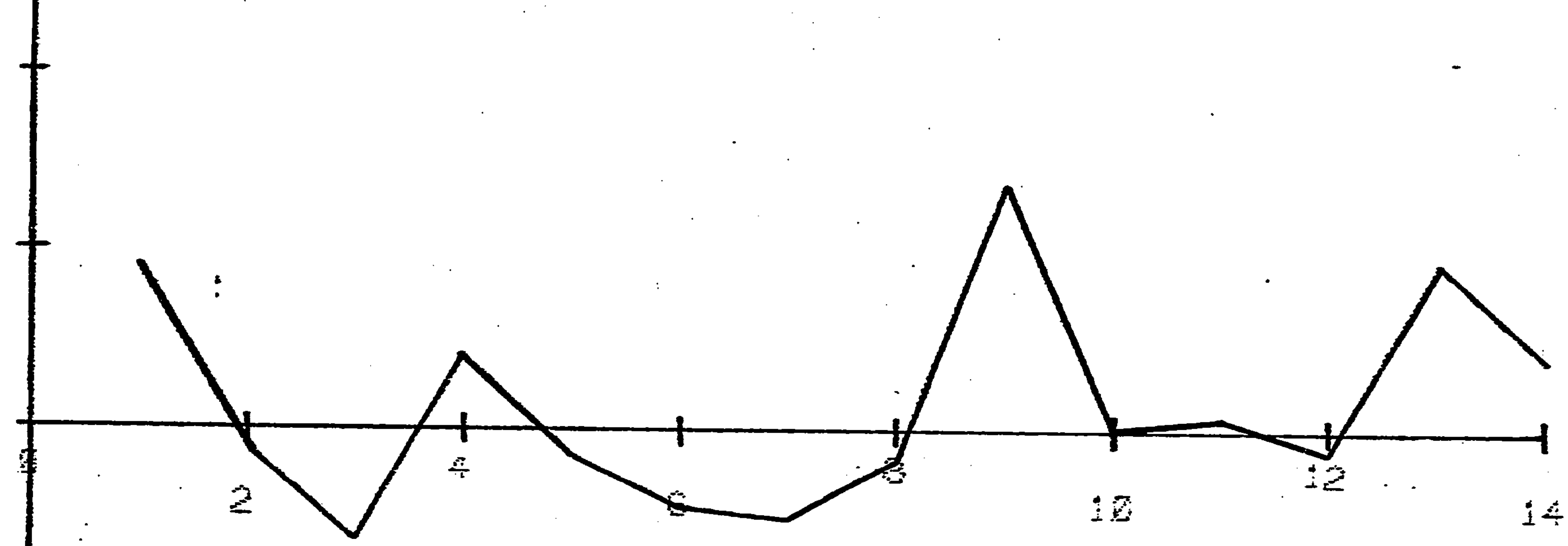
PROFILES BY OVERALL DIMENSION SCORES



PROFILES BY OVERALL DIMENSION SCORES



.90	-.10	-.62	.42	-.15	-.43	-.51	-.17	1.39	.00	.06	-.12	.94	.40
.68	.60	.69	.70	.73	.50	.55	.70	.77	.63	.75	.70	.79	.74
.71	.80	.72	.67	.67	.85	.82	.69	.63	.75	.64	.68	.60	.54

BC -TRY CLUSTER NUMBER-- 18

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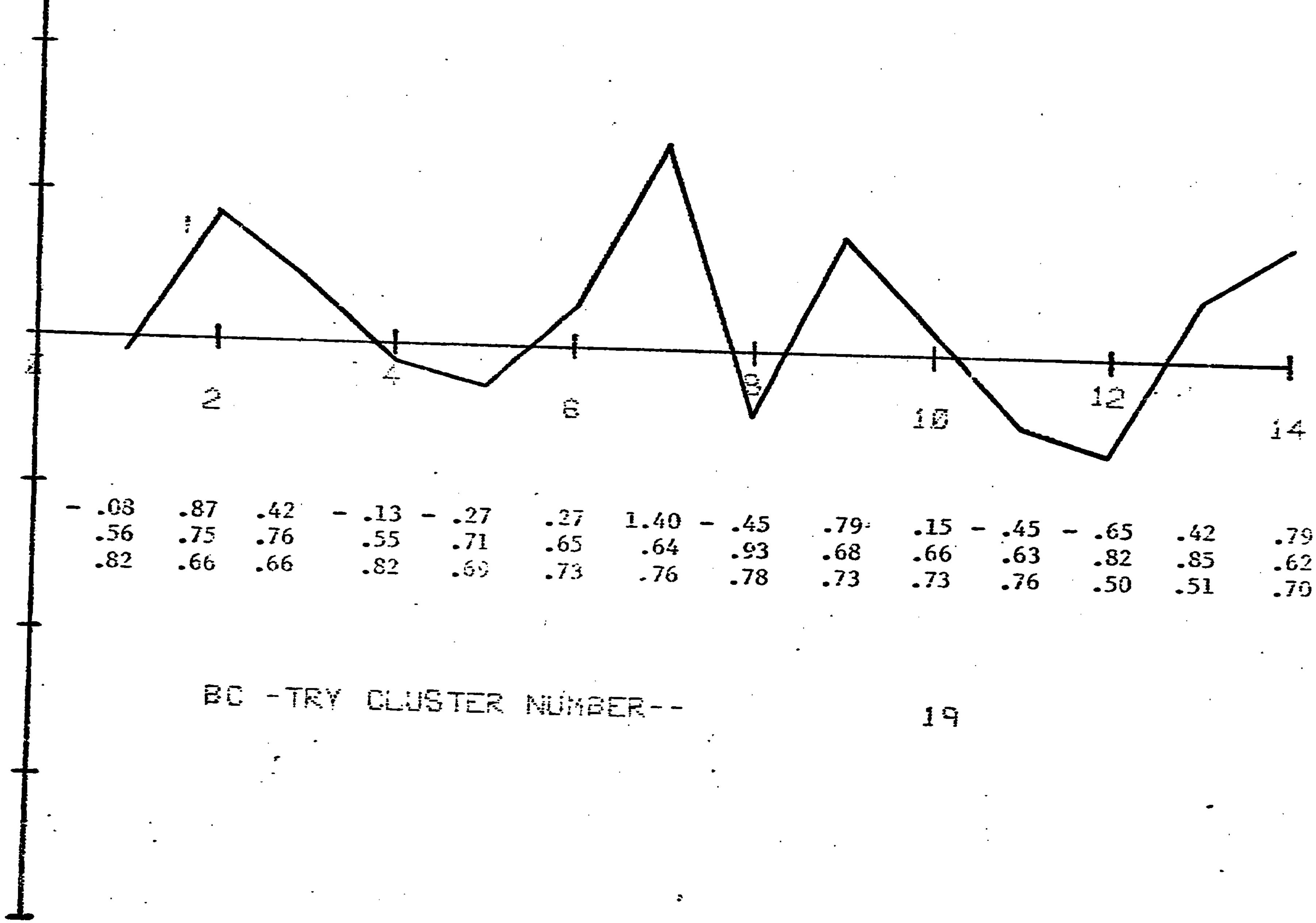
PROFILES BY OVERALL DIMENSION SCORES



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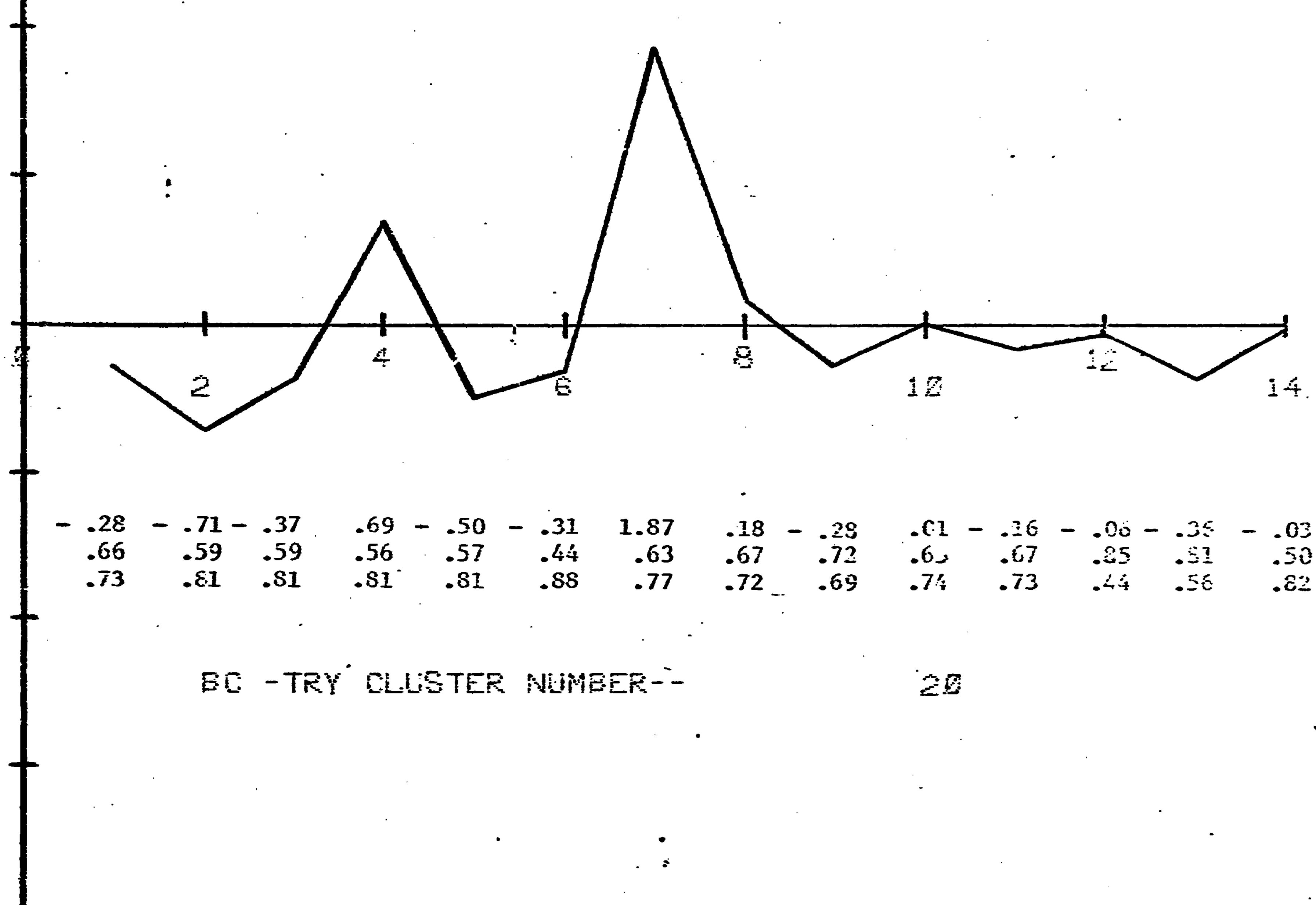
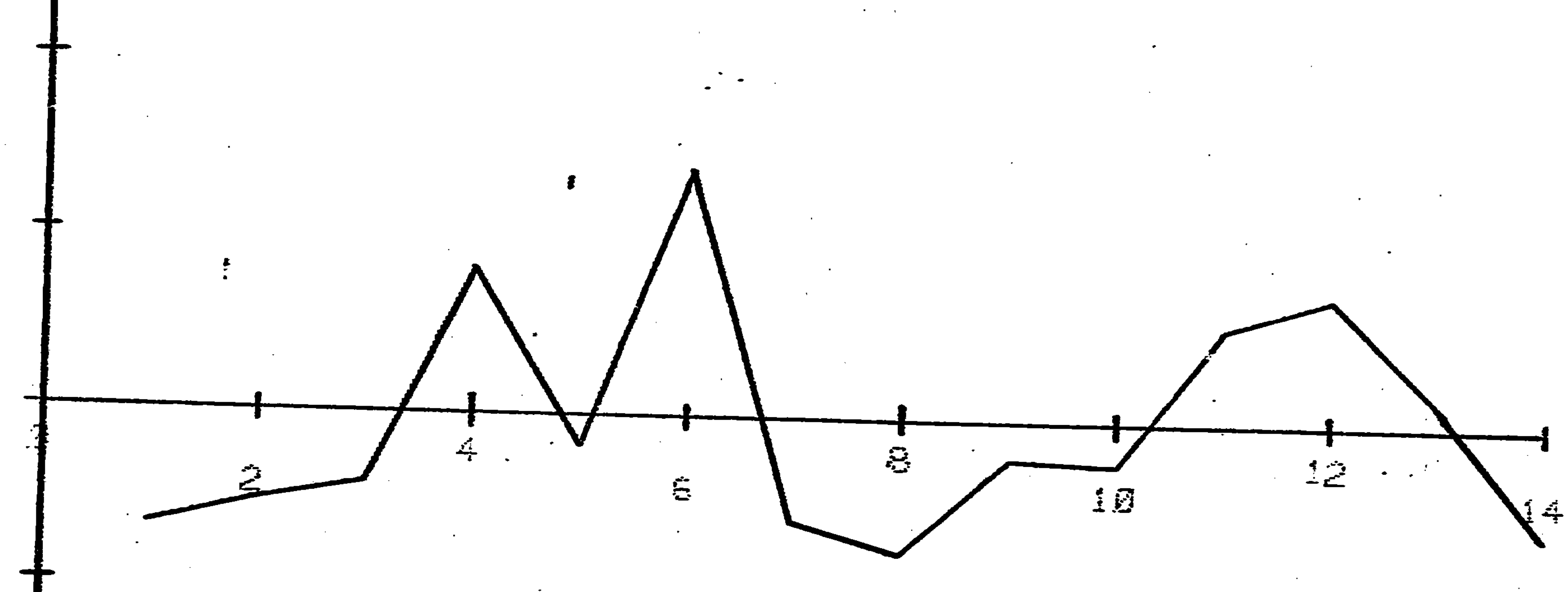
PROFILES BY OVERALL DIMENSION SCORES



-.28	-.71	-.37	.69	-.50	-.31	1.87	.18	-.28	.01	-.16	-.06	-.35	-.03
.66	.59	.59	.56	.57	.44	.63	.67	.72	.6[illegible]	.67	.25	.51	.50
.73	.81	.81	.81	.81	.88	.77	.72	.69	.74	.73	.44	.56	.82

BC -TRY CLUSTER NUMBER-- 2Ø

PROFILES BY OVERALL DIMENSION SCORES



-.66	-.52	-.40	-.83	-.17	1.38	-.59	-.77	-.21	-.24	.54	.73	.12	-.60
.35	.61	.56	.44	.53	.64	.41	.61	.60	.65	.63	.71	.48	.72
.93	.79	.83	.89	.84	.74	.91	.77	.79	.74	.76	.67	.87	.56

BC -TRY CLUSTER NUMBER-- 21

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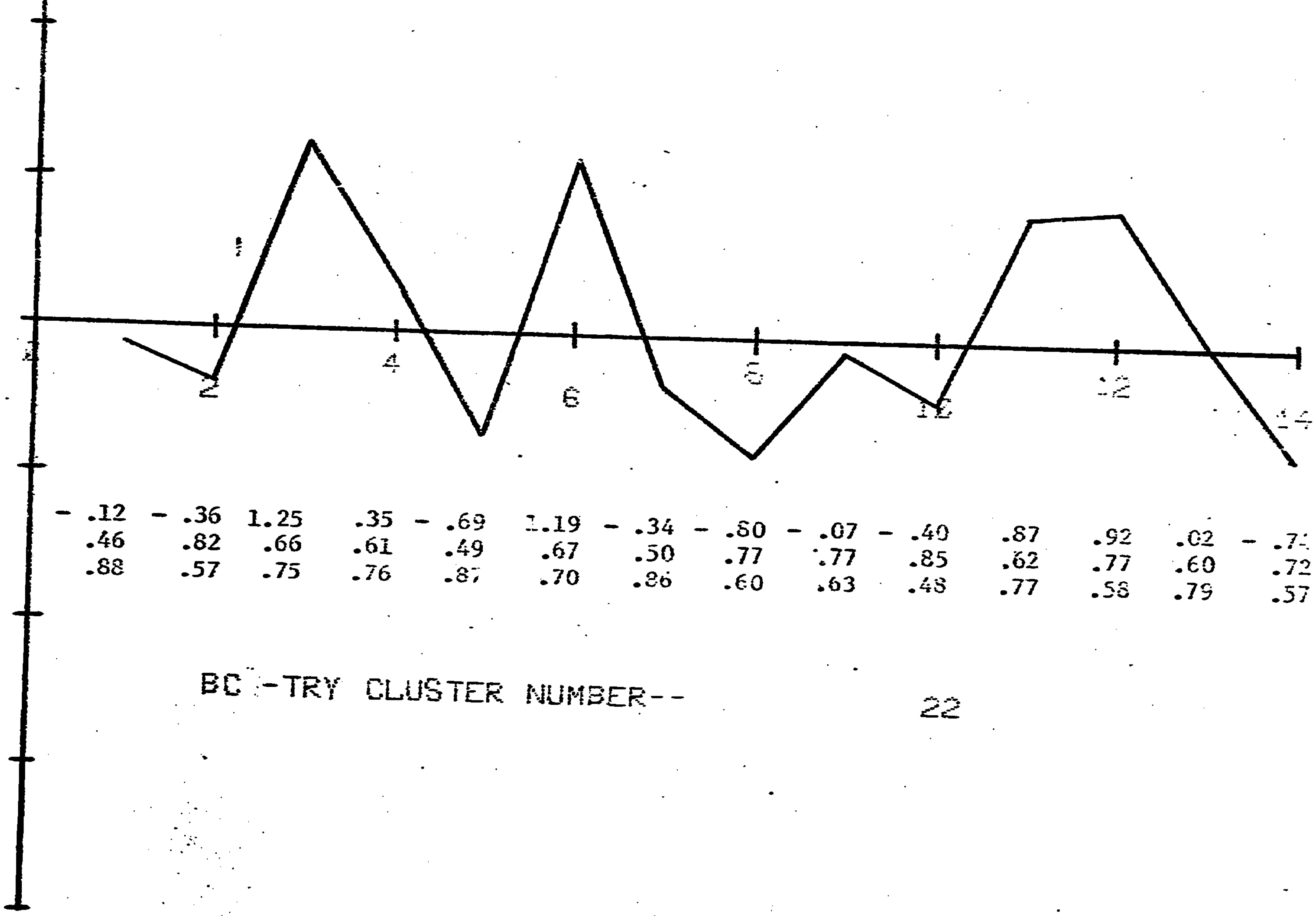
PROFILES BY OVERALL DIMENSION SCORES



-.12	-.36	1.25	.35	-.69	1.19	-.34	-.80	-.07	-.40	.87	.92	.02	-.7[illegible]
.46	.82	.66	.61	.49	.67	.50	.77	.77	.85	.62	.77	.60	.72
.88	.57	.75	.76	.87	.70	.86	.60	.63	.48	.77	.58	.79	.57

BC -TRY CLUSTER NUMBER-- 22

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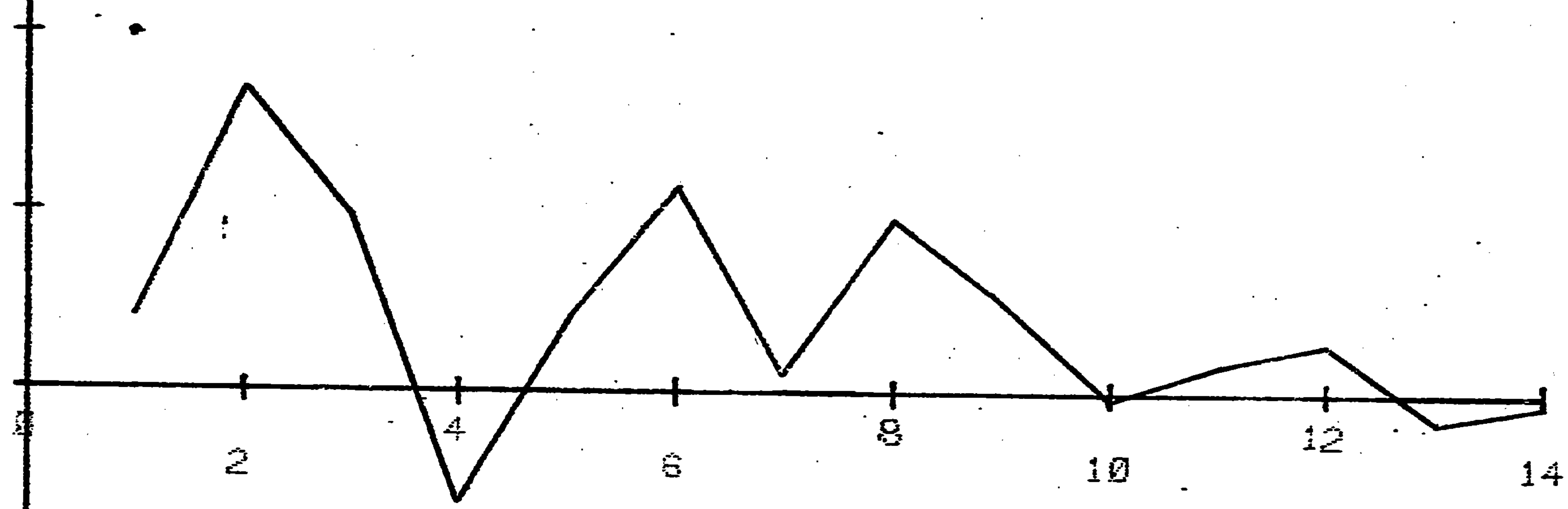
PROFILES BY OVERALL-DIMENSION SCORES



.41	1.70	.97	-.64	.40	1.15	.09	.97	.51	-.04	.14	.27	-.16	-.05
.61	.83	.73	.76	.84	.69	.64	.70	.80	.69	.64	.66	.70	.79
.77	.56	.68	.59	.51	.69	.71	.69	.59	.70	.75	.71	.70	.43

BC-TRY CLUSTER NUMBER-- 23

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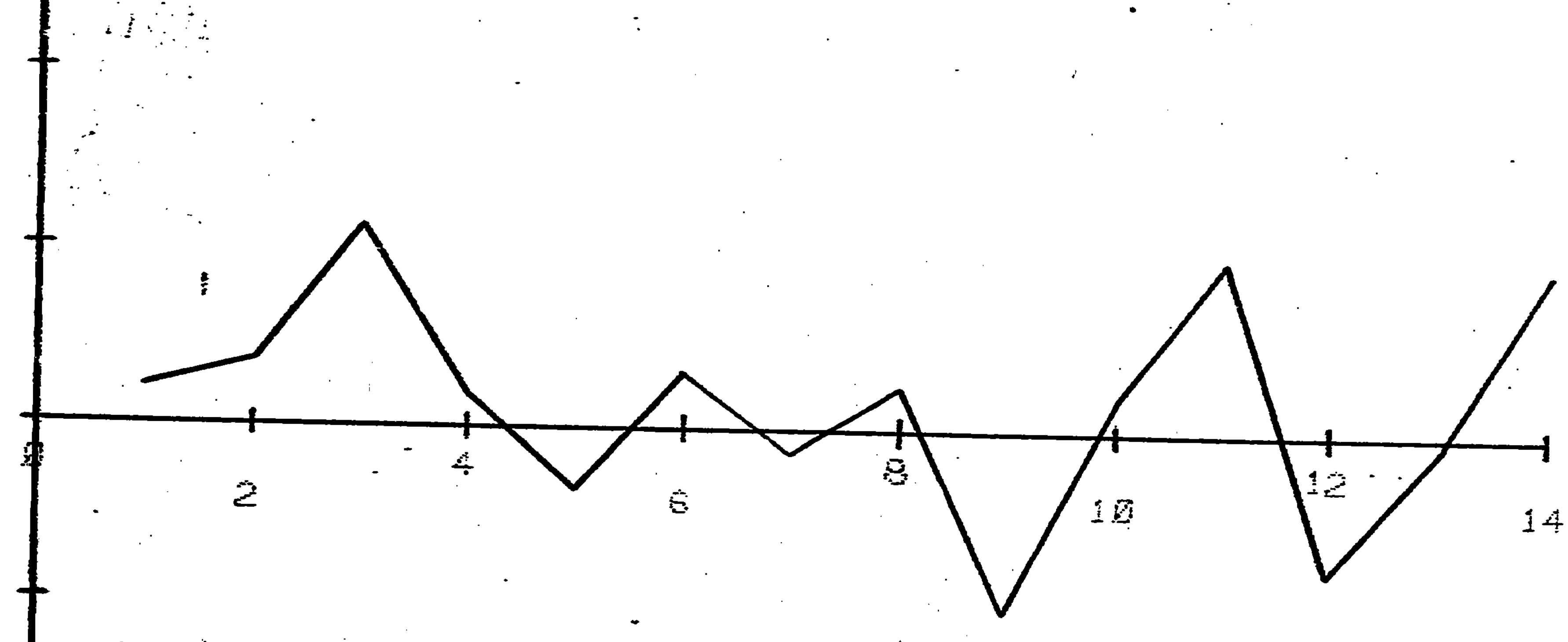
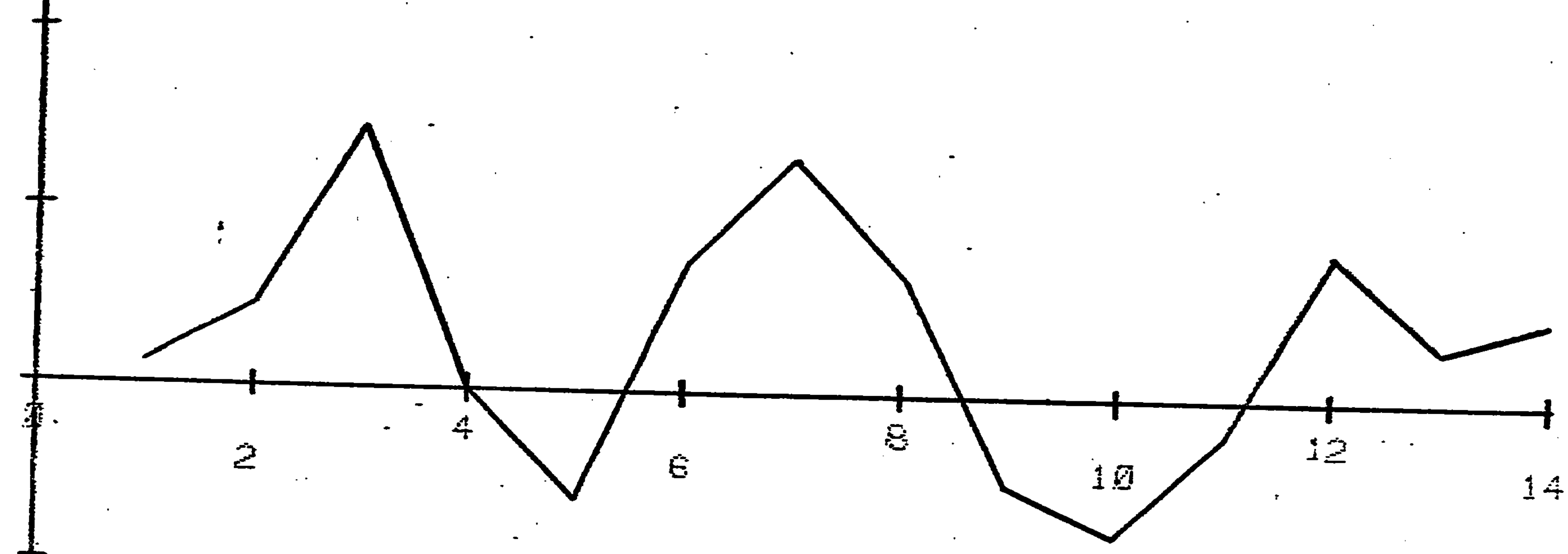
PROFILES BY OVERALL DIMENSION SCORES



.20	.36	1.13	.19	- .35	.31	- .14	.24	-1.02	.17	.99	- .78	- .07	.94
.55	.76	.59	.59	.50	.67	.58	.67	.70	.65	.66	.71	.61	.62
.82	.64	.80	.78	.86	.71	.81	.72	.70	.74	.74	.66	.78	.71

BC -TRY CLUSTER NUMBER-- 24

PROFILES BY OVERALL DIMENSION SCORES



.12	.46	1.47	.00	- .61	.71	1.33	.68	- .50	- .77	- .21	.84	.30	.47
.50	.62	.61	.70	.70	.61	.85	.85	.77	.82	.72	.64	.59	.64
.86	.78	.79	.68	.70	.76	.49	.47	.63	.53	.67	.74	.80	.68

BC.-TRY CLUSTER NUMBER-- 25

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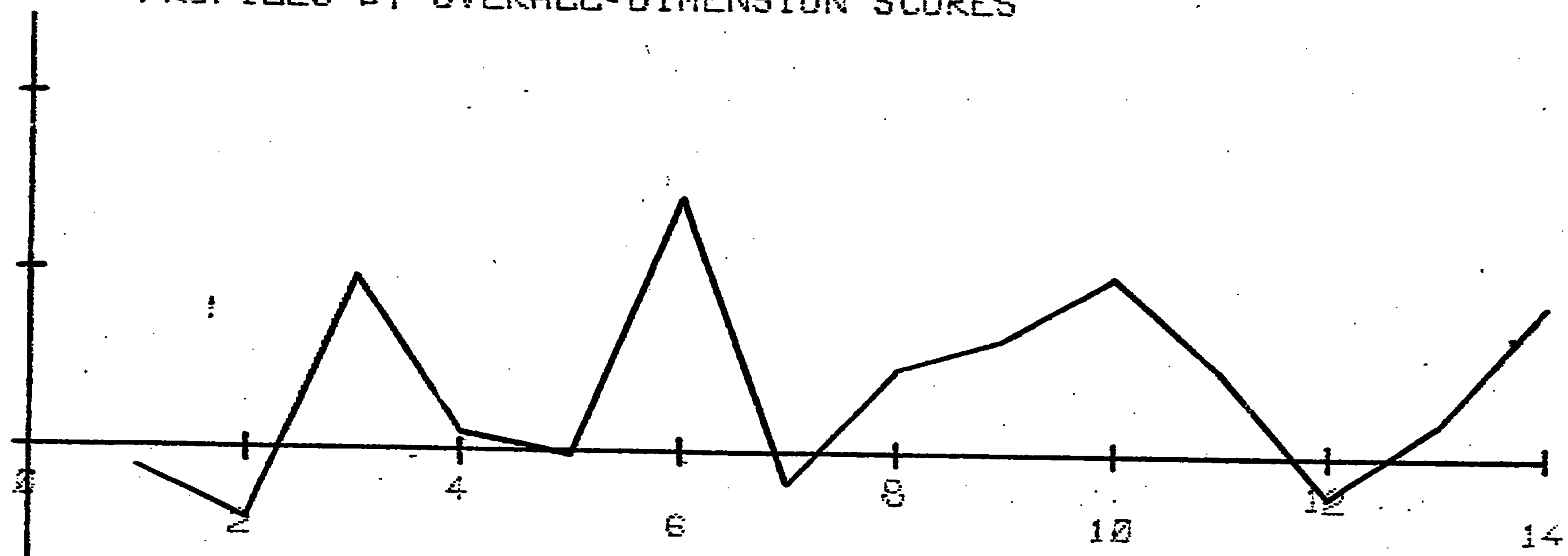
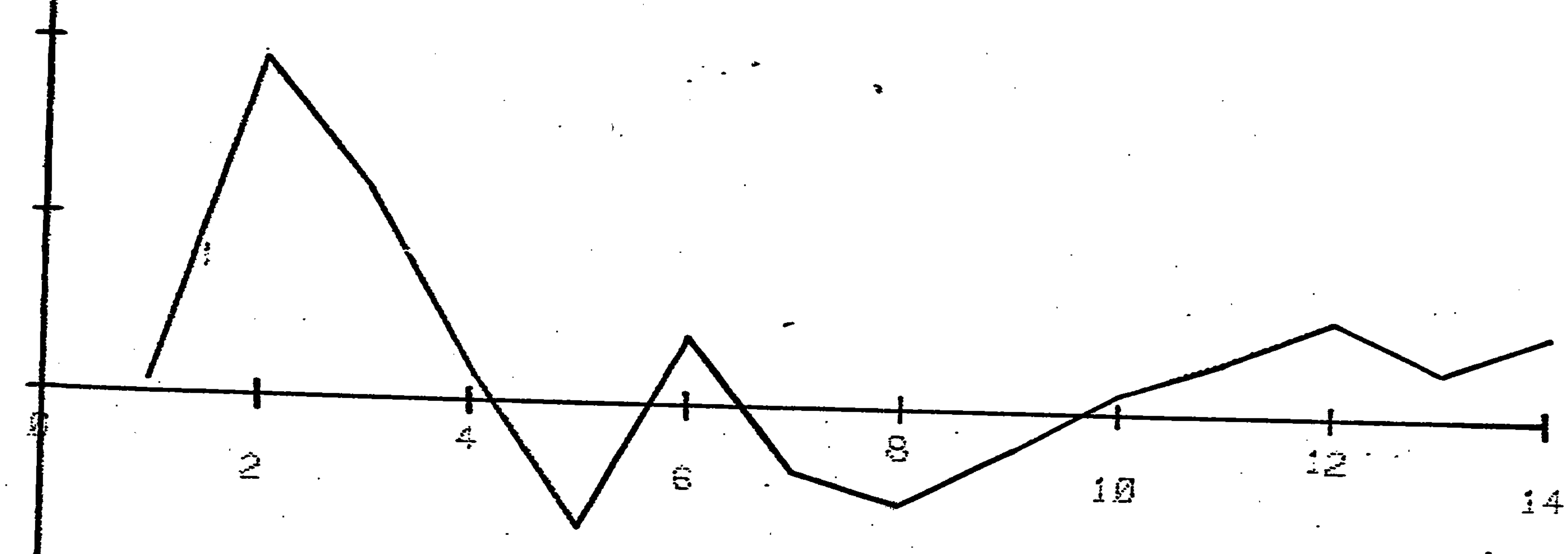
PROFILES BY OVERALL-DIMENSION SCORES



-.11	-.40	.99	.10	-.03	1.43	-.19	.47	.65	1.00	.46	-.23	.17	.85
.54	.75	.69	.56	.52	.56	.74	.70	.79	.62	.65	.65	.56	.72
.83	.66	.72	.81	.85	.81	.66	.69	.61	.77	.75	.72	.82	.57

BC -TRY CLUSTER NUMBER-- 26

PROFILES BY OVERALL DIMENSION SCORES



.08	1.90	1.20	.17	-.70	.38	-.36	-.55	.23	.10	.32	.56	.27	.48
.41	.73	.62	.77	.59	.74	.67	.78	.85	.60	.63	.78	.68	.68
.91	.69	.78	.59	.80	.62	.73	.59	.52	.79	.77	.57	.72	.63

BC -TRY CLUSTER NUMBER-- 27

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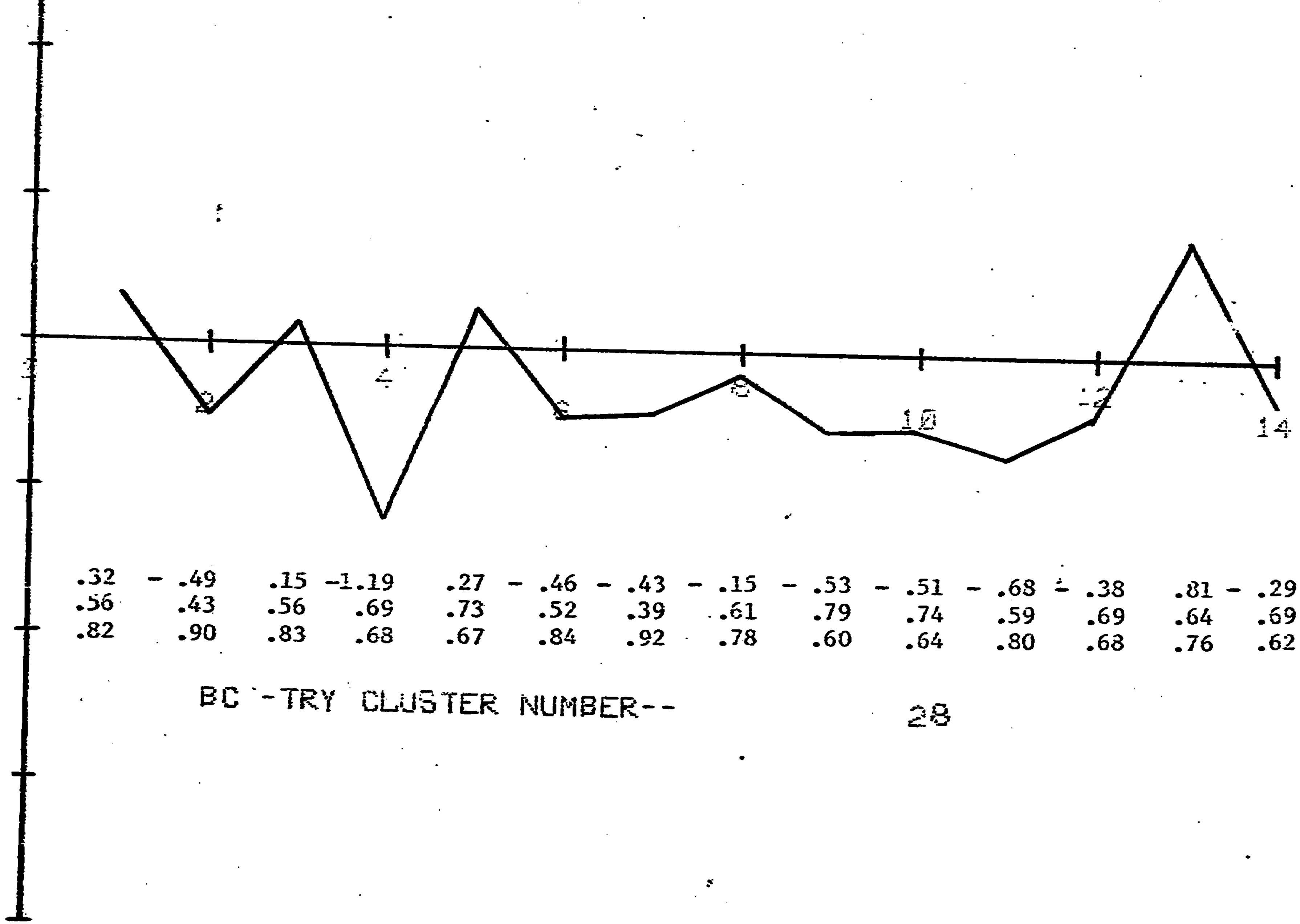
PROFILES BY OVERALL DIMENSION SCORES



BC -TRY CLUSTER NUMBER-- 28

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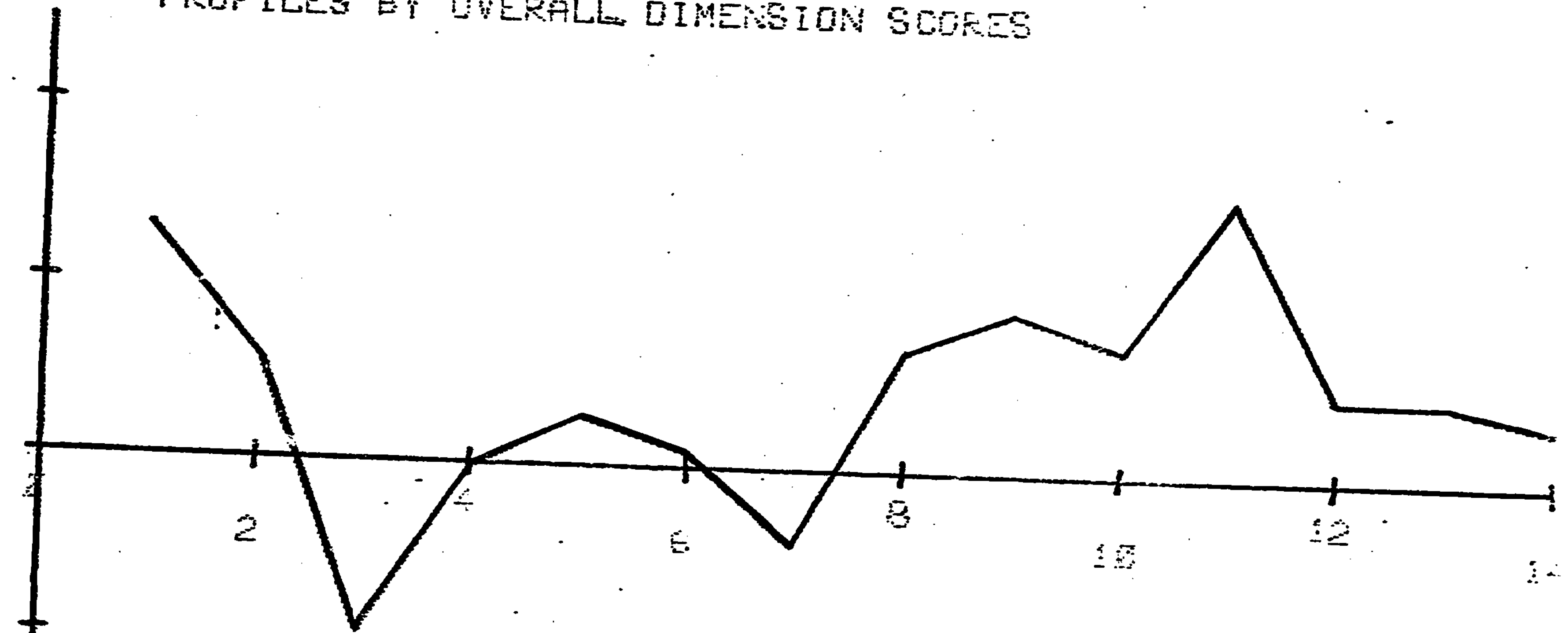
PROFILES BY OVERALL DIMENSION SCORES



1.29	.59	-.98	-.02	.27	.09	-.44	.68	.90	.70	1.59	.46	.45	.33
.43	.72	.67	.67	.83	.61	.48	.67	.90	.58	.59	.75	.77	[illegible]
.90	.69	.74	.71	.53	.76	.87	.72	.42	.80	.80	.56	.62	.70

BCI-TRY CLUSTER NUMBER-- 29

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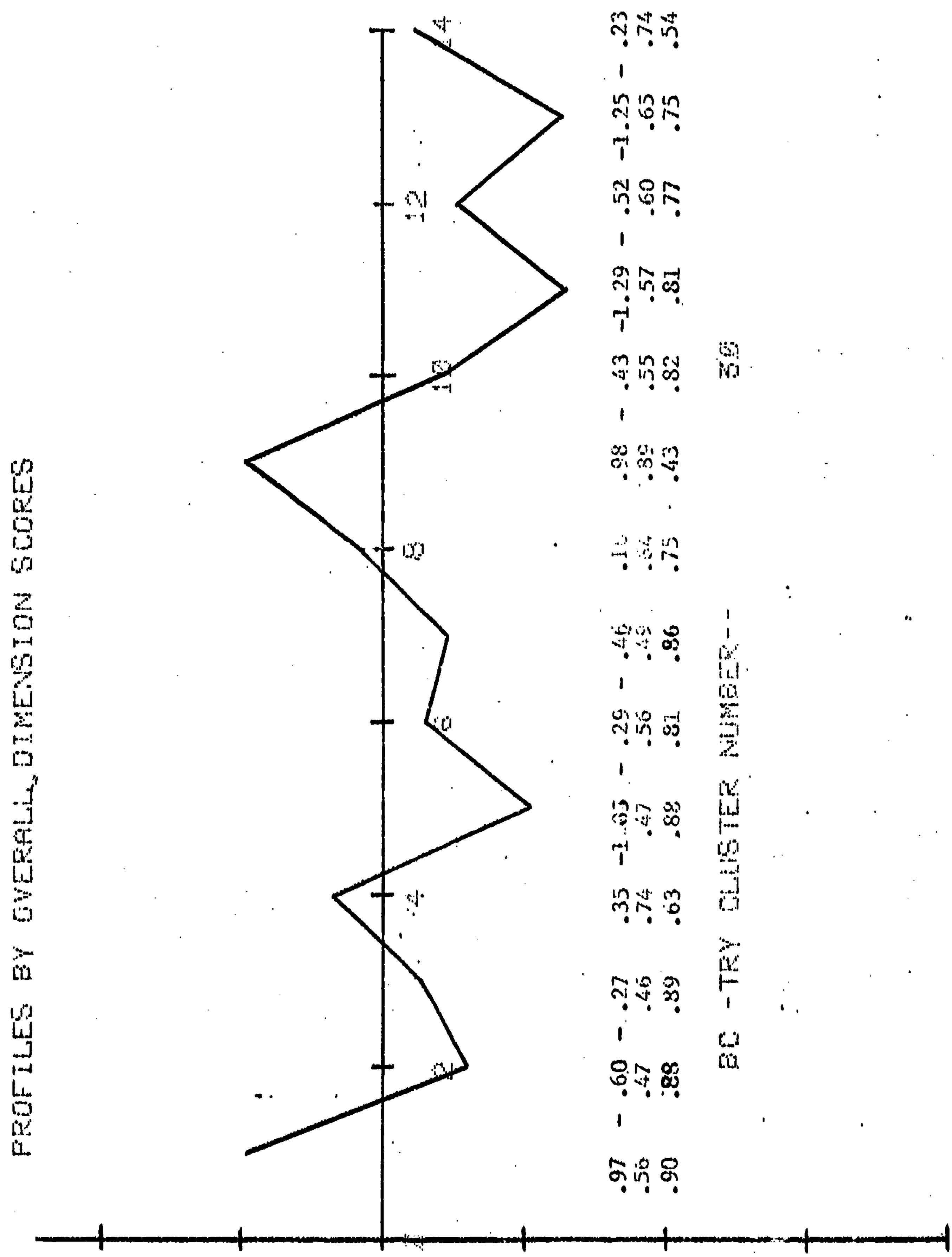

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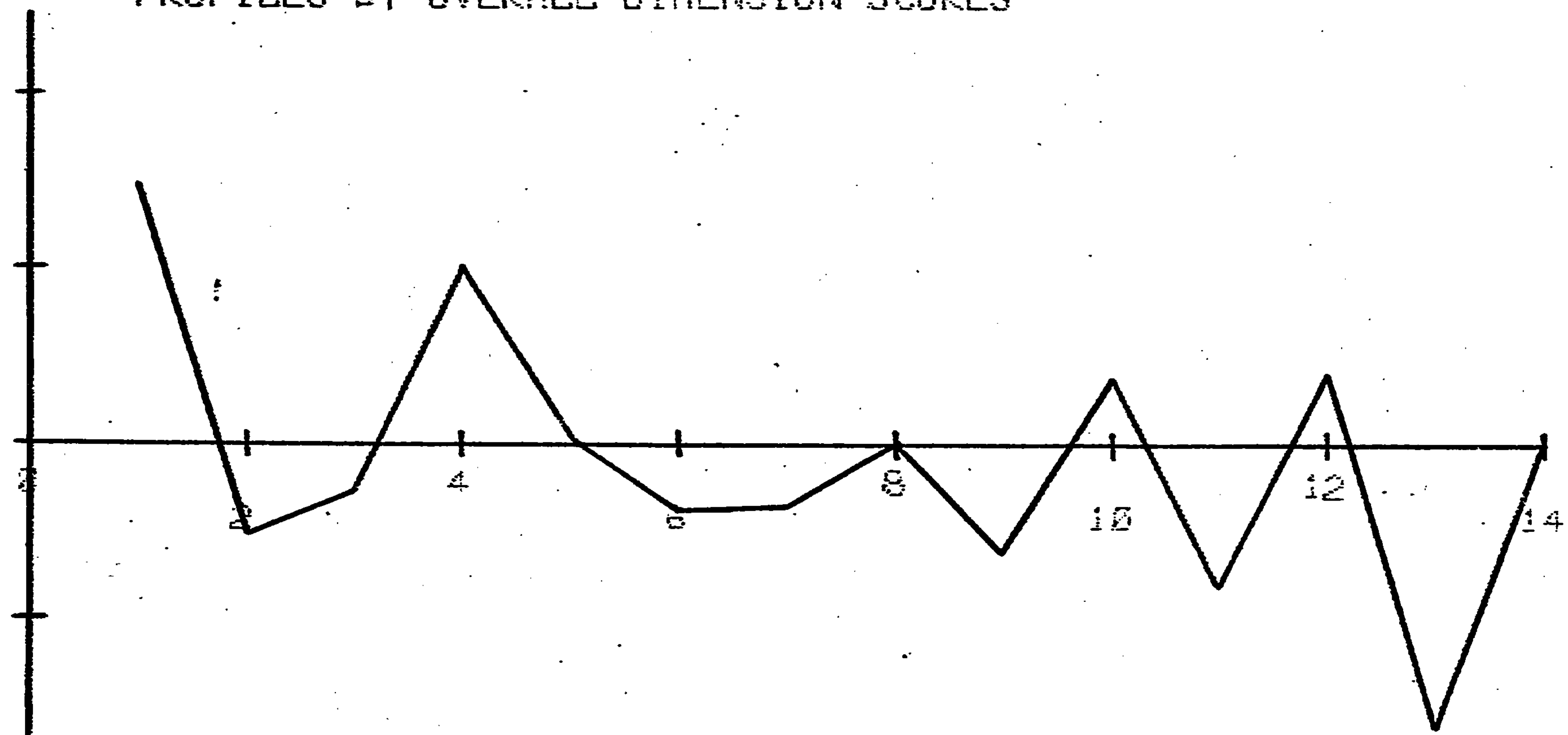
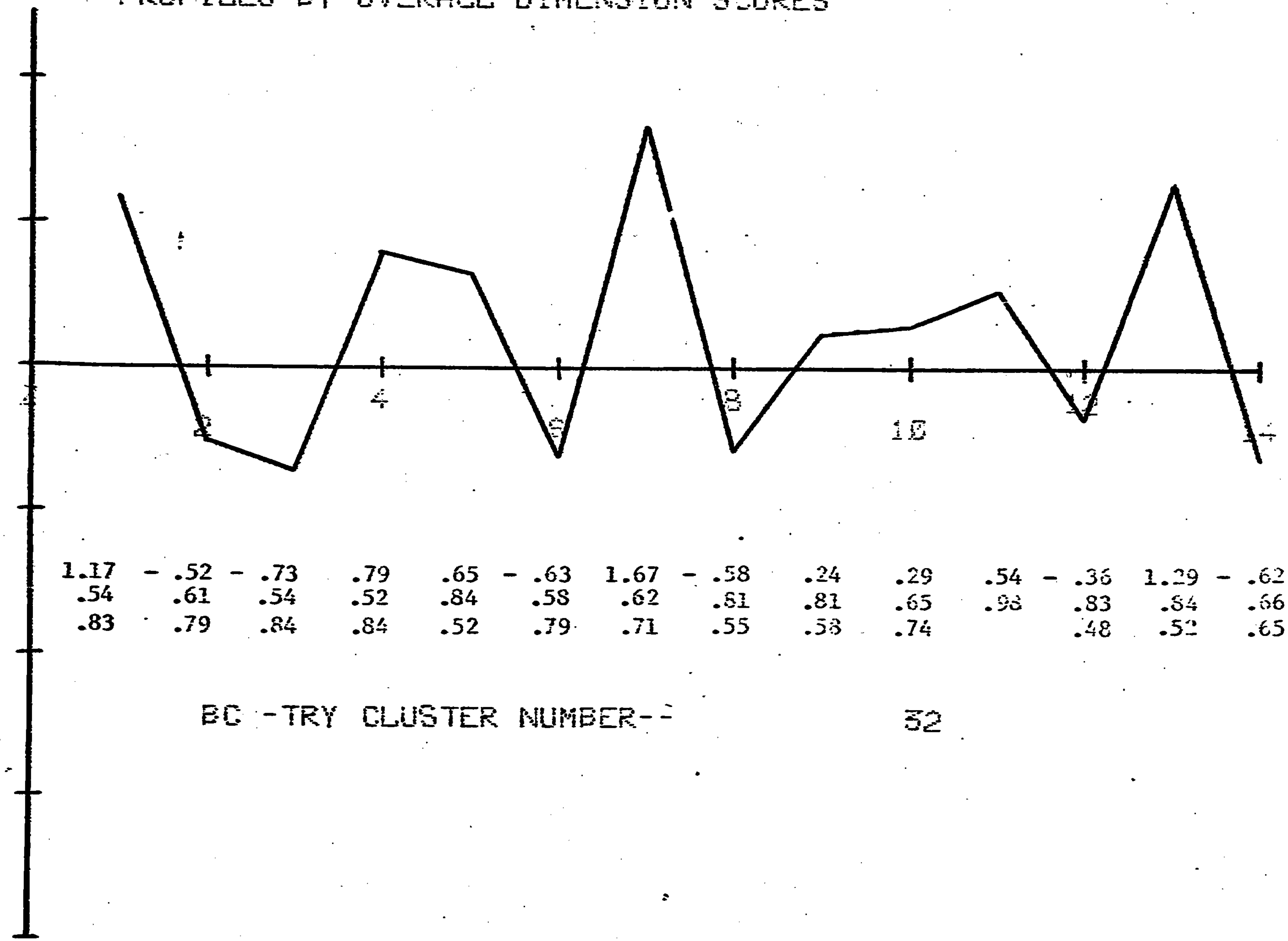
PROFILES BY OVERALL DIMENSION SCORES



1.48	-.52	-.27	1.01	.04	-.38	-.36	-.00	-.62	.38	-.81	.40	-1.61	.04
.55	.38	.43	.60	.30	.40	.61	.75	.69	.57	.69	.61	.80	.52
.82	.92	.90	.78	.57	.91	.78	.63	.72	.81	.71	.76	.59	.81

BC -TRY CLUSTER NUMBER-- 31

PROFILES BY OVERALL DIMENSION SCORES



1.17	-.52	-.73	.79	.65	-.63	1.67	-.58	.24	.29	.54	-.36	1.29	-.62
.54	.61	.54	.52	.84	.58	.62	.61	.81	.65	.98	.83	.84	.66
.83	.79	.84	.84	.52	.79	.71	.55	.58	.74		.48	.52	.65

BC -TRY CLUSTER NUMBER-- 32

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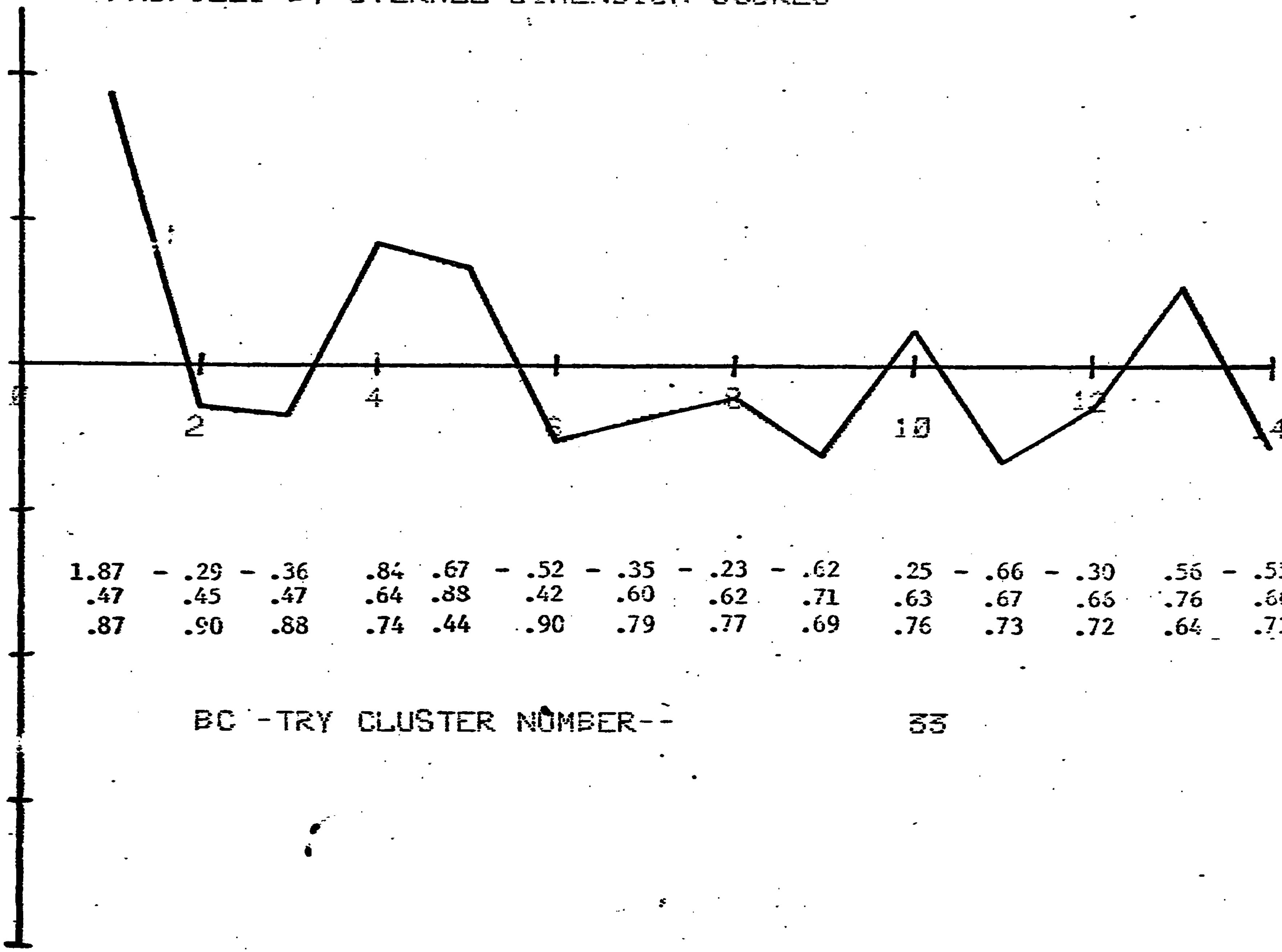
PROFILES BY OVERALL DIMENSION SCORES



1.87 - .29 - .36 .84 .67 - .52 - .35 - .23 - .62 .25 - .66 - .30 .56 - .55
.47 .45 .47 .64 .88 .42 .60 .62 .71 .63 .67 .66 .76 .60
.87 .90 .88 .74 .44 .90 .79 .77 .69 .76 .73 .72 .64 .73

BC -TRY CLUSTER NUMBER-- 33

Appendix C

Job Clusters Resulting from CODAP Program

Note : The three sets of values for each dimension (as shown for each cluster) represent the following:

1.	Top Value	Mean
2.	Middle Value	Standard Deviation
3.	Lower Value	Homogeneity Index

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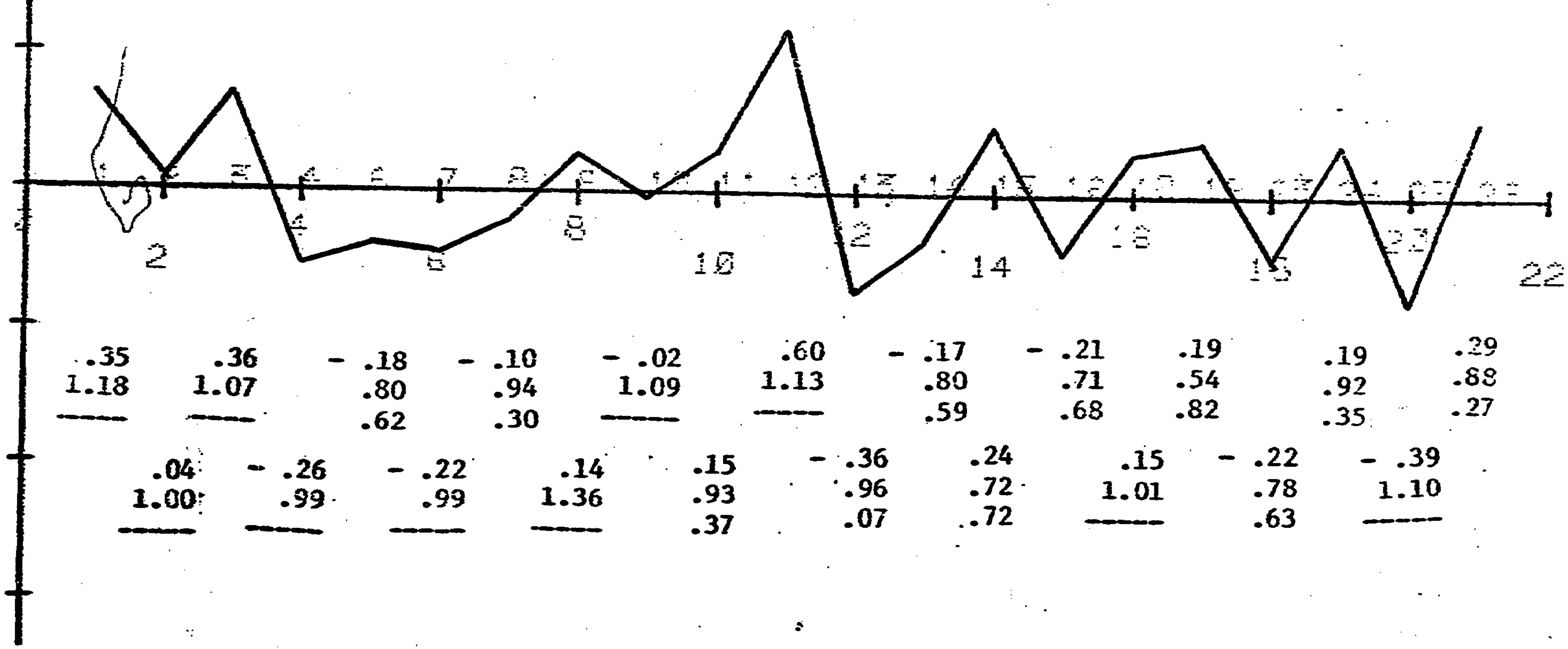
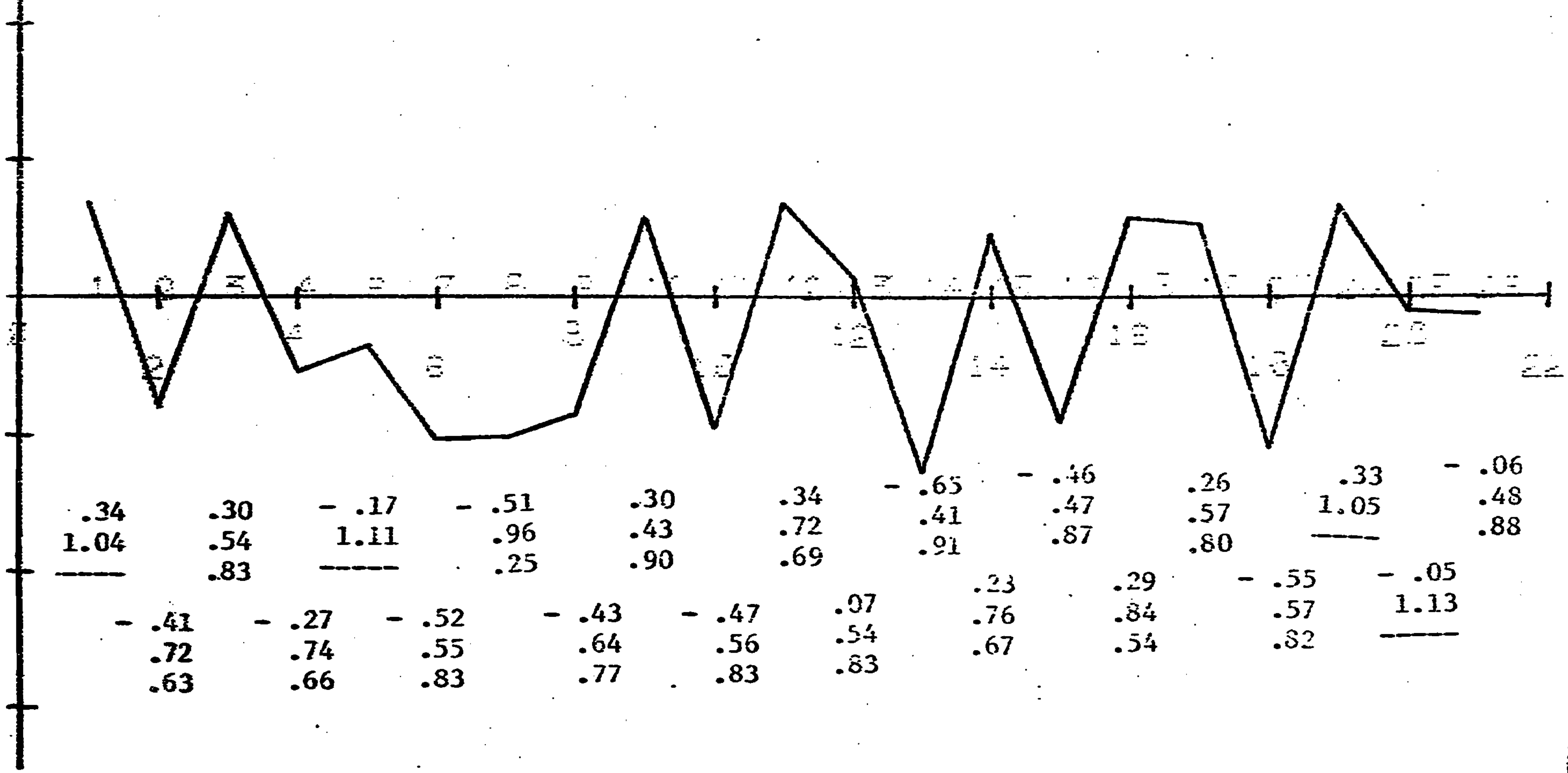
PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 1



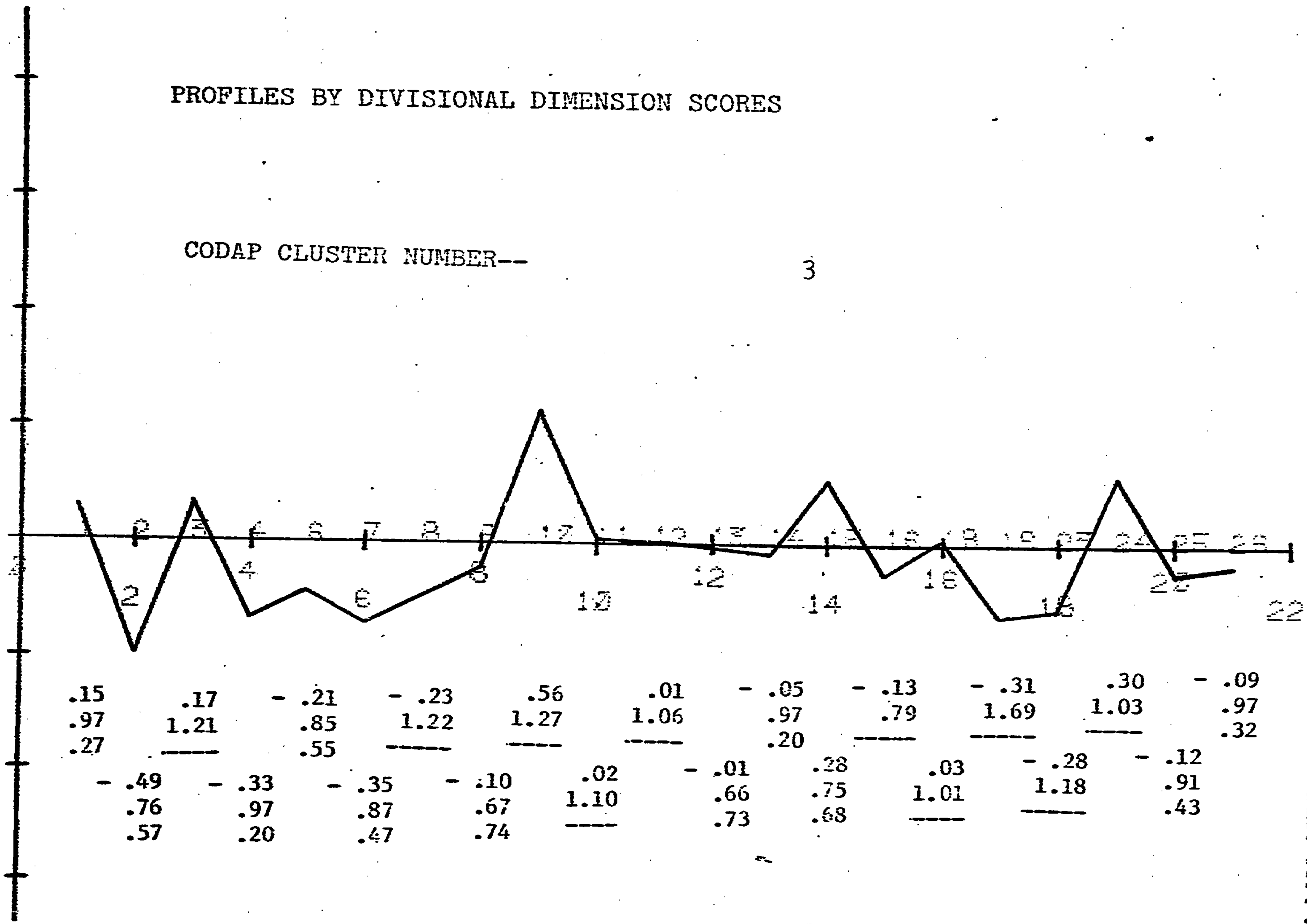
PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 2



PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 3



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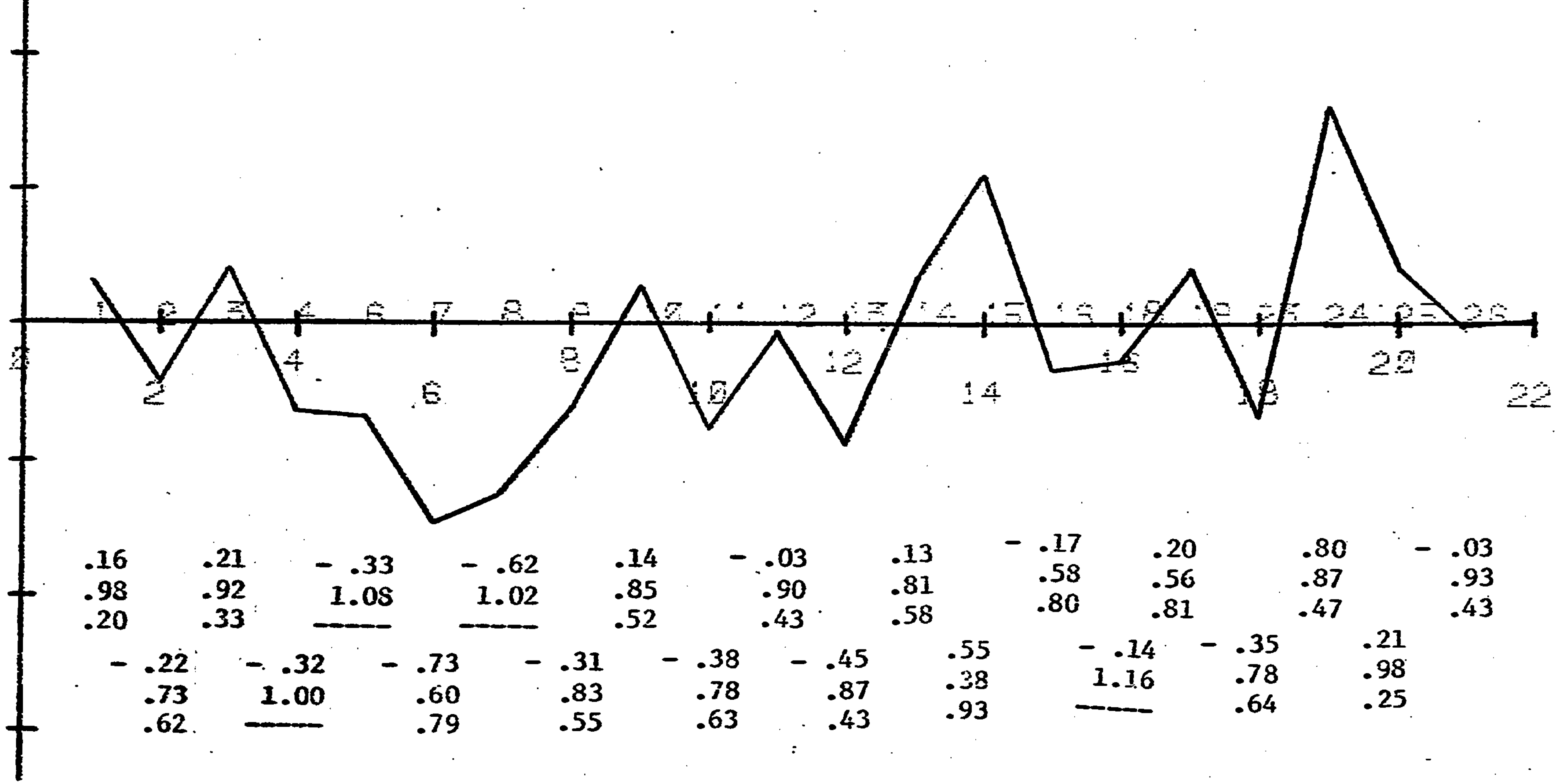
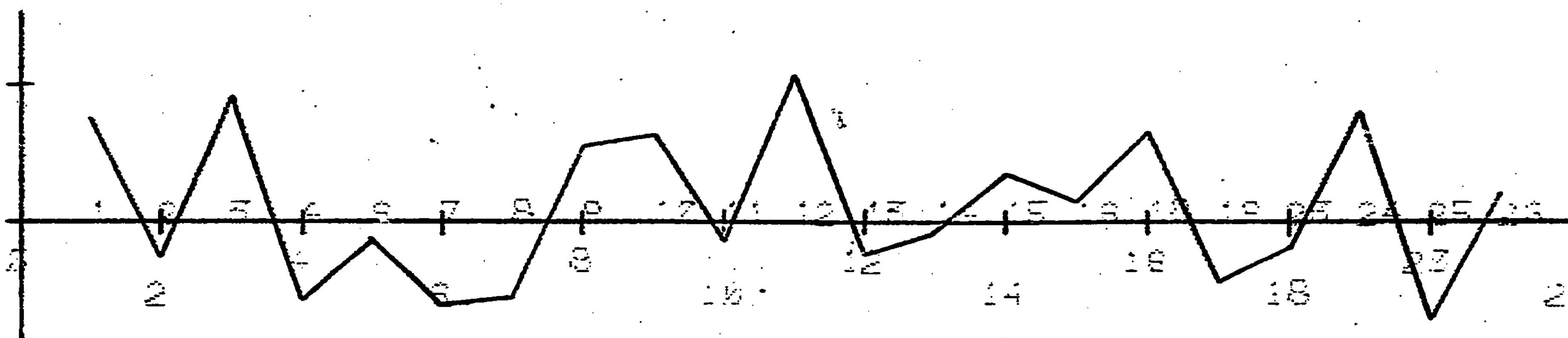
PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 4



PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 5



.37	- .12	.46	- .28	- .05	- .29	- .26	.27	.32	- .06	.53	- .12	- .03	.17	.07	.33	- .21	- .09	.40	- .35	.11
1.08	1.03	1.13	.91	.94	.89	1.10	1.13	.79	.92	1.15	1.01	1.27	.84	.83	.96	1.52	1.26	1.05	.90	.98
----	----	----	.39	.39	.42	----	----	.61	.39	----	----	----	.40	.52	.25	----	----	----	.45	.30

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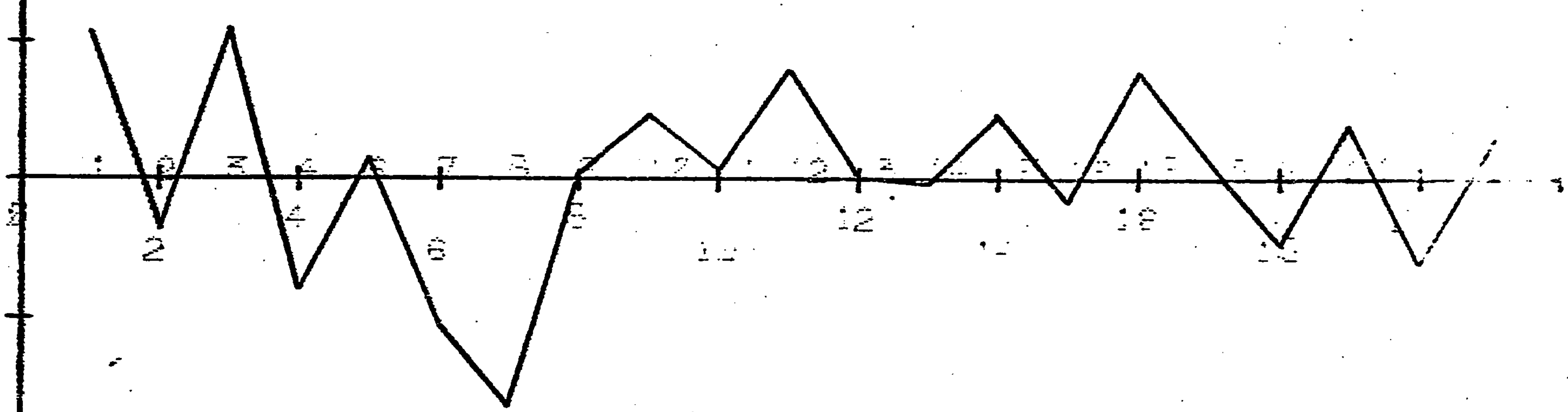
PROFILES BY DIVISIONAL DIMENSION SCORES

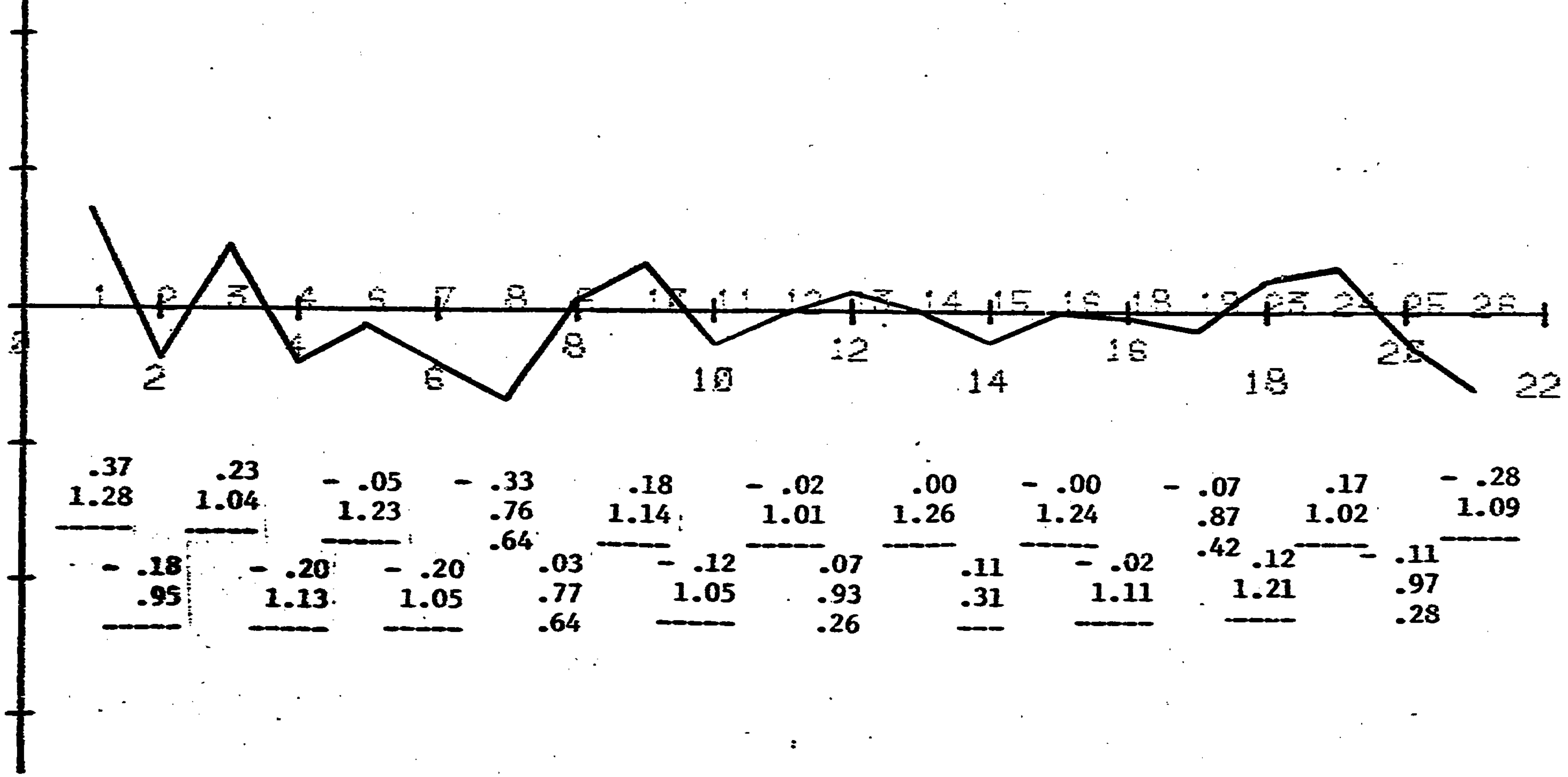
CODAP CLUSTER NUMBER-- 6



Dimension			
1	.54	1.15	
2	- .18	1.05	
3	.54	.92	.35
4	- .40	.86	.49
5	.08	.97	.31
6	- .52	.97	.19
7	- .81	1.29	
8	.02	1.20	
9	.23	.86	.50
10	.03	1.03	
11	.40	1.05	
12	.01	1.00	
13	- .01	2.13	
14	.23	.62	.80
15	- .08	.99	
16	.40	1.02	
17	.07	.91	.29
18	- .23	.94	.38
19	.18	.62	.77
20	- .31	.94	.38
21	.11	.88	.52

PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 7



PROFILES BY DIVISIONAL DIMENSION SCORES

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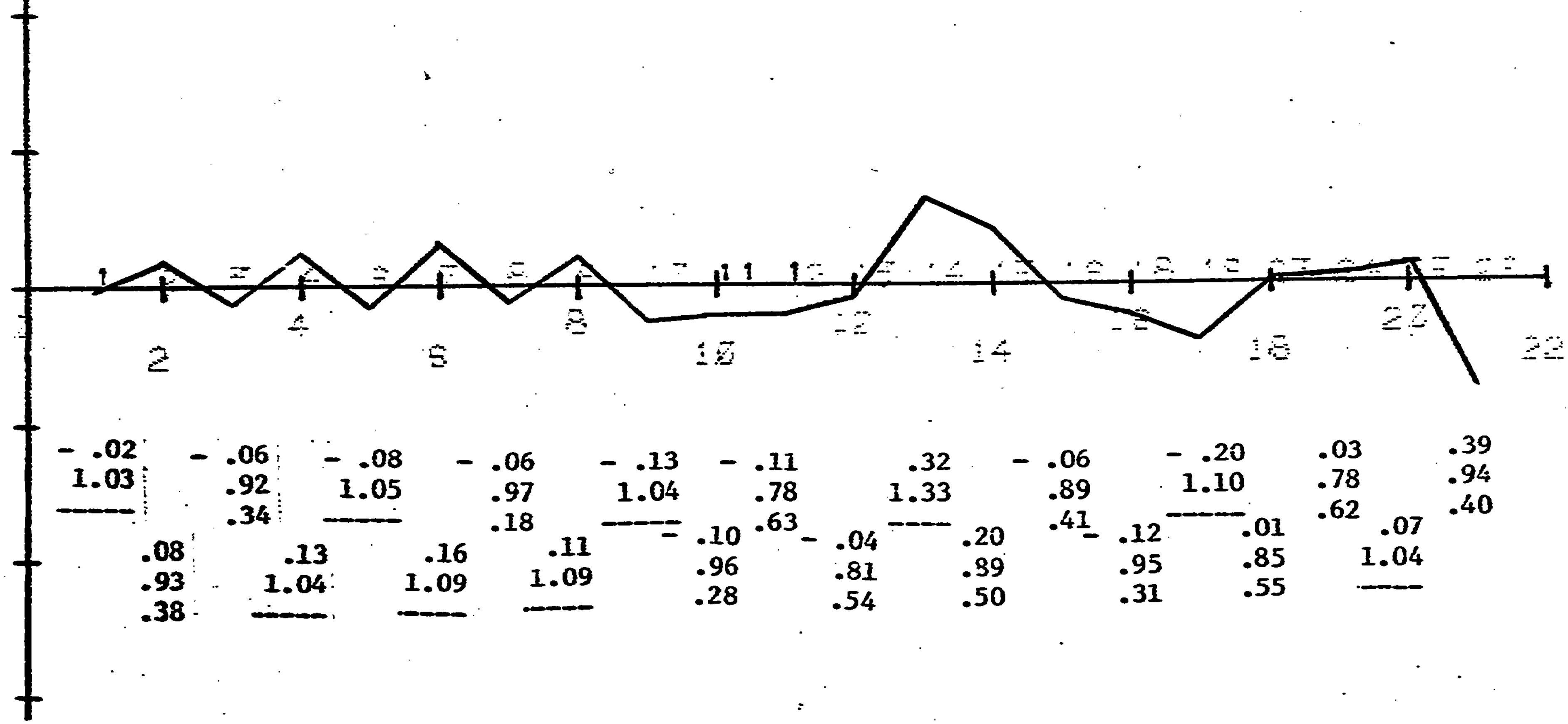

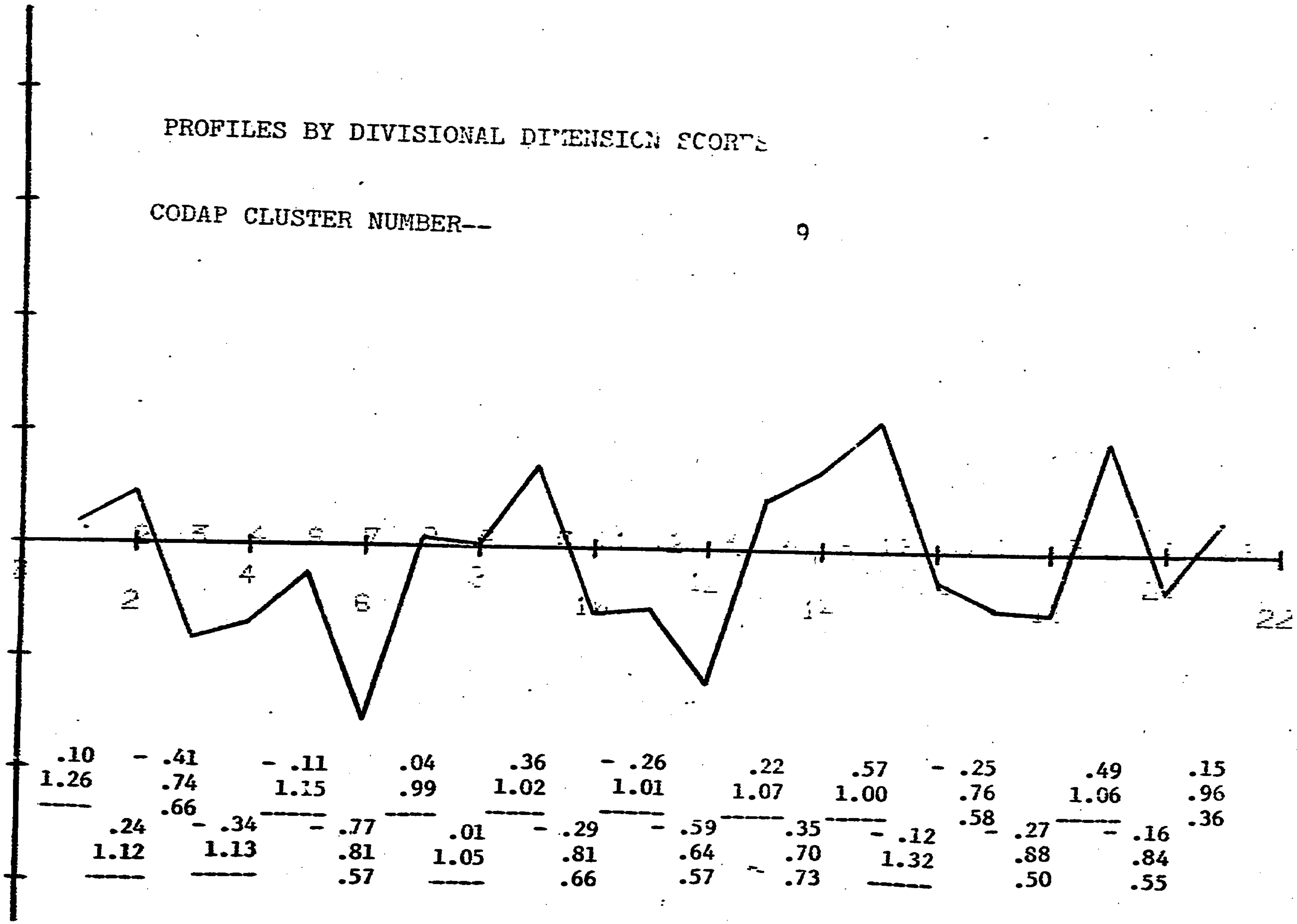
PROFILES BY DIVISIONAL DI'ENSICN SCORTS
CODAP CLUSTER NUMBER-- 9
2
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6
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1.26
.24
1.12
- .41
.74
.66
- .34
1.13
- .11
1.15
- .77
.81
.57
.04
.99
.01
1.05
.36
1.02
- .29
.81
.66
- .26
1.01
- .59
.64
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.22
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.70
.73
.57
1.00
- .12
1.32
- .25
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.58
- .27
.88
.50
.49
1.06
- .16
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.96
.36

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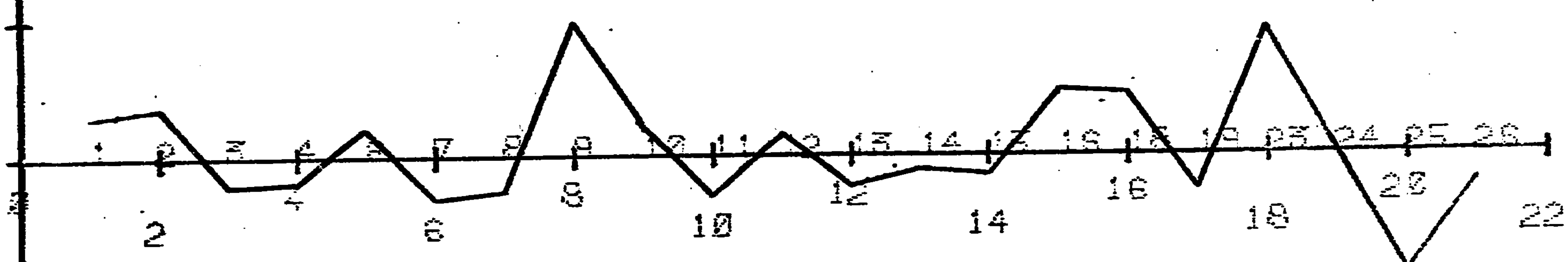
PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 10



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.96	1.03	.85	.96	1.16	.93	1.08	1.09	.97	.98	1.00	1.12	1.01	1.11	1.14	1.16	1.07	1.33	1.06	.96	.98
.30		.50	.21		.33			.24	.20										.31	.29

PROFILES BY DIVISIONAL DIMENSION SCORES

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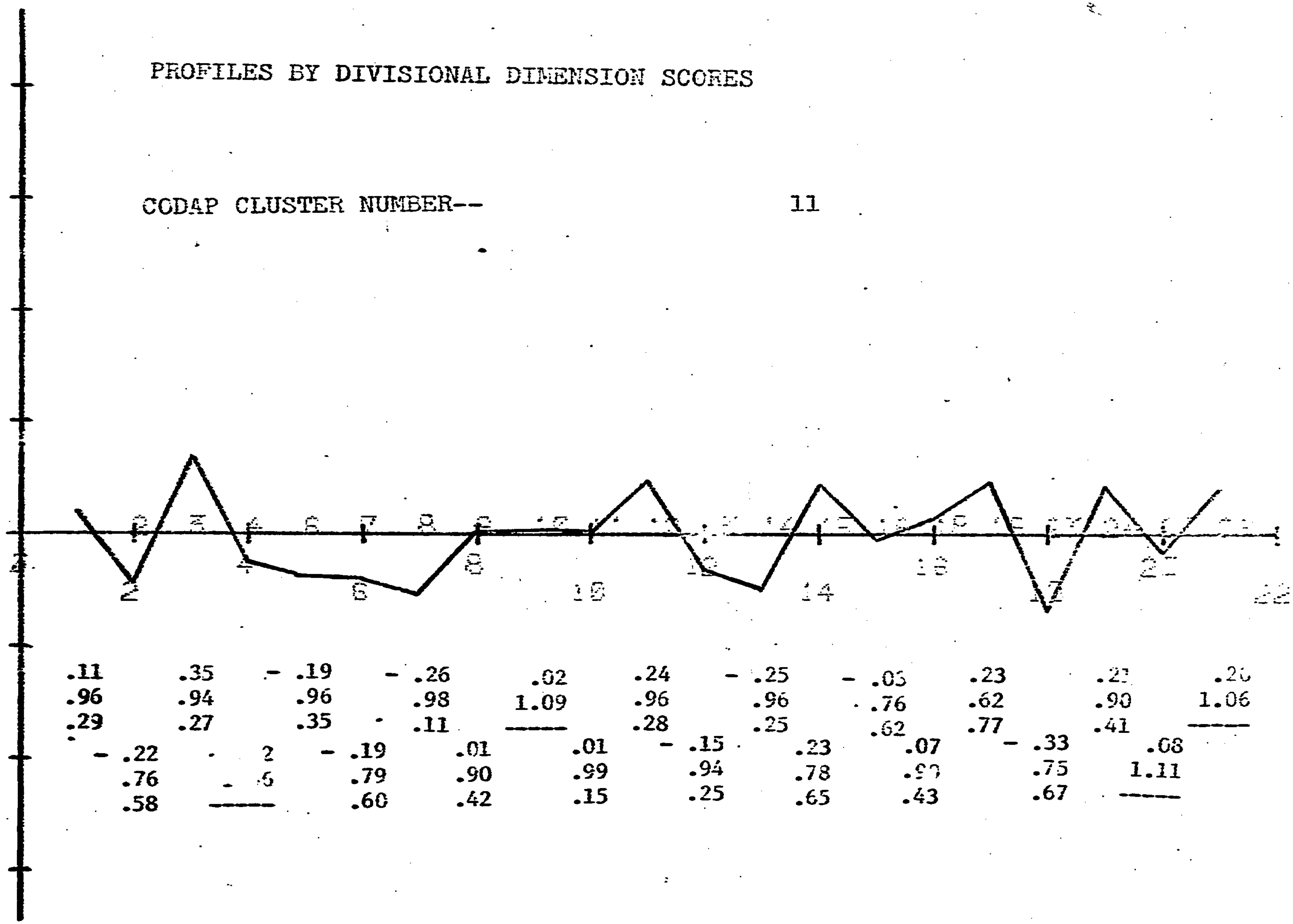

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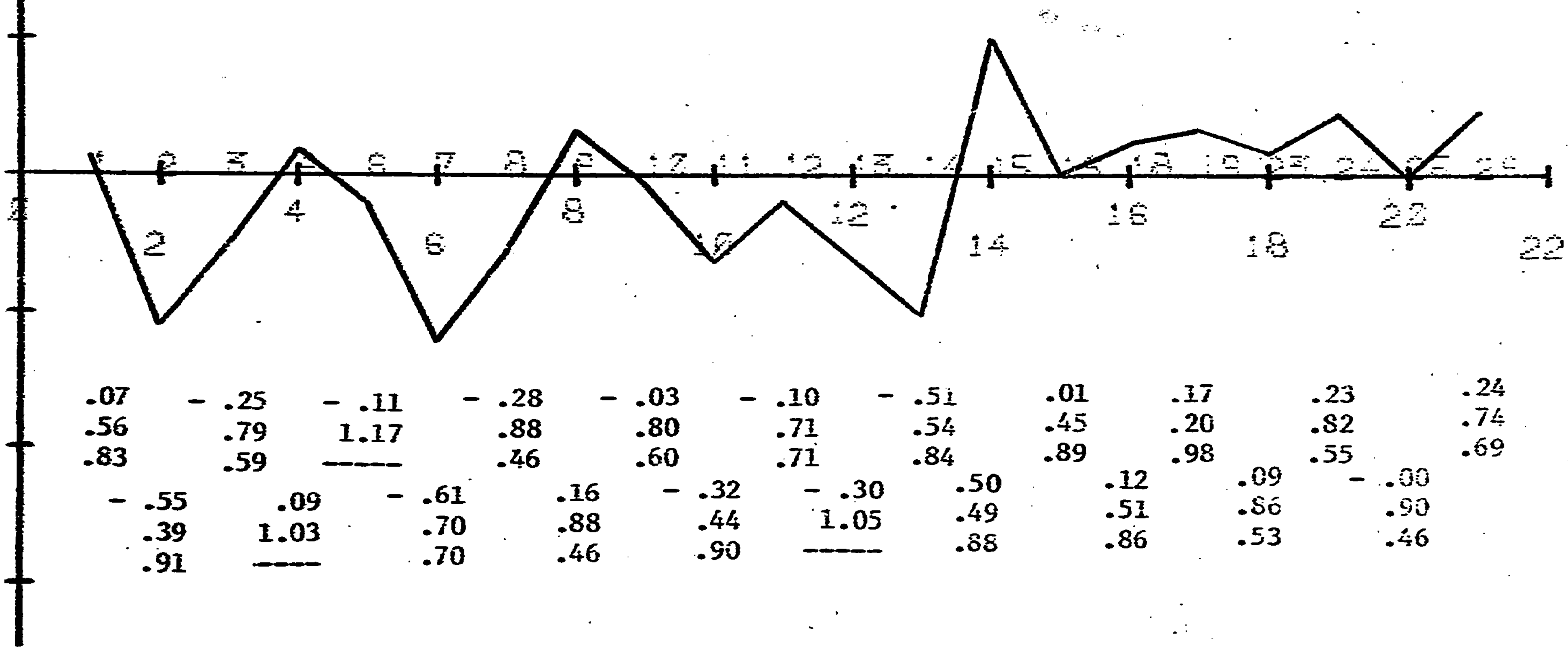

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PROFILES BY DIVISIONAL DIMENSION SCORES

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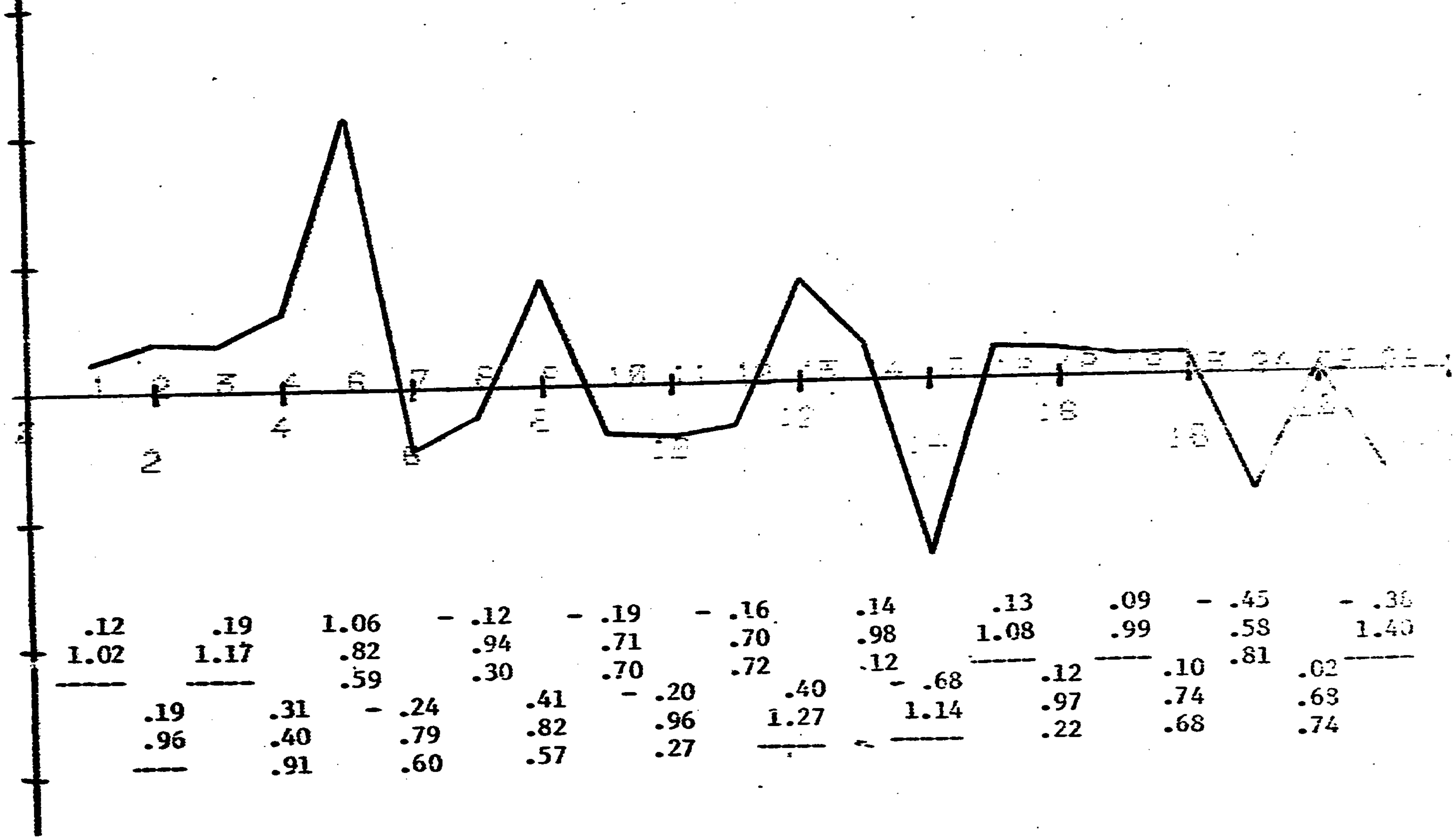

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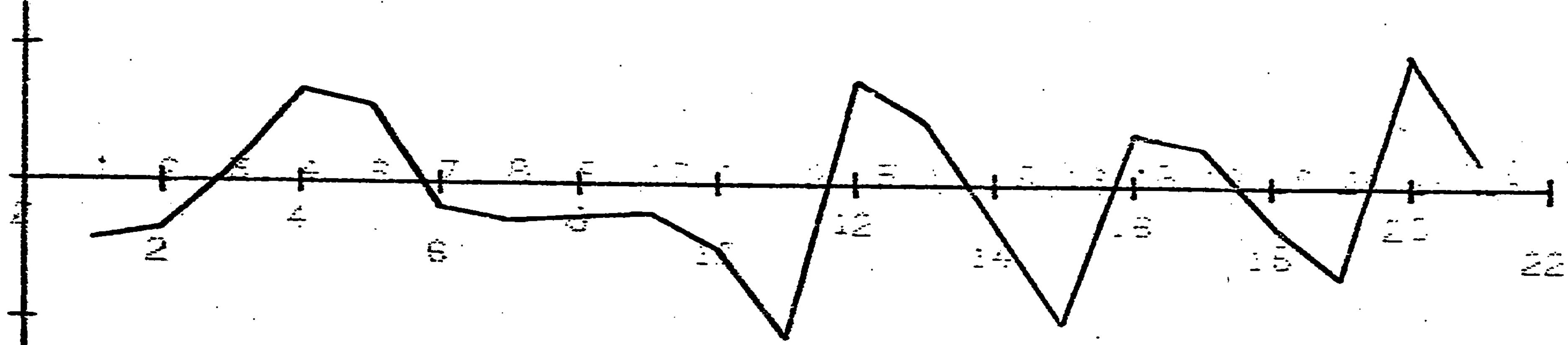

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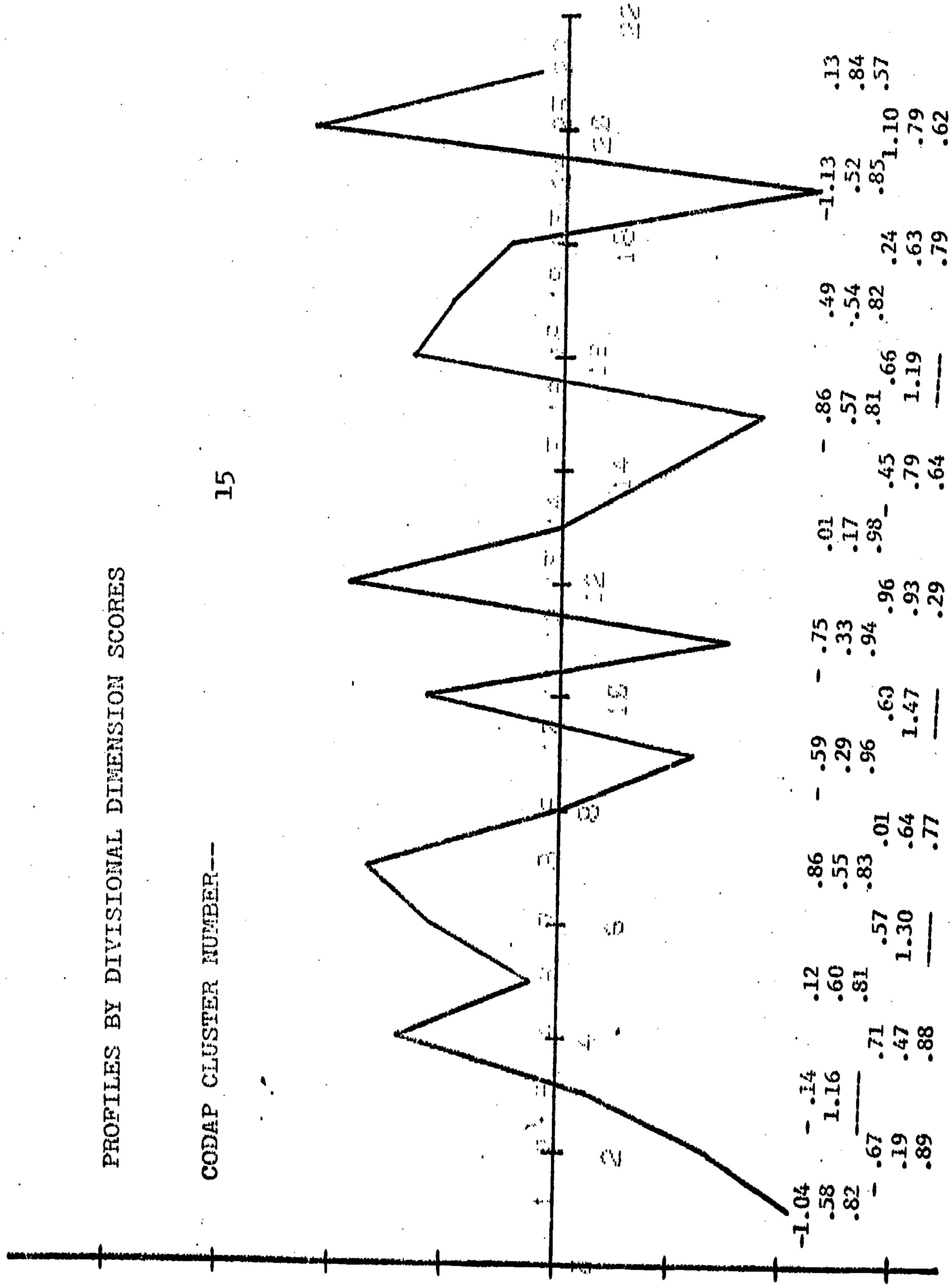
.89	.85	.97	.84	.72	.89	.68	.72	1.14	.64	.72	1.14	.80	.94	.76	1.01	.55	.64	.55	1.00	.99
.46	.40	.15	.52	.71	.42	.72	.69	----	.77	.69	----	.58	.40	.63	----	.82	.78	.83	----	.25

PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 15



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PROFILES BY DIVISIONAL DIMENSION SCORES

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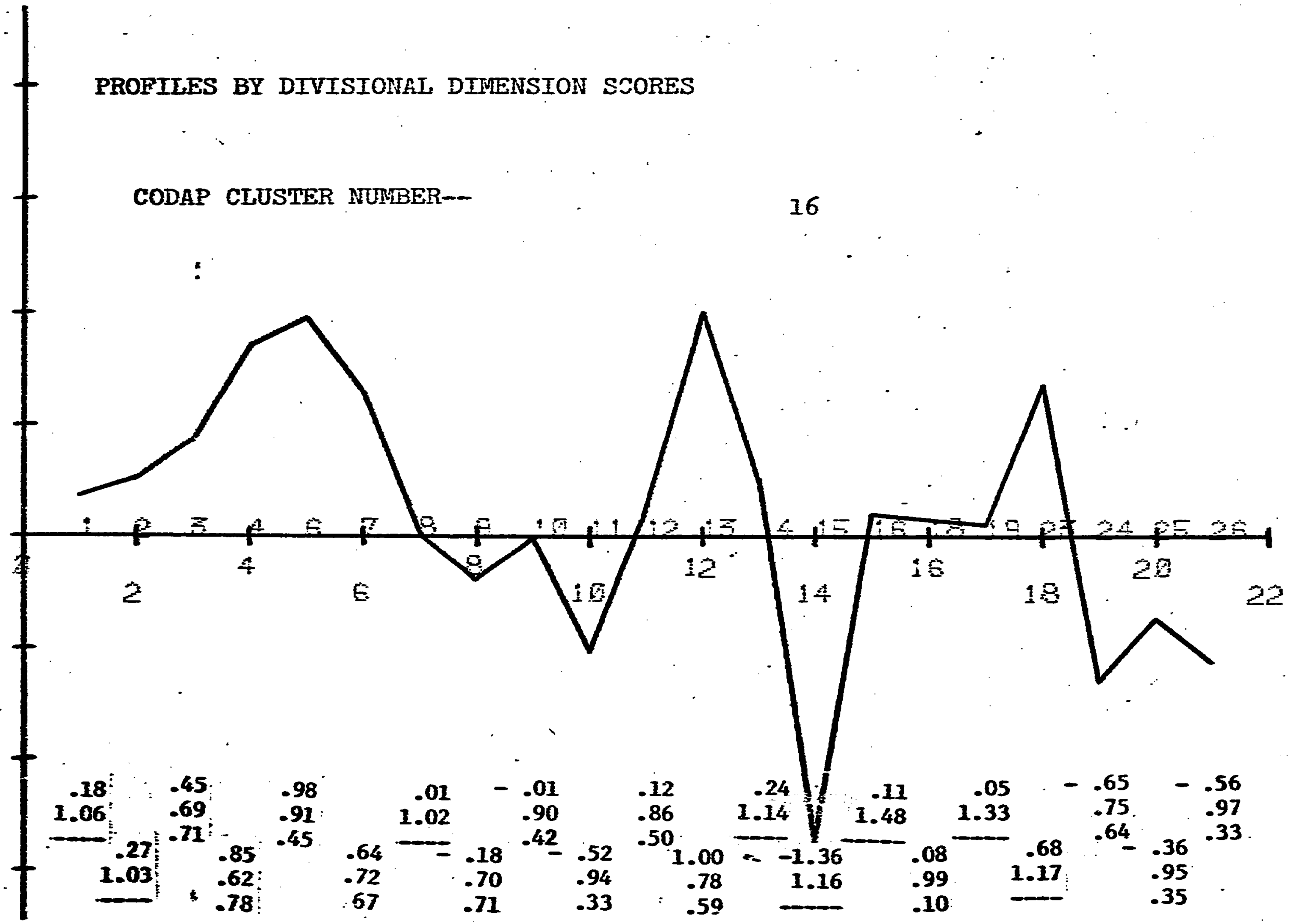

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PROFILES BY DIVISIONAL DIMENSION SCORES

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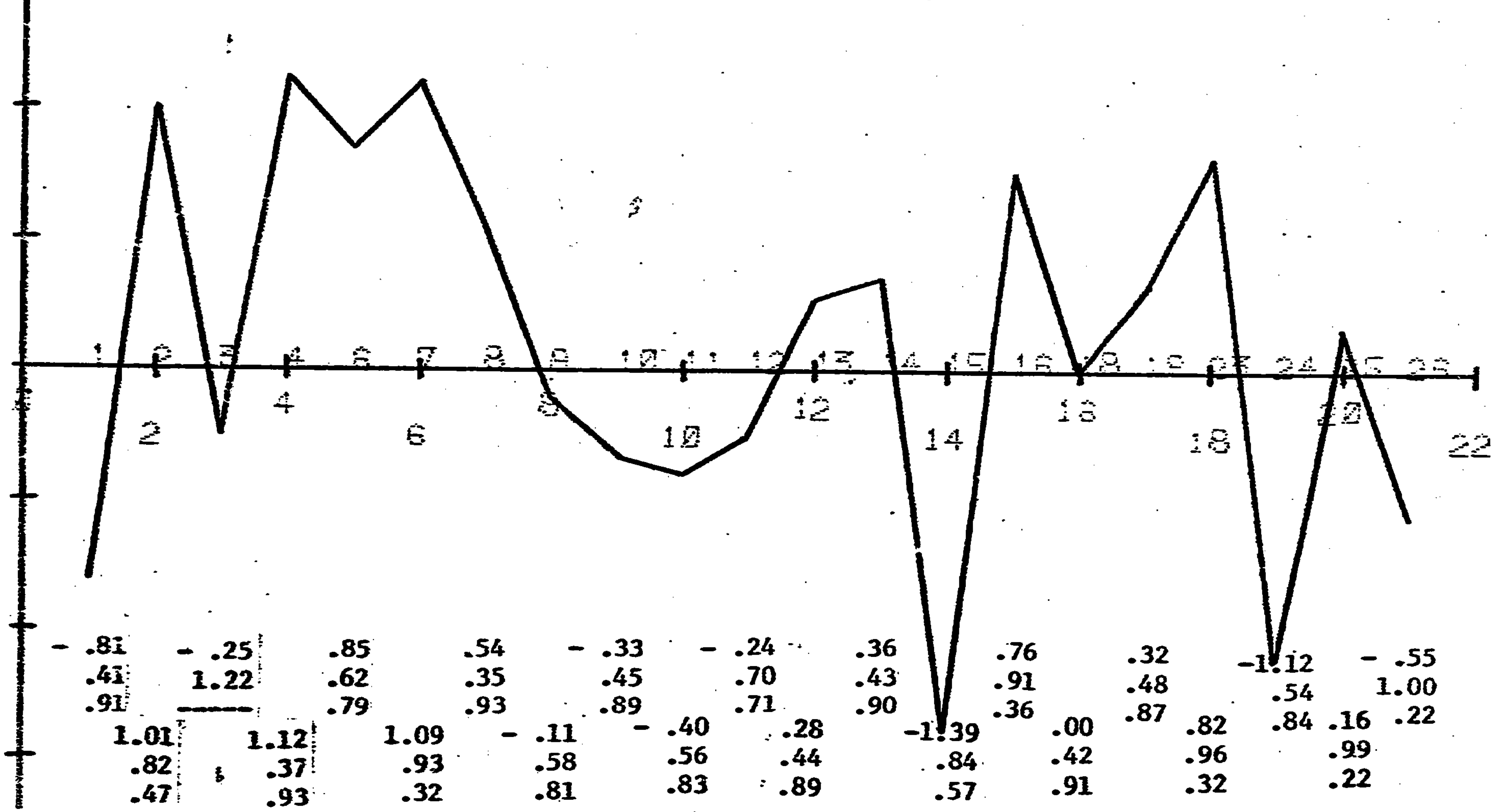

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PROFILES BY DIVISIONAL DIMENSION SCORES

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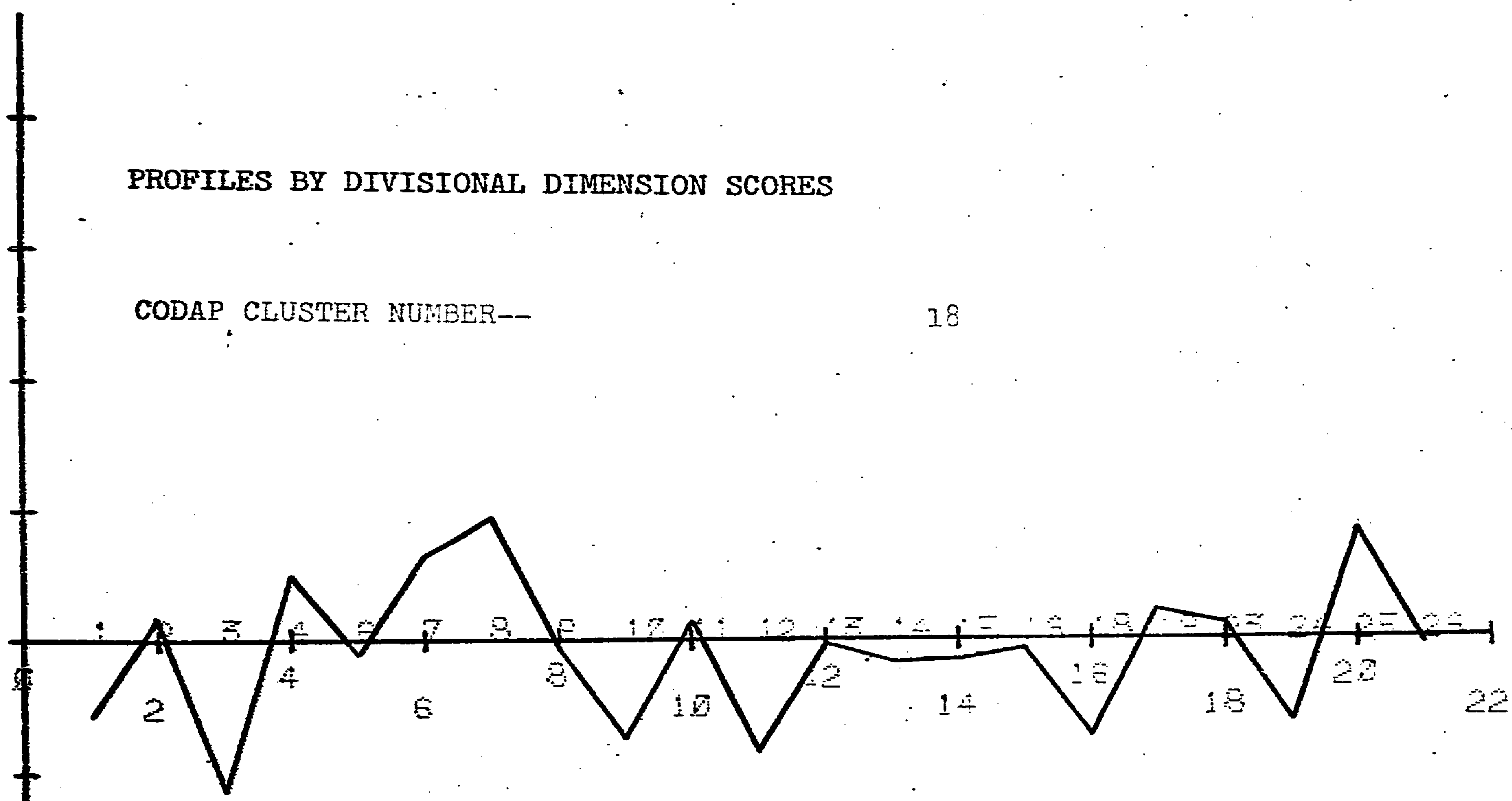

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.68	.78	.67	.91	1.03	.96	.70	.98	.84	.90	.61	.84	.60	1.05	.77	.79	1.00	.85	.87	.92	1.08
.74	.55	.73	.39	----	.21	.70	.18	.53	.43	.79	.50	.79	----	.61	.61	----	.55	.46	.41	----

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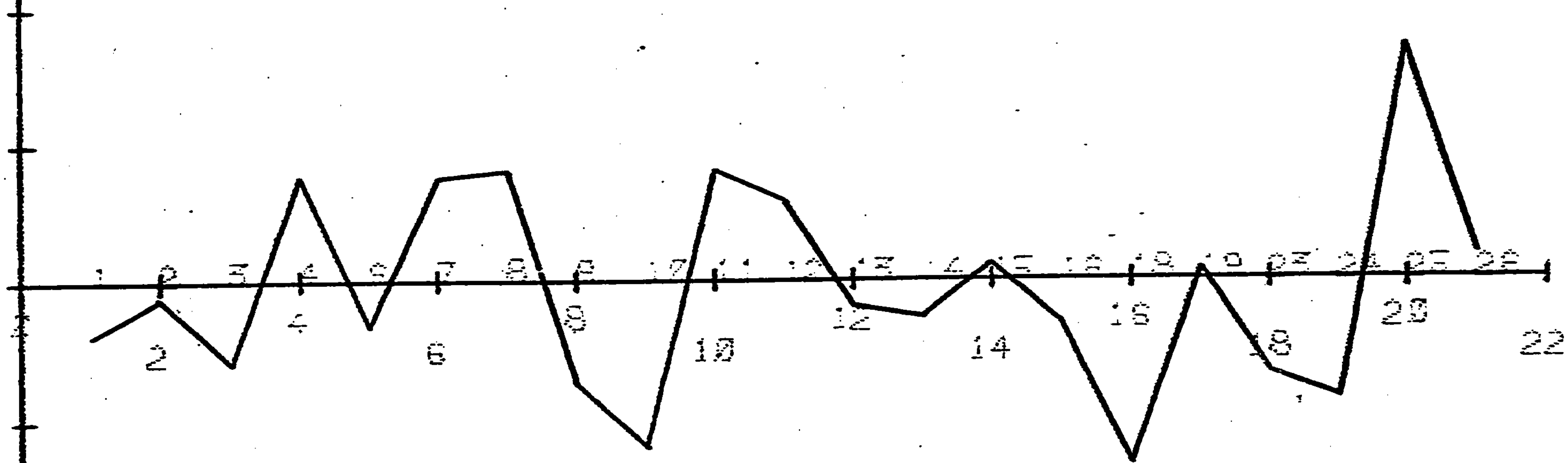
CODAP CLUSTER NUMBER-- 19



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.65	.62	1.00	.85	1.10	.88	1.00	.44	.93	1.16	1.19	.79	.44	.98	.34	.66	.66	.56	.80	.92	1.23
.76	.75	----	.52	----	.45	----	.90	.37	----	----	.58	.89	.30	.94	.75	.72	.83	.59	.41	----

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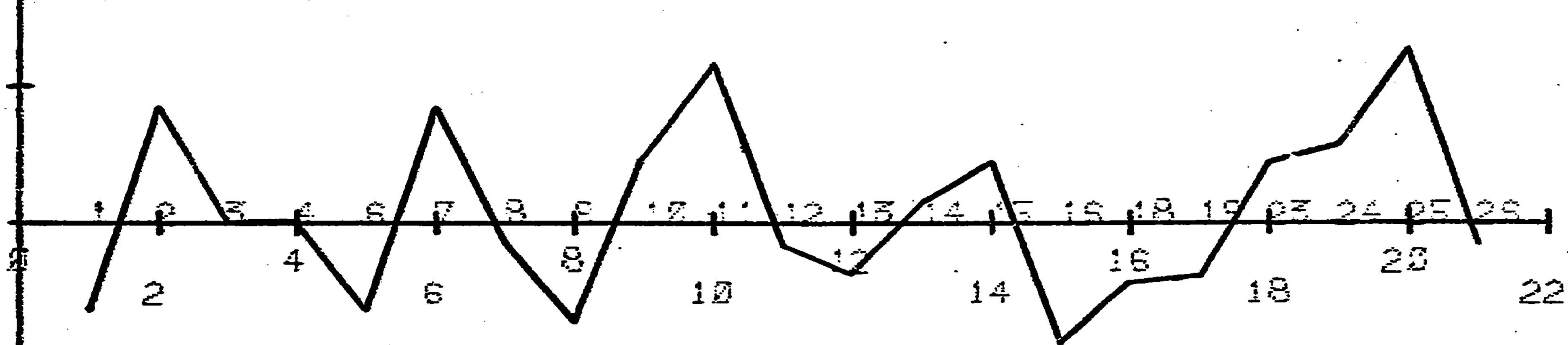

- .32	.58	.82	
.42	1.27		
- .07	.38	.92	
- .36	1.43		
.58	.92	.42	
- .08	1.00		
- .19	.92	.37	
.08	.96	.26	
.22	.34	.94	
- .44	.56	.83	
- .55	.16	.99	
- .21	.63	.76	
- .19	.40	.92	
.45	.54	.85	
.60	1.18		
.22	1.05		
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- .49	.81	.60	
- .27	1.10		

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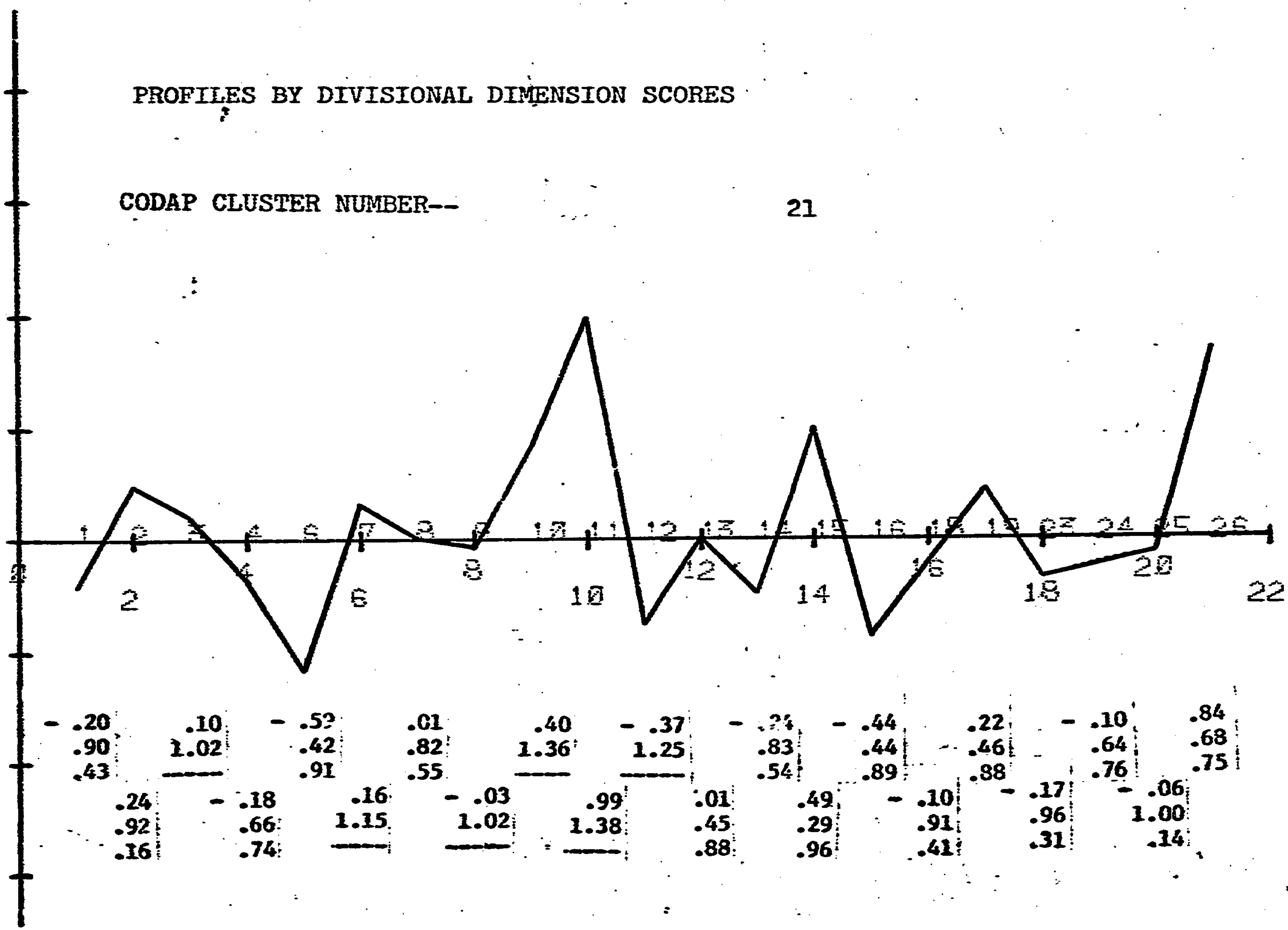

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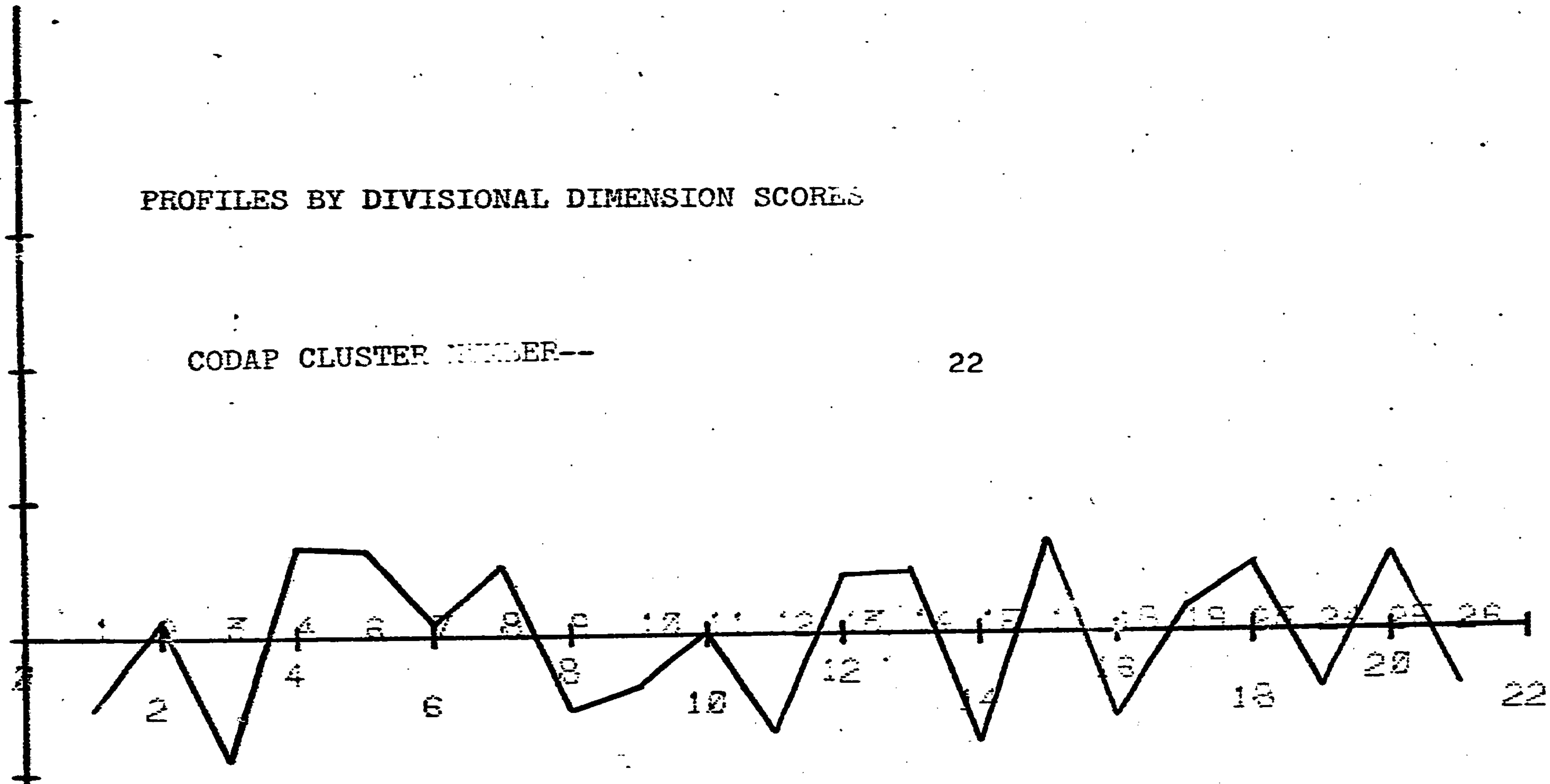

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.90	1.00	.61	.90	.98	.81	.63	.89	.84	.82	.73	.78	.93	1.21	1.15	.96	.72	1.02	1.09	1.00	.85
.44	----	.78	.41	.28	.57	.77	.44	.54	.57	.68	.60	.34	----	----	.28	.65	----	----	.18	.56

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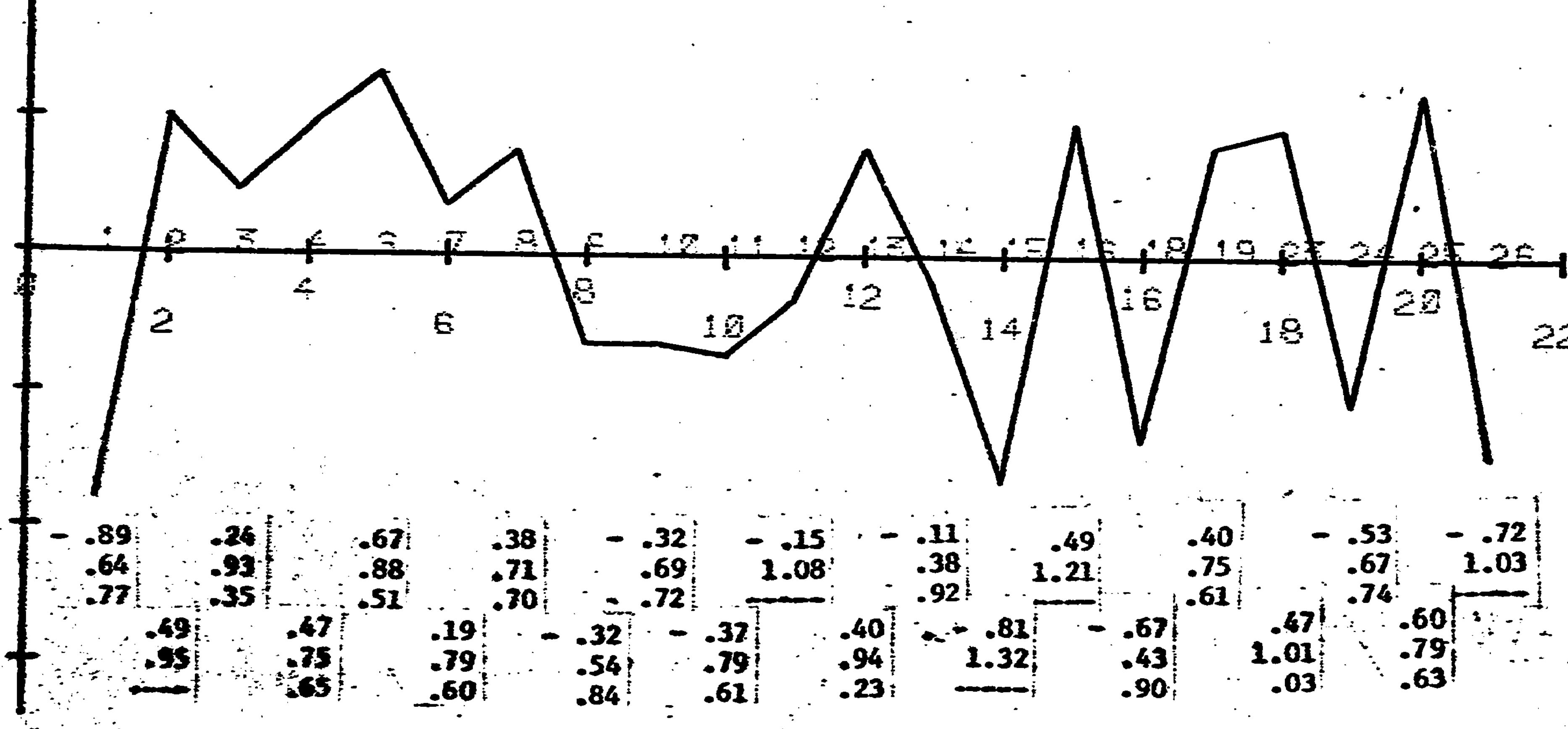

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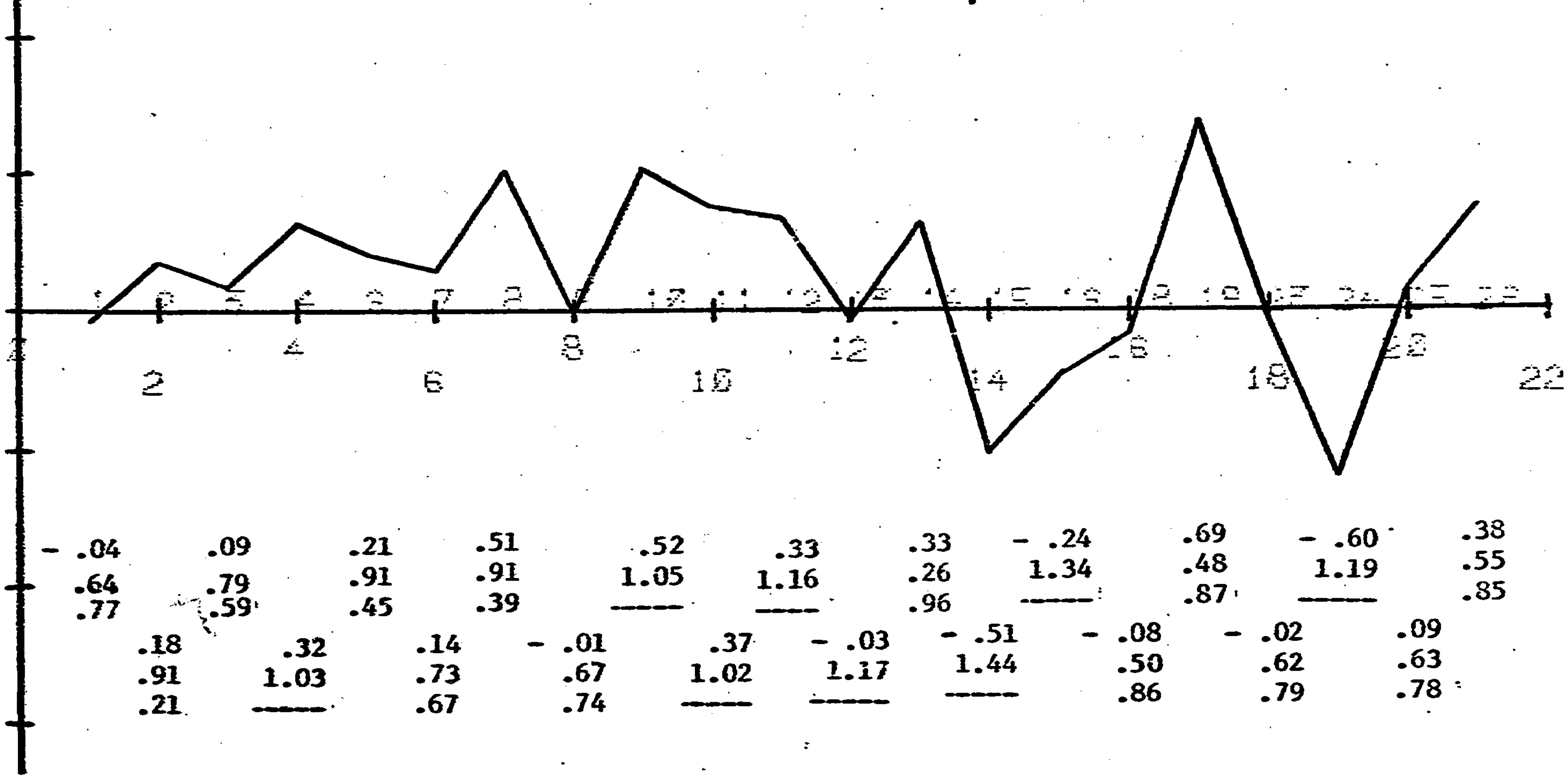

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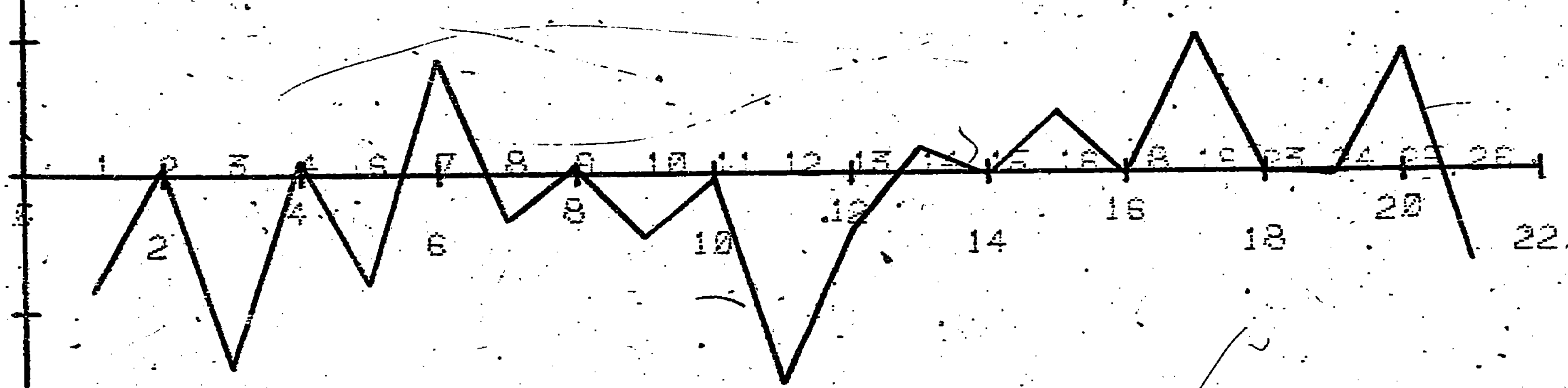

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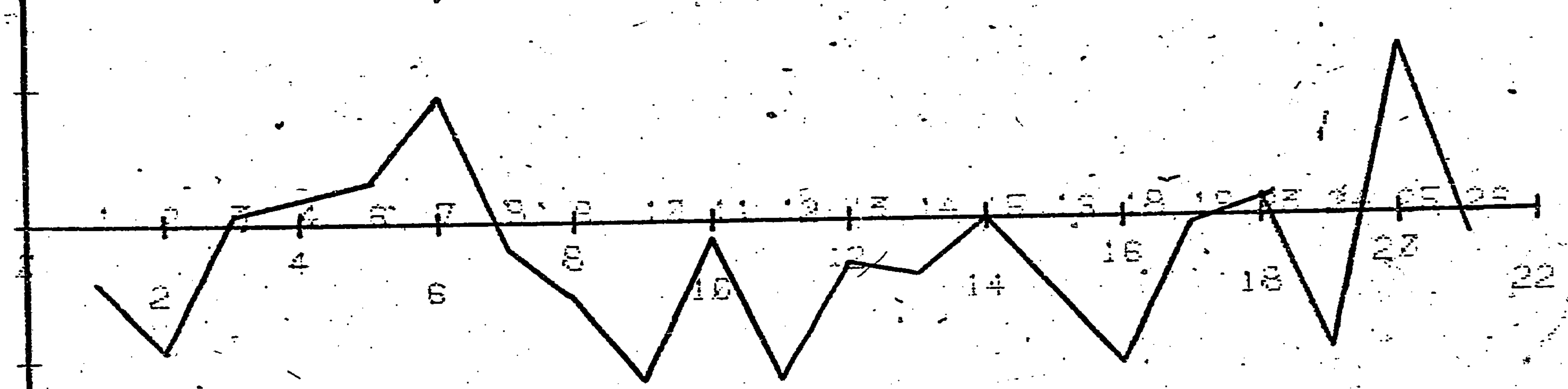
.47	.85	.72	.70	.58	1.12	.86	.94	.76	1.08	.56	.75	.51	1.11	1.34	.93	.52	.61	.95	.71	.79
.88	.41	.68	.70	.82	——	.48	.34	.65	1.00	.83	.63	.85	——	——	.36	.84	.79	.26	.71	.64

PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 26



-.21	-.47	.03	.09	.15	.47	-.09	-.28	-.58	-.06	-.59	-.16	-.21	.00	-.27	-.55	-.03	.06	-.49	.62	-.08
.70	.92	.77	.73	.71	46	.86	.32	1.11	1.35	.55	.62	.42	1.10	.53	.84	.49	.93	.54	.67	1.02
.72	.17	.62	.67	.72	.88	.48	.95	----	----	.84	.77	.91	----	.84	.53	.51	.40	.84	.75	.12

PROFILES BY DIVISIONAL DIMENSION SCORES

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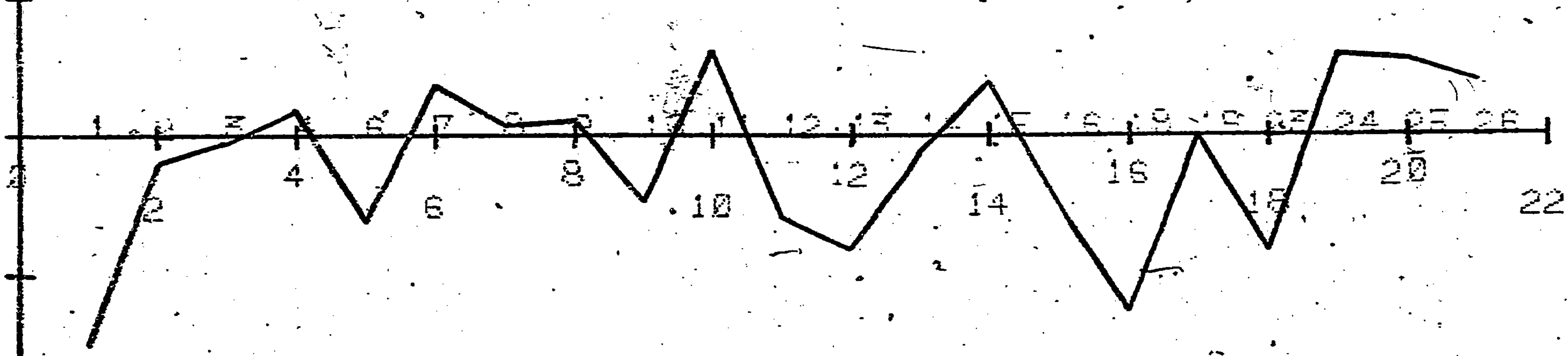
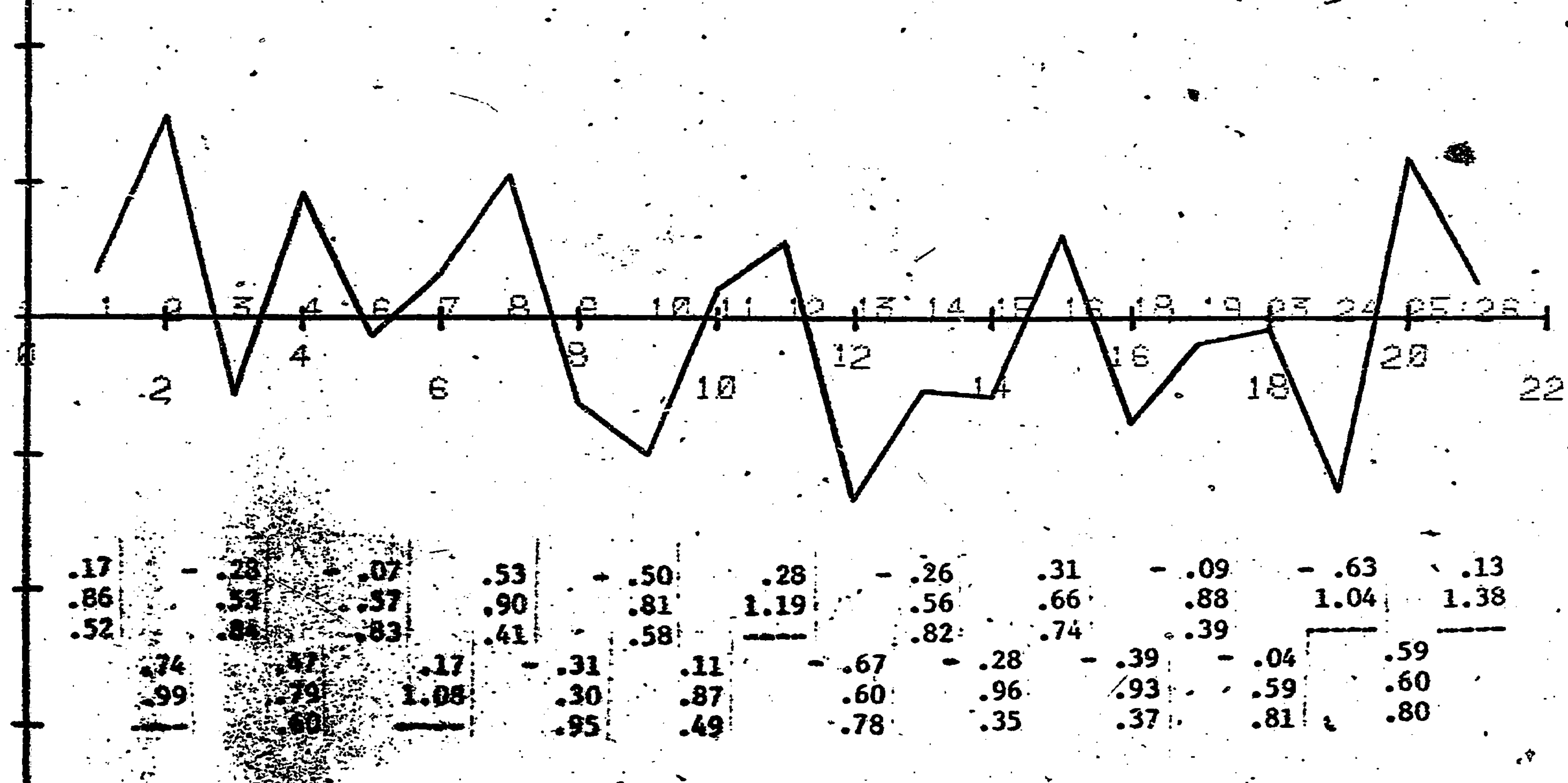


-.75	.27	.96
.09	.67	.70
-.03	.78	.60
.10	.85	.51
-.31	1.05	
.17	.97	.14
.04	.75	.65
.06	1.26	
-.24	1.13	
.31	1.05	
-.29	.78	.63
-.41	.74	.64
-.06	.78	.62
.20	.53	.86
-.25	.46	.88
-.63	.89	.45
.00	.34	.93
-.42	.32	.95
.29	.77	.63
.28	.66	.76
.19	.92	.44

PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 28



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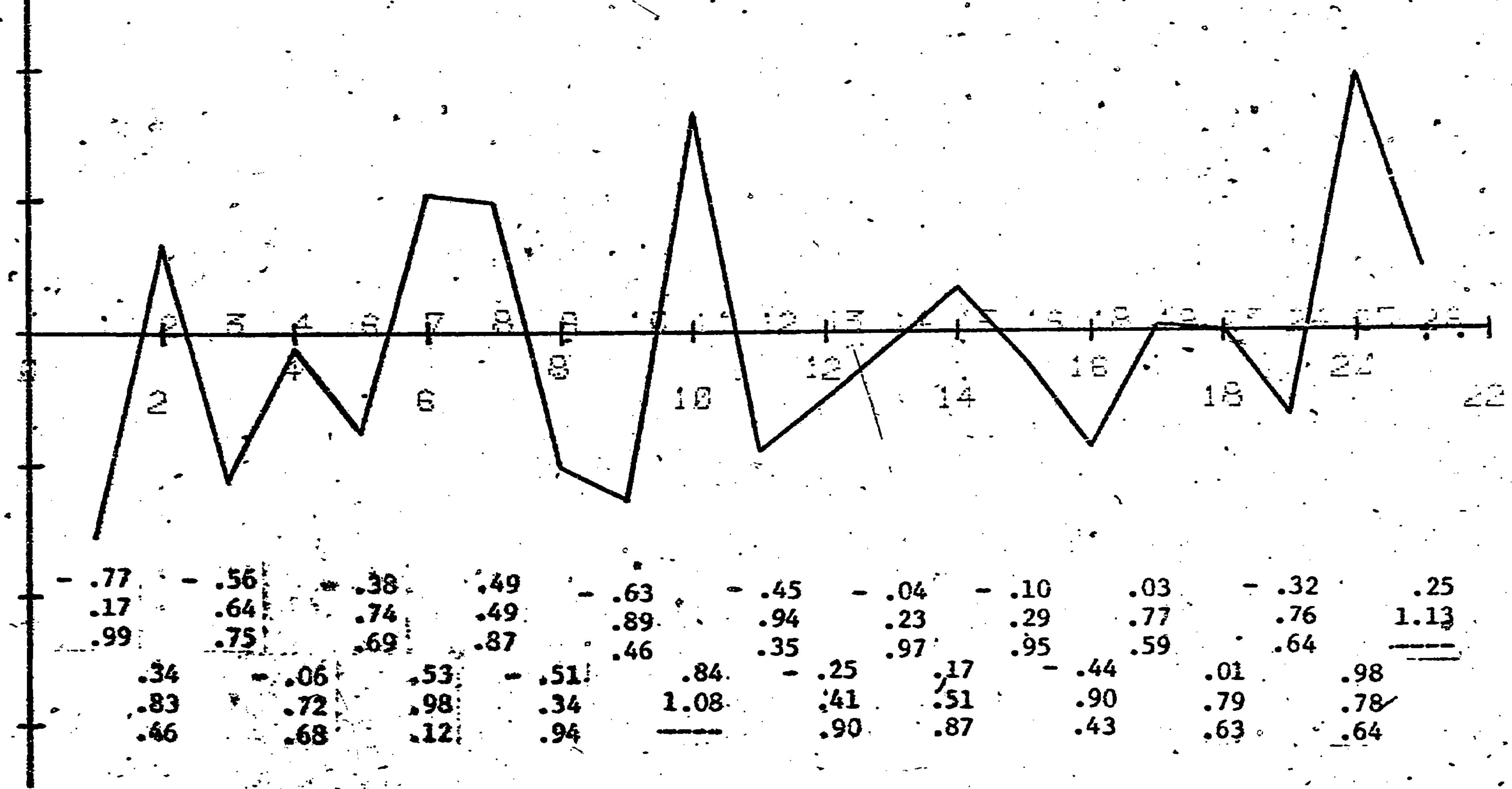

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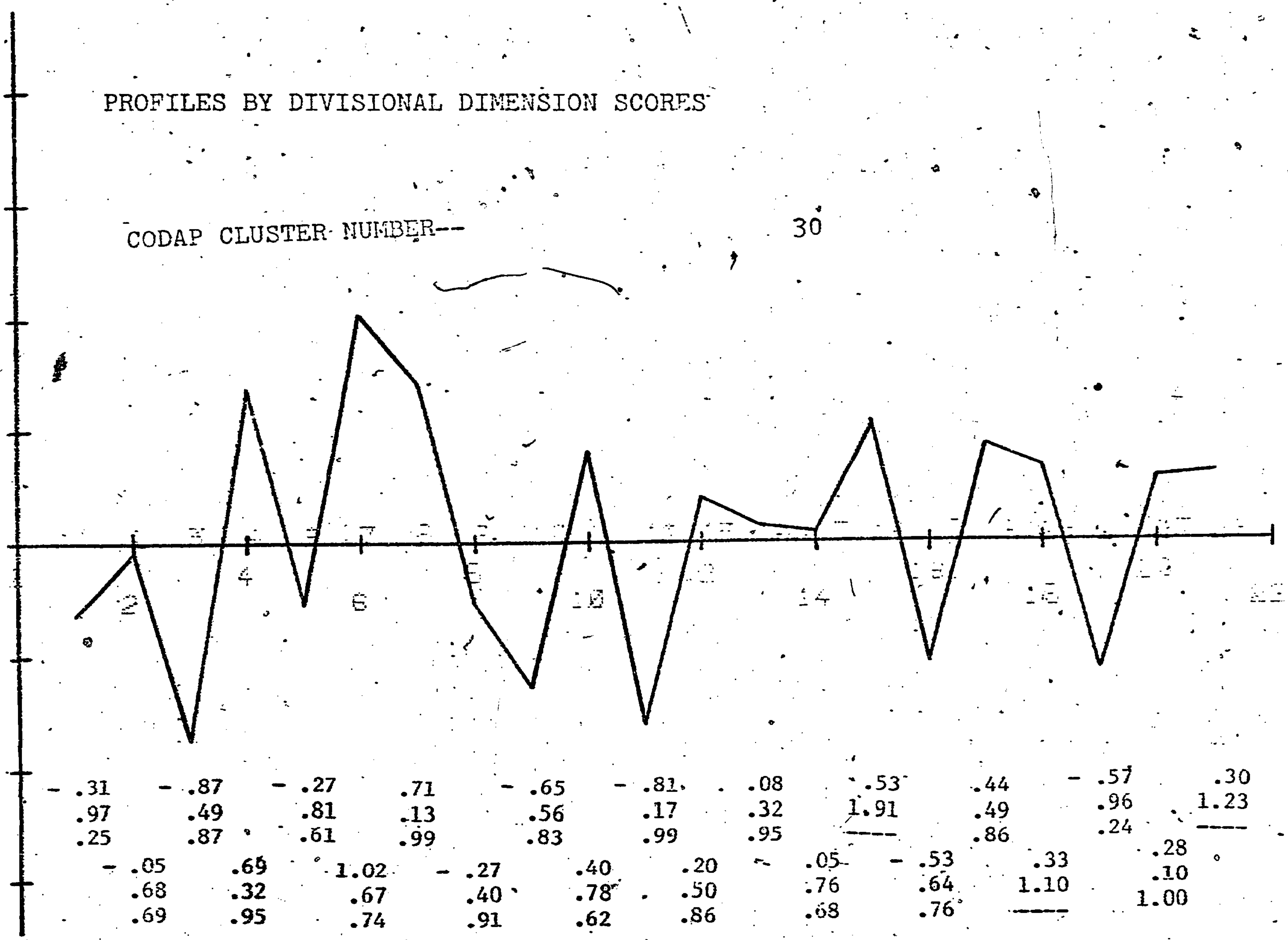

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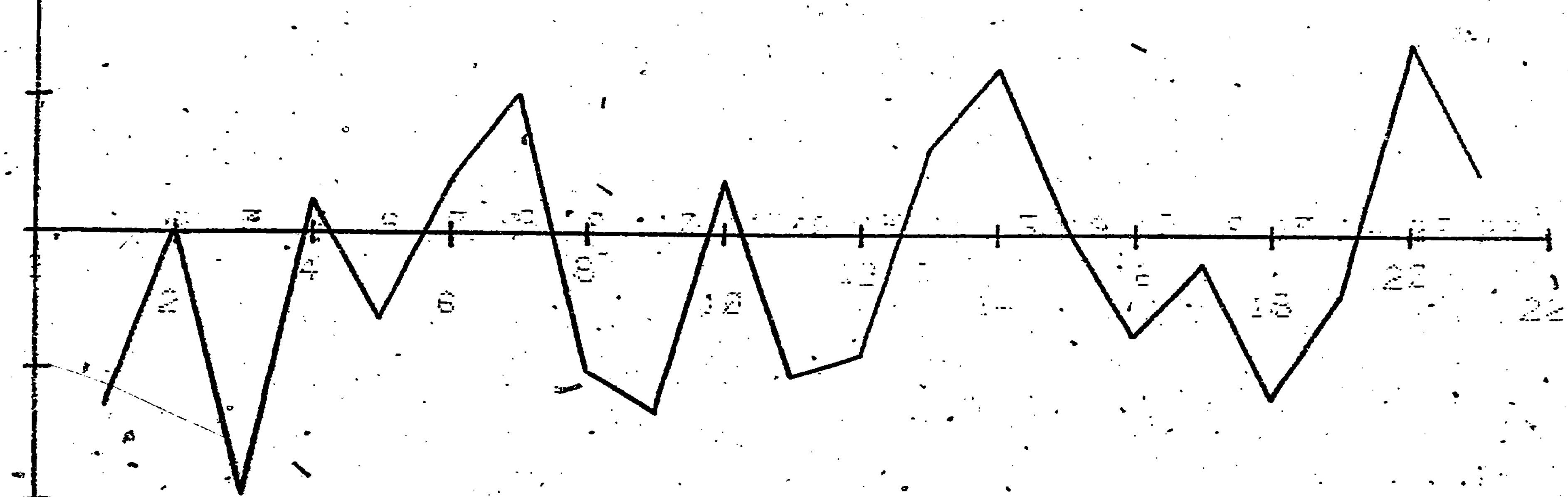

-.64	-.97	-.31	.52	-.65	-.53	.32	.03	-.10	-.22	.24
.09	.34	.49	.37	.57	.51	.34	1.01	.91	.59	.75
1.00	.94	.88	.93	.82	.86	.94		.30	.80	.68

.03	.13	.19	-.50	.20	-.44	.62	-.37	-.60	.71
.75	.57	.73	.22	.62	.67	.41	.87	.32	.51
.59	.82	.67	.98	.79	.72	.92	.48	.95	.87

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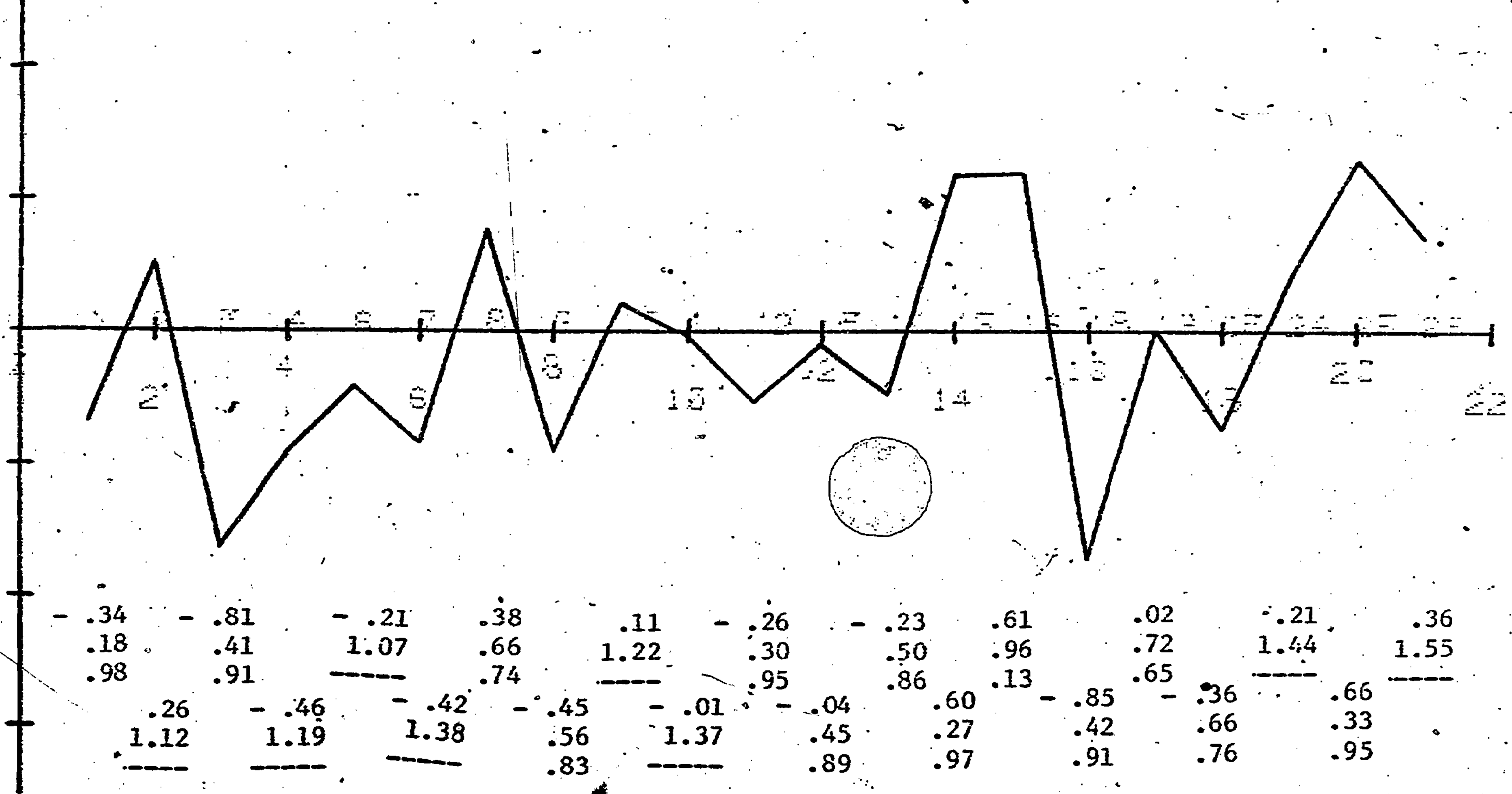
PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 32



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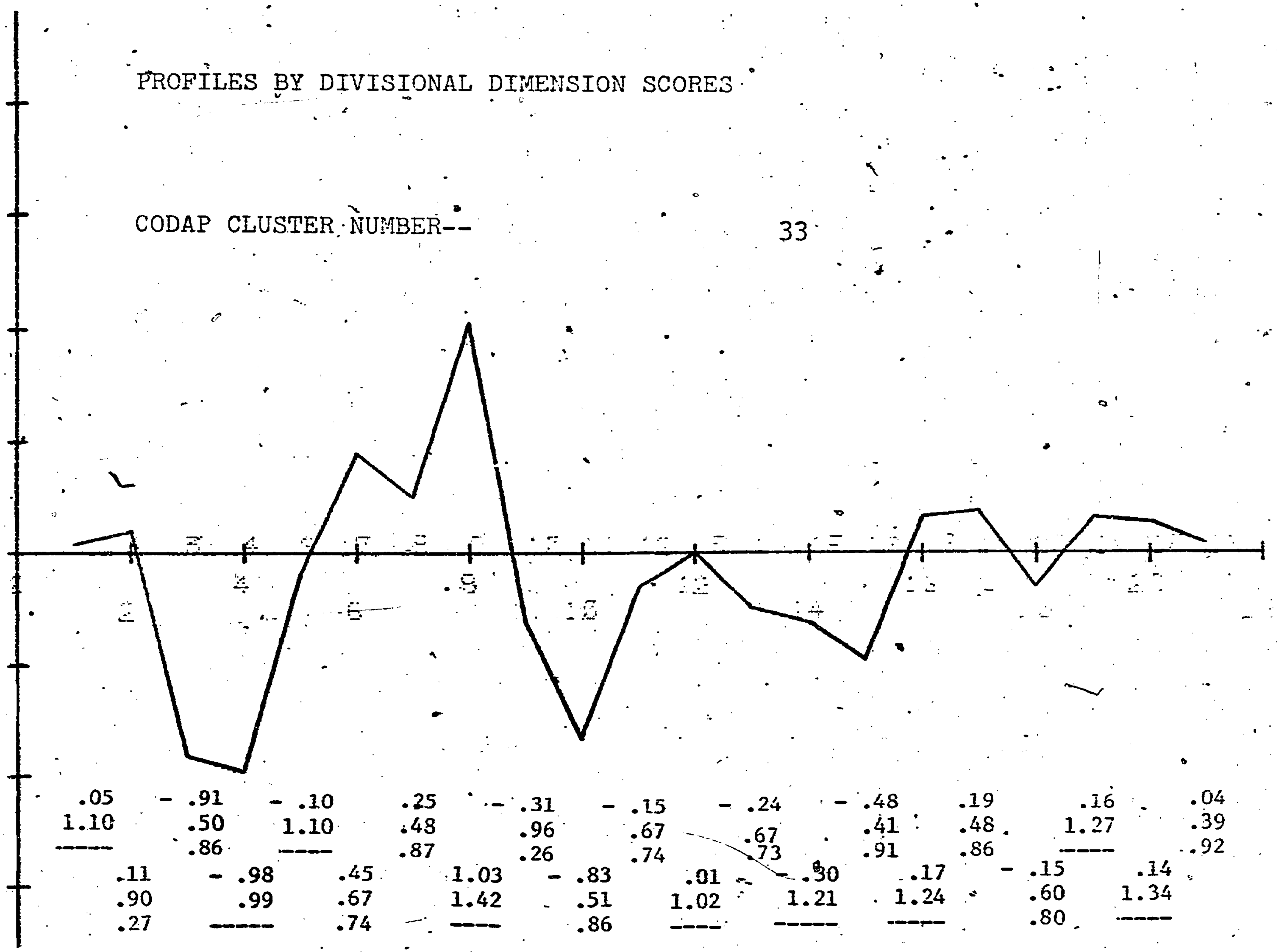

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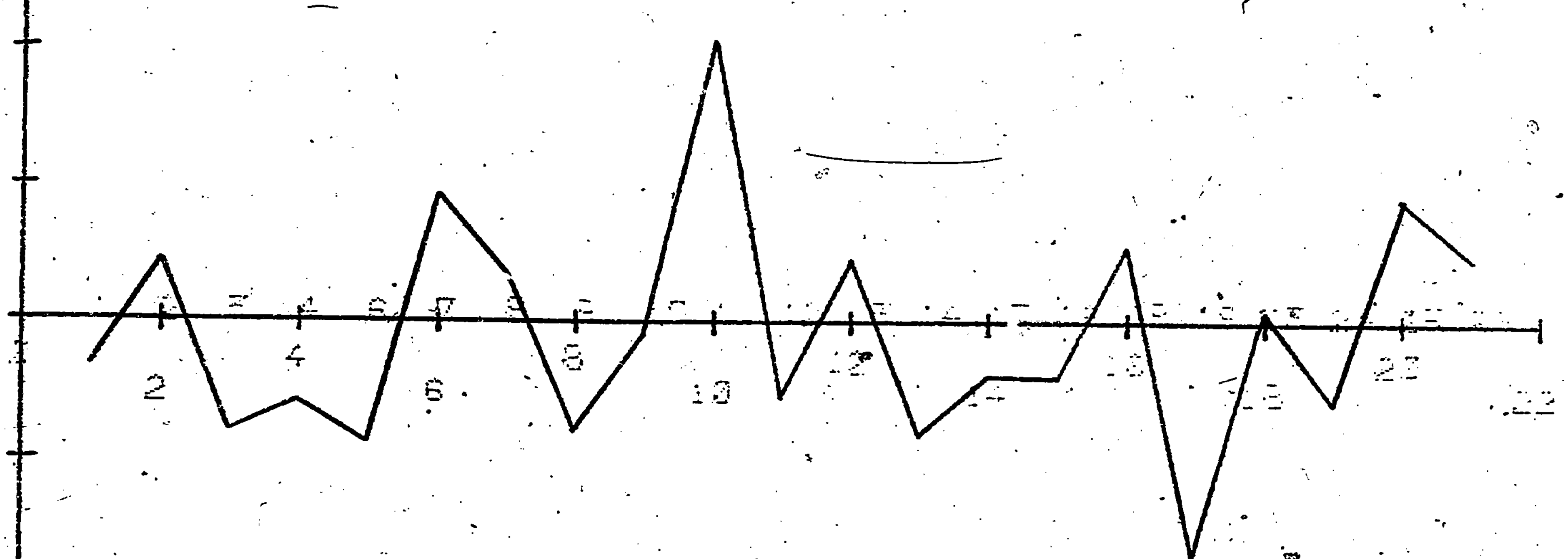

-.16	.22	-.39	-.29	-.43	.46	.18	-.40	-.04	1.03	-.27	.23	-.40	-.19	.20	.28	-.84	.06	-.29	.45	.25
1.18	1.25	.69	1.26	.99	1.00	.61	.45	1.02	1.58	.70	1.25	.65	.63	.90	1.11	1.50	.94	.91	.87	.86
----	----	.71	----	.23	----	.79	.89	----	----	.71	----	.75	.79	.38	----	----	.37	.39	.52	.55

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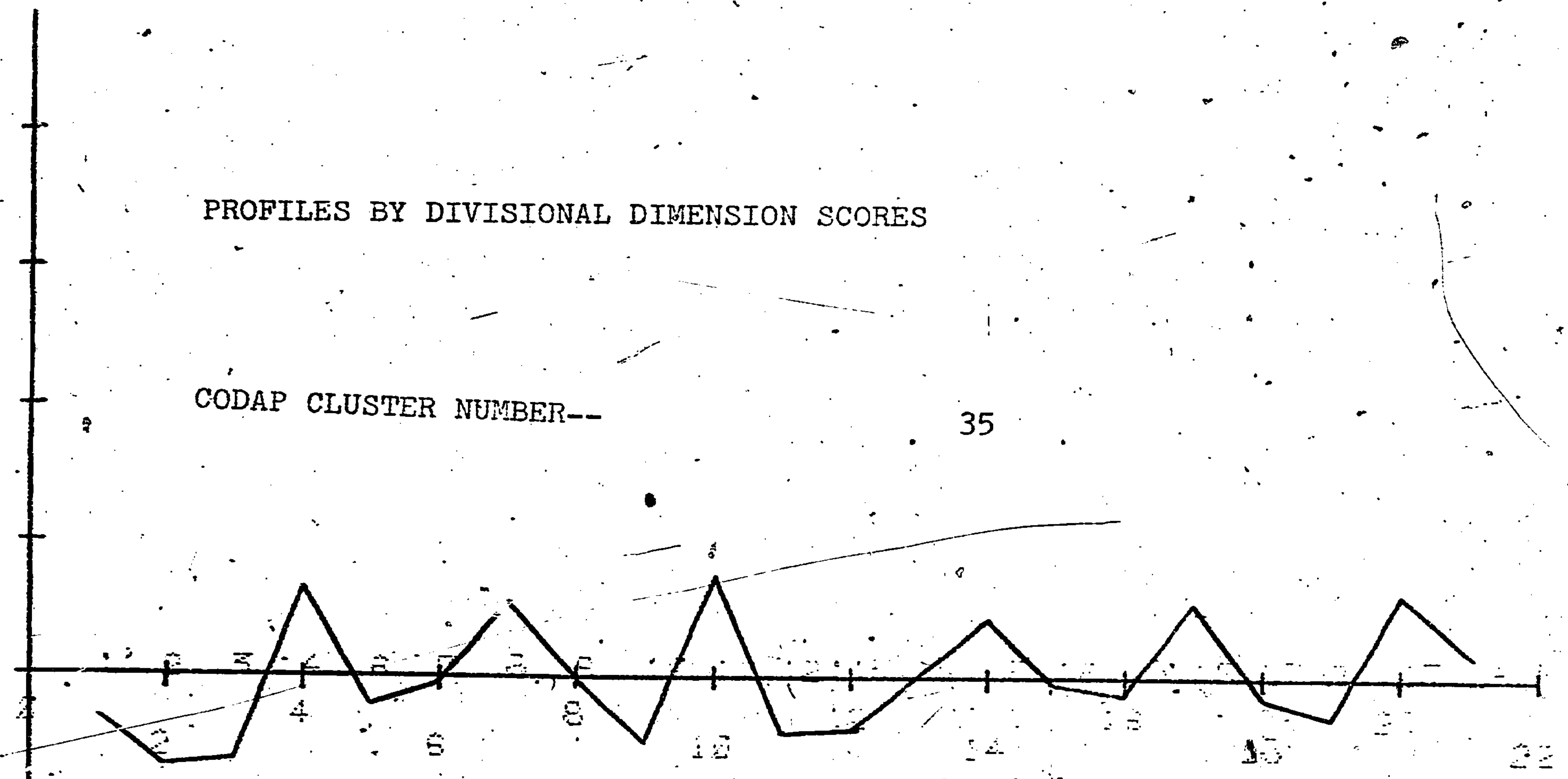
PROFILES BY DIVISIONAL DIMENSION SCORES

CODAP CLUSTER NUMBER-- 35



-.15	-.33	-.30	.33	-.10	-.02	.28	.01	-.24	.38	-.20	-.19	.02	.23	-.03	-.05	.28	-.07	-.14	.32	-.10
.63	.66	.92	.85	.85	1.00	.84	1.07	.99	.83	1.22	.96	1.02	.88	.63	.84	.50	.67	.89	.73	1.07
.78	.71	.34	.35	.55	-----	.48	-----	.12	.55	-----	.15	-----	.51	.77	.54	.85	.75	.43	.69	-----

PROFILES BY DIVISIONAL DIMENSION SCORES

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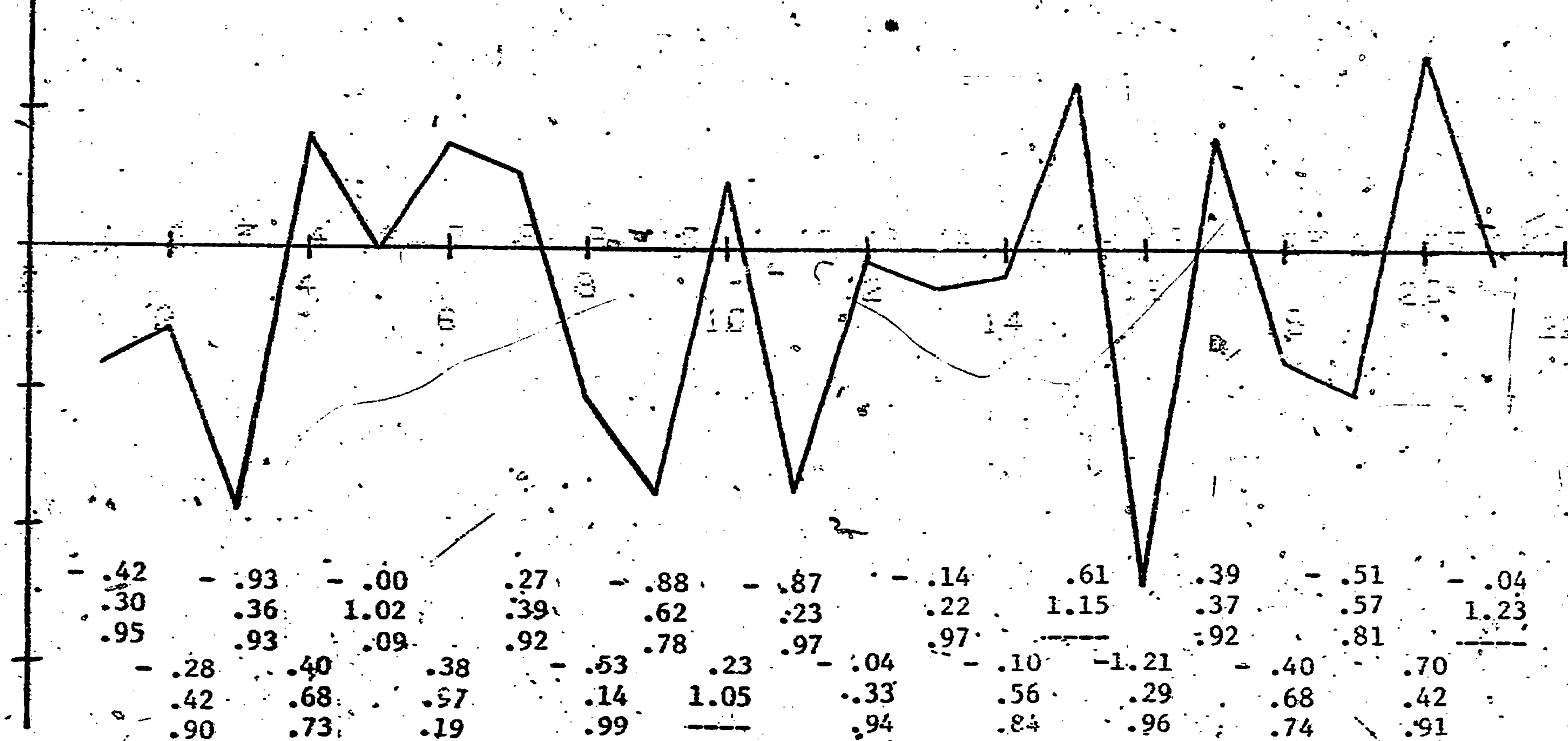

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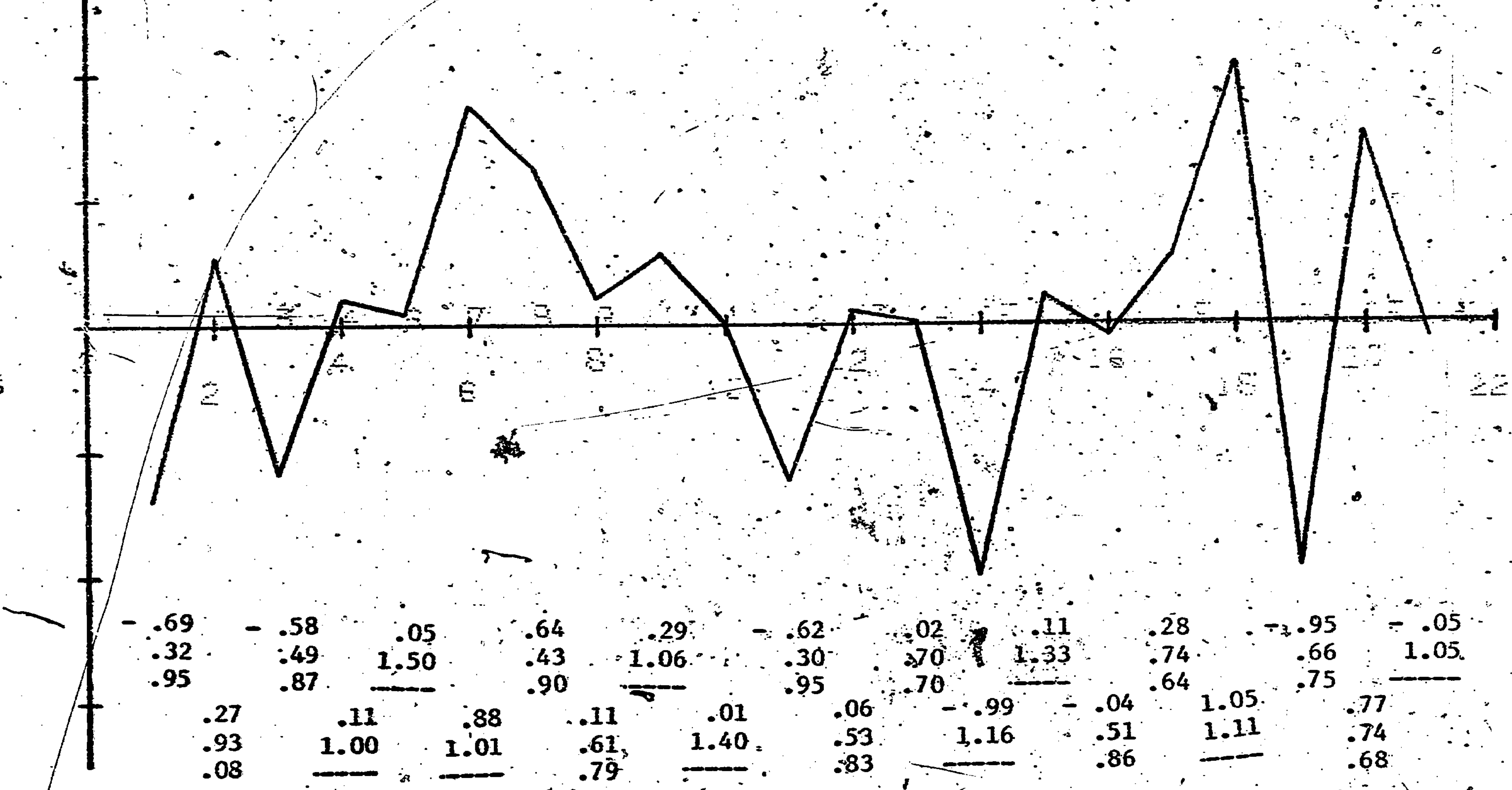

PROFILES BY DIVISIONAL DIMENSION SCORES

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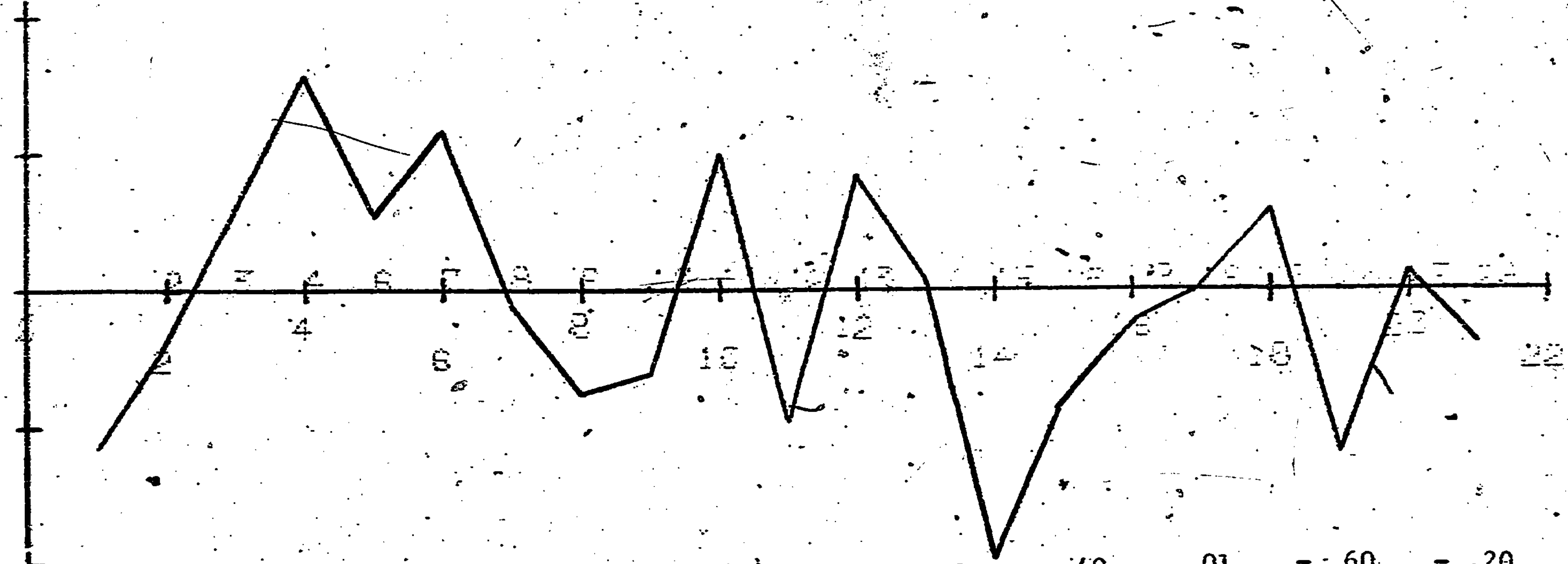

- .58	- .20	.31	.78	.27	.58	- .06	- .39	- .31	.48	- .48	- .41	.03	- .99	- .40	- .12	.01	.29	- .60	.07	- .20
.65	.78	.96	.73	.74	.97	.67	.53	.76	1.17	.63	1.30	.97	1.20	1.11	.75	.63	.82	.68	.72	.94
----	.74	.47	.85	.92	.58	----	----	.83	.69	----	.34	.97	----	.80	.39	.93	.78	.64	----	----

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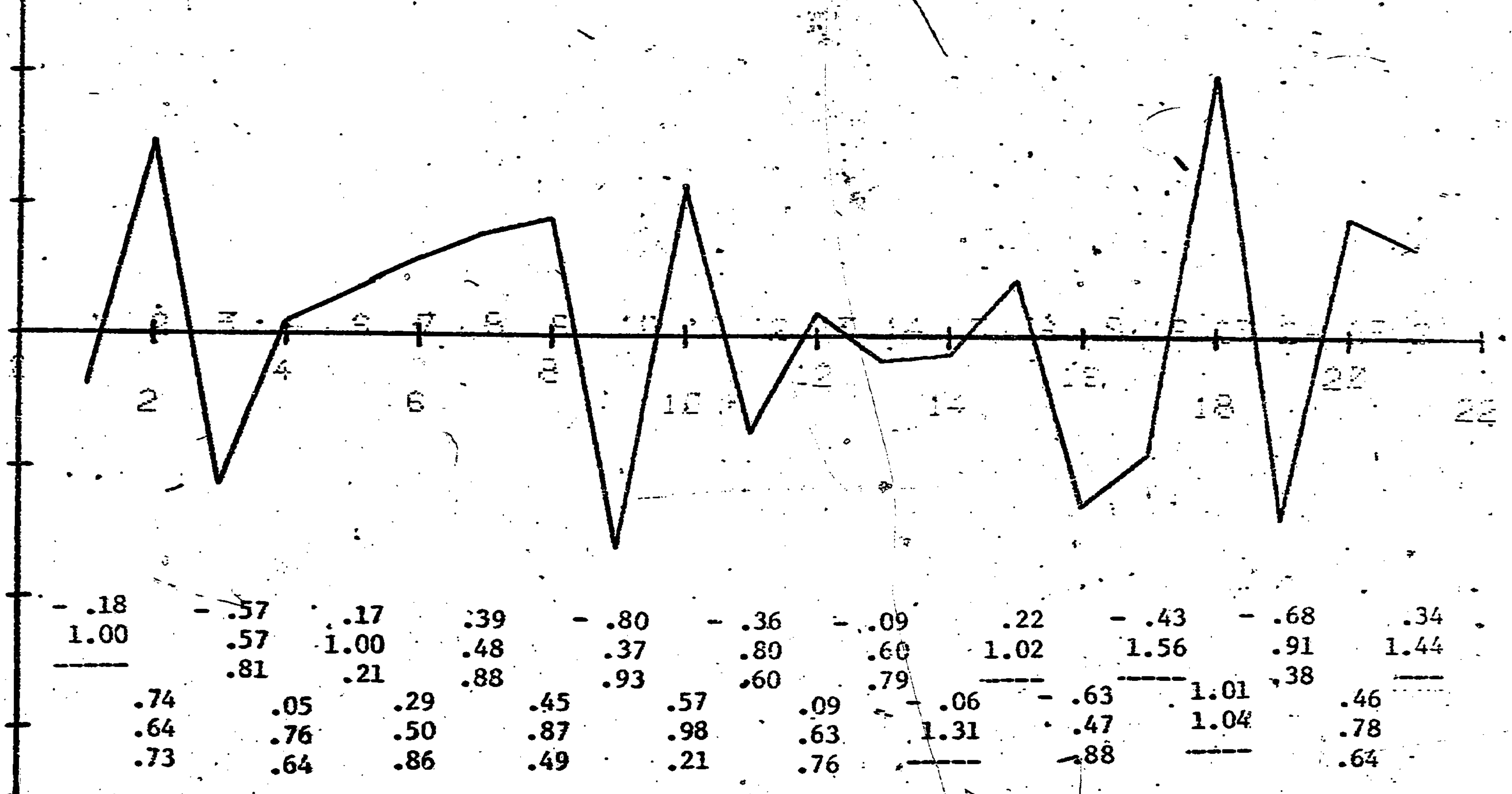

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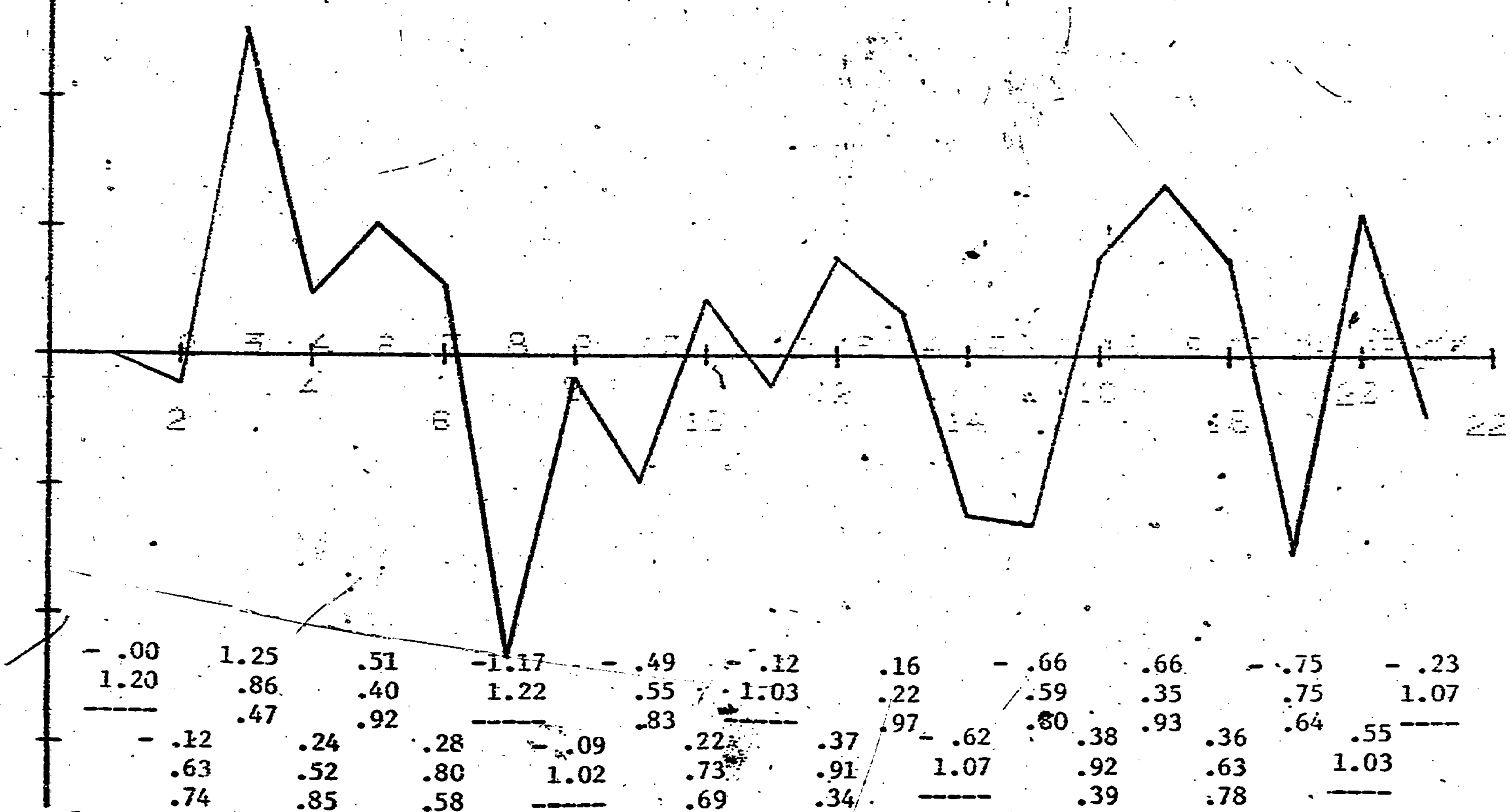

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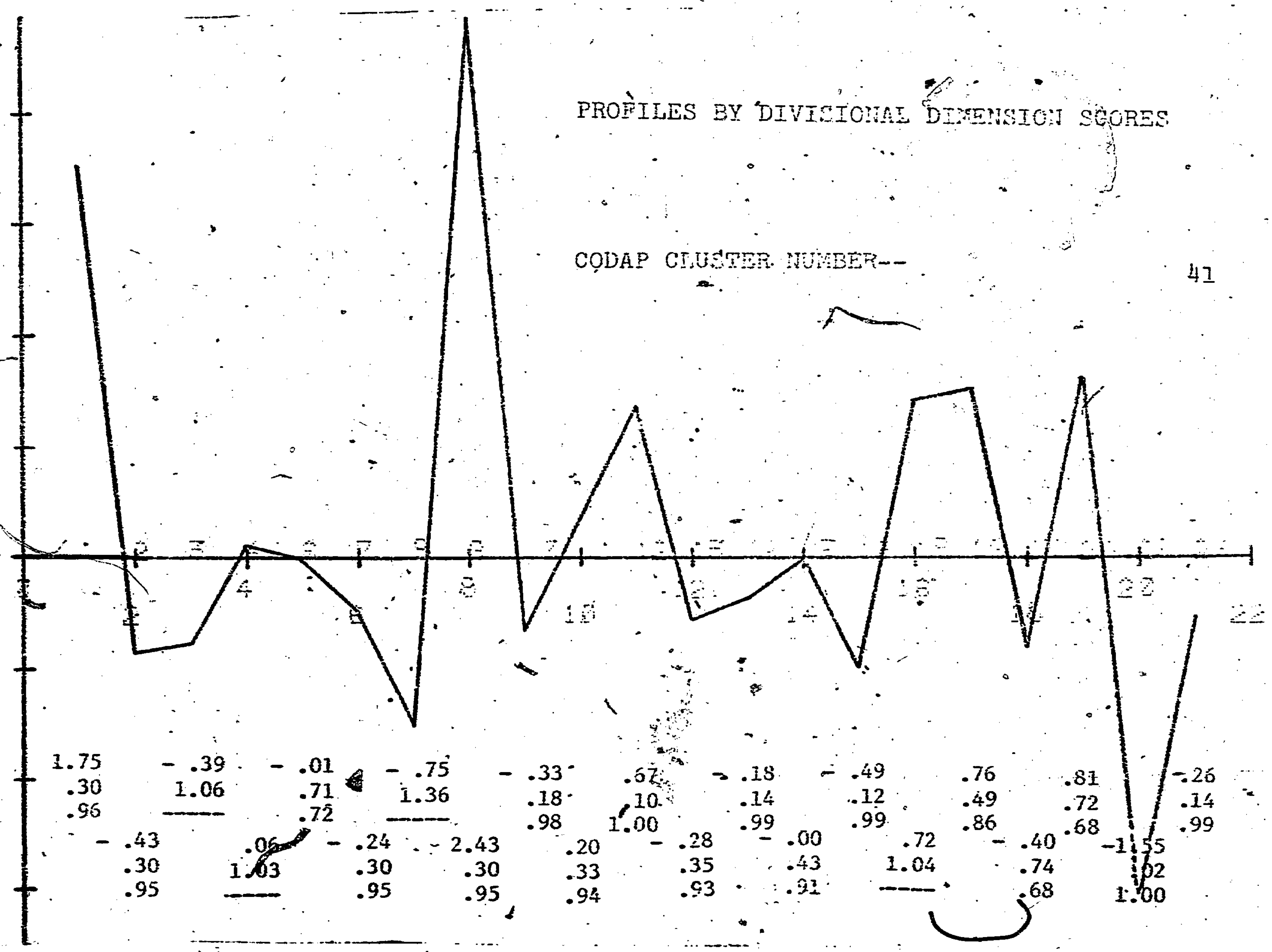

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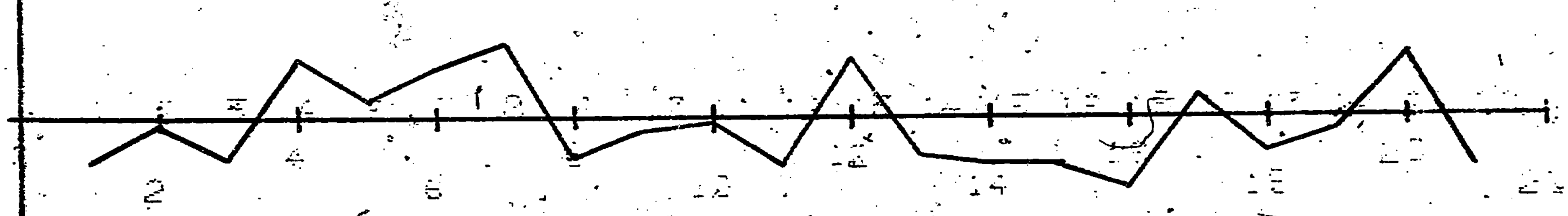

- .16	.95	.32
- .14	.91	.37
.21	.94	.29
.07	.95	.36
.19	.98	.02
.27	.84	.30
- .14	.94	.34
- .04	1.01	-----
- .01	.90	.44
- .17	.96	.29
.22	1.00	.25
- .14	.66	.74
- .02	.82	.49
- .18	1.05	-----
- .17	.93	.27
- .26	.80	.60
.09	.84	.47
- .12	.84	.55
- .04	1.02	-----
.23	.97	.30
- .18	.94	.39

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