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College Recruiting for Managerial Talent

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COLLEGE RECRUITING FOR MANAGERIAL TALENT

BY

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Purpose and Objective

The purpose of this thesis report is to make a critical examination of the basic factors, together with their interrelationships, which are involved in college recruiting of students with managerial potential.

The ultimate objective of this analysis is to provide a theoretical and factual basis for establishing or improving a managerial recruiting program.

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CHAPTER I

THE NEED FOR MANAGERS

Every organization whether its primary objectives are economic, political, social or religious must have good management. The task of constructing a better economic society, improved social standard, or more efficient government is the challenge to modern managerial ability.[1] Few people would argue about the importance of good management in any organization. No enterprise can long be successful that does not utilize effective management.[2]

In order for an organization to have effective management it is necessary to obtain, train and place highly qualified people in managerial positions. People are the life-blood of any enterprise. They are literally a company's most vital assets. The profitability, and even the survival, of an enterprise usually depends upon the calibre of its managerial resources and the effectiveness of their use.[3] As emphasized in the standard tests in management currently used, the procurement of top managerial talent should be considered a fundamental function of

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[1] G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964), p. 5.

[2] Ibid.

[3] R.A. Denerly, "Recruitment and Selection In a Full-Employment Economy", The Institute of Personnel Management, (5 Winsley St., Oxford Circus London, 1968), p. 7.

management. Obtaining the right person and placing him on the right job, are essential to effective management.[1]

One management consulting firm phrased it this way: "If a company would spend more time in its selection of future managers, then less time would be needed later in training, counseling and motivating their top management people."[2] Selecting and obtaining these highly qualified potential managers is not an easy matter.

In recent years the demand for skilled management personnel has exceeded the supply.[3] The demand for skilled managers has always been strong, but for the past several decades the executive manhunt has been accorded greater emphasis. Business firms, government, trade unions, universities and hospitals are prominent among the many different enterprises seeking top men to assume important assignments. Many factors have accelerated this demand for an increased number of capable men and women of outstanding executive and managerial ability. Among these factors are the growing complexities under which a modern manager must operate, the rapidity of changes in all fields of endeavor, the growth of the economy, and the growing awareness that an understanding both of practical and theoretical managerial problems, processes and practices are increasingly important. These factors have resulted in difficulty and more problems in acquiring qualified managerial and executive manpower.[4]

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[1]G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964), p. 332.

[2]Fred Smith & Associates Consulting Firm, Speech given before the Midwest College Placement Association, St. Louis, September, 1966.

[3]N.R. Maier, The Appraisal Interview, (John Wiley & Sons, Inc., 1966), p. 1.

[4]G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964), p. 333.

A great deal of work is currently being done in the management procurement area, however, at present there is no clear-cut picture of a precise universal manner in which management members can be located, hired and assigned by an enterprise.[1]

Preliminary to serious, intensive efforts in locating and hiring potential managers by a firm, a careful analysis should be made of its current and projected total manpower inventory. Koontz and O'Donnell suggest the following steps in analyzing a firms manpower requirements.[2]

1. Count the number of managerial positions that currently exist.
   a) This may be done through the use of a current organizational chart and careful interrogation of each department and staff head.
2. Take careful inventory of managerial talent.
   a) Determine the prospects for promotion.
   b) Determine the number and identity of employees who should be retained, but are not promotable.
   c) Determine the number and identity of those employees who should be terminated.
3. Estimate the turnover in managerial personnel.
   a) Such items as retirements, quits, leaves of absence and potential terminations must be considered.
   b) Estimates should be made on the basis of company history and records. If such figures are not available, data can be obtained from similar firms in the same labor market and geographic area.[3]
4. Decide upon the trainee to opening ratio i.e., 1:1, 2:1, or 5:1.

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[1] G.R. Terry, _Principles of Management_, (4th edition, Richard D. Irwin, Inc., 1964), p. 333.

[2] H. Koontz and C. O'Donnell, _Principles of Management_, (4th edition, McGraw-Hill Book Co., 1968)

[3] This ratio should be determined from the firms historical records on their attrition rate, leave of absence rate, quit rate, etc. This information is helpful in determining how many trainees should be started in the program to fill one future managerial opening.

By using an approach similar to the one outlined above, a firm can systematically analyze its current strengths and weaknesses in managerial depth and potential. Only after members of management have analyzed their firm's present and future needs can an effective program be designed to obtain the necessary managerial talent to fill these needs.

Sources of Managerial Talent

A firm may fill managerial openings from basically three sources:[1]

1. Promotions from within.
2. Acquisition of management members from other organizations.
3. College recruiting.

An important source of managerial talent for an industrial firm is the training and upgrading of existing employees. By utilizing information gained in manpower inventory programs, the firm is in an improved position to design effective managerial training courses for its employees.[2] After sufficient training and education is achieved the trainee is a prospect for a higher level of responsibility and authority. An obvious advantage of this method is the increased morale experienced by all employees when the opportunity to move to higher levels of management becomes apparent. A disadvantage to this method is the tendency to become in-bred with managers that lack the conceptual skills that come from broader academic programs.

The second method of obtaining managers is to hire experienced executives from outside the firm. The techniques for locating experienced talent are many and varied. A few techniques are listed as follows:[3]

[1]G.R. Terry, _Principles of Management_, (4th edition, Richard D. Irwin, Inc., 1964), p. 343.

[2]An excellent consideration of some typical illustrations, with a critical appraisal of basic factors involved, methods recently and currently used, is presented in Campbell, Dunnette, Lawler, Weick; _Managerial Behavior, Performance and Effectiveness_, (McGraw-Hill, 1970)

[3]R.H. Hawk, _The Recruitment Function_, (American Management Association, Inc., 1967), p. 35.

I.   Advertising

    A. Newspapers

    B. Technical Journals

    C. Direct Mail

    D. Radio and Television

    E. Outdoor (Billboards etc.)

II.   Employment Agencies

    A. Government Managed

    B. Private

    C. Search and Consulting Firms

III.   Technical Societies

IV.   Retiring Military Personnel

V.   Walk-in Candidates

VI. Employee Referrals

VII.   Letter Applicants

Presumably, an advantage in employing experienced executives is that it affords a firm a ready source of judgment—making skill and managerial know-how. This can be very important for a young industrial firm that does not have a good inventory of managerial potential or cannot afford to wait for the development of such talent. A disadvantage in hiring experienced managers is the detrimental effect that it may produce in numerous ways on employee morale. This must be taken into account if experienced managers are to be recruited from outside sources.

College recruiting, as the third source of managerial talent, has received increased emphasis by many firms. College graduates are located

and selected with the view of having them assume managerial jobs at some future date.[1] Some firms recruit college graduates for their technical abilities with little attention given to their managerial potential, with the hope that enough of the recruits will eventually succeed as managers. Still other firms recruit directly for managerial ability.[2]

College recruiting has become a very important source of future managerial talent for industry, government, education and other organizations. This important source of talent will be discussed in greater detail in chapter IV.

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[1]G.R. Terry, _Principles of Management_, (4th edition, Richard D. Irwin, Inc., 1964), p. 345.

[2]H. Koontz and C. O'Donnell, _Principles of Management_, (4th edition, McGraw-Hill Book Co., 1968)

CHAPTER II

THE DEVELOPMENT OF CRITERIA

FOR FILLING MANAGERIAL POSITIONS

Before a recruiter is able to identify potential managerial talent
from the college campus, or from other sources, he must clearly have in
mind the type of job he is seeking to fill. One method which is helpful
is to analyze the job in question and define its various characteristics.[1]

Once the job has been analyzed a more general abstract called
a job description can then be developed.[2]

Many firms already employ detailed job analysis and descriptions
for use in wage and salary administration. These job descriptions define
the duties and their interrelationships with the specific performances
expected of the employe on the job.[3] This is often necessary to determine

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[1]Webster's definition of job analysis is, "the determination of the
precise characteristics of a job or position through detailed observations
and critical examination of the sequential activities, facilities required,
conditions of work, and the qualifications needed in a worker. Usually
as a preparatory step toward a job description".

[2]Webster's definition of job description is, " an orderly record
of the essential activities involved in the performance of a task that
is abstracted from a job analysis and used in classifying and evaluating
jobs and in the selection and placement of employees".

[3]G.R. Terry, Principles of Management, (4th edition, Richard
D. Irwin, Inc., 1964), p. 345.

salary levels and areas of responsibilities. These job descriptions can also be used as an aid in the development of meaningful criteria.

The development of meaningful criteria for filling managerial vacancies is not an easy task. In order for the recruiter to be successful he should know what criteria are dependable in predicting the desired level or quality of managerial performance. One method for achieving this is through the use of approved validation procedures. Great care must be taken to insure that the validation techniques used are dependable in predicting job success and performance. For example some tests for pilot's performance in pilot school may have high technical validity, however the predictive validities of test results reported for many vocations today are little, if any, higher than those reported fifteen years ago.[1] This is true as it applies to industry and the business world.[2] Tests have been devised to predict what an employee's supervisor thinks of him, however, this in reality is not necessarily a true predictor of performance.[3] A major shortcoming with traditional validation procedures is that classical valid- ation models concerned with a simple correlational relationship between predictors and work performance criteria is in many instances not flexible enough to take into account the complexities of human behavior and the complexities of variables determining performance level on the job.[4]

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[1] It should be noted, however, that new scoring keys are being devised for many of the standardized tests with the result that scores obtained through their use have in some instances not only high predictive validity but as high as, or higher than, other criteria utilized. (See Campbell, Dunnette, Lawler, Weick, Managerial Behavior, Performance, esp. pp. 128-134)

[2] S.R. Wallace, "Criteria For What?", American Psychologist, Vol. 20, (1965), p. 411-417.

[3] Ibid.

[4] S. Biesheuvel, "Personnel Section", Annual Review of Psychology, Vol. 16, (1965), p. 295-324.

Nevertheless, in spite of this shortcoming in validation procedures some authors have observed that even the rawest form of situational empiricism seems to result in better prediction than more sophisticated psychological theory.[1] Therefore, validation procedures still appear to be useful if one is aware of their limitations.

Once meaningful job criteria have been established certain job requirements can then be developed.[2] These job requirements should be stable, possess content representativeness, reflect temporal changes in job success and accurately indicate success as measured by achievement of goals.[3] An example of such a set of requirements is given below.[4]

Special Requirements

1. Personal Qualifications - age, sex, marital status, physical condition and appearance required.
2. Education -- major courses of study, degrees obtained and professional licenses.
3. Experience - level, quality and amount of time involved.

General Requirements

1. Initiative - originality, inventiveness, resourcefulness, enthusiasm, willingness to accept responsibility and motivation.

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[1] R.M. Guion and R.F. Gottier, "Validity of Personality Measures In Personnel Selection", Personnel Psychology, Vol. 18, (1965), p. 139-164.

[2] The term requirements here refers to a set of predetermined, validated, conditions which are desirable for the successful performance of a certain job.

[3] M.D. Dunnette and W.K. Kirchner, Psychology Applied to Industry, (New York, Appleton-Century-Crofts, 1965)

[4] F.M. Lopey, Jr., Personnel Interviewing, (McGraw-Hill Book Co., 1965)

2. Technical Competence – analytical ability, technical knowledge, problem solving ability and self expression ability.

3. Interpersonal Competence – ability to relate effectively with other people; To supervise them and to work as a team member.

4. Reliability and Stability – temperamental qualities, maturity, conscientiousness, persistence and dependability.

5. Organizational Identification – loyalty, self discipline, adherence to established order.

Such a list of requirements could be made for any job and expanded to include all parameters desired. Occasionally a manager of a department will give a list of such requirements to a recruiter based upon what he "thinks" or "feels" is necessary for job success. A study was conducted in which Sales Managers were asked to outline the critical behavioral performance factors in successful salesmanship. Their replies yielded the following categories of factors in successful selling.

1. Planning ahead.

2. Communicating important information to sales managers.

3. Being truthful with customers and managers.

4. Carrying out promises.

5. Persisting with tough customers.

6. Following up
   a)   on customers complaints,
   b)   on special requests,
   c)   on orders,
   d)   on leads for new business.

An important point drawn by the researcher was that none of the factors includes actually bringing in business or signing the order. Instead, the critical factors describe behaviors which, it is presumed, will result in high sales volume. The researcher further concluded that it is unrealistic to seek any single measure of successful job performance, but rather to view the entire analysis as a complex system with many integral and interrelated parts.[1]

It appears that one method of developing job criteria is to analyze the job, develop the pertinent job requirements and use only those factors necessary for successful job performance.

Another method of developing criteria for filling managerial vacancies is by seeking those traits and personality characteristics commonly regarded as synonymous with good leadership and sound management. Currently the common traits of an executive are usually expressed in such general, non-specific terms that they cannot be used in any precise manner. It is best to view them as a composite. A deficiency in these qualities probably means the candidate is not highly suited for executive work, but, at the same time favorable appraisals do not necessarily insure executive success by the candidate. Five such qualities are as follows:[2]

1. He must have a high degree adaptability to a great many different conditions.
2. He must have the ability to wield power and influence members of a formally organized group.

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[1] M.D. Dunnette and W.K. Kirchner, Psychology Applied to Industry, (New York: Appleton-Century-Crofts, 1965)

[2] G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964)

3. He must be able to concentrate on important matters.

4. He must be able to determine what is important and
   what is not important.

5. He is objective rather than subjective.

This list of executive qualities could be expanded many times, however the important point is that the recruiter should be cognizant of such qualities and attempt seriously, and as objectively as possible to identify in recruitees those attributes which are most desired in prospective managers. Other executive employment criteria fall in categories such as physical characteristics, abilities and skills, personality and interests. An expansion of these concepts follows:[1]

I. Physical Characteristics
   A. Vitality
   B. Energy
   C. Physical Endurance
   D. Overall Health

II. Abilities and Skills
   A. Intellectual and Mental Abilities
   B. Abstract Reasoning
   C. Mental Flexibility
   D. General Ability to Learn
   E. Problem Solving Ability
   F. Empathic Ability
   G. Verbal Ability (Communication)

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[1] H. Koontz, A Book of Readings, (McGraw-Hill Book Co, 1964)

III. Personality
   A. Ambition, Motivation, Drive-to-Achieve, Energy
   B. Self Confidence, Social Poise, Freedom from Inferiority, Maturity, Emotional Stability
   C. Courage and Decisiveness
   D. Integrity, Character and Ethical Standards

Knowledge of desirable personal characteristics can aid a recruiter in the selection of future managers.

In the area of executive interests, studies have been made of means to be used in identifying those activities which are more largely characteristic of successful managers. One study, for example, points out that an effective manager has interests in practical matters and in literary and persuasive activities while having a lack of interest in mechanical, technical, and social service activities.[1] Thomas H. Jerdee pointed out that interests of effective managers are similar to interests of managers in sales, purchasing, and manufacturing company presidents.[2] Mahoney and Nash point out that interests of effective managers are dissimilar to the interests of men engaged in the biological sciences and in the technical crafts.[3] Still another study by Mandell shows effective managers have high economic and political interests and relatively low aesthetic interests.[4]

A recruiter seeking managerial talent must be knowledgeable and aware of many contributing factors. The effectiveness of his efforts is

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[1] H. Koontz, A Book of Readings, (McGraw-Hill Book Co., 1964)

[2] Ibid.

[3] Ibid.

[4] Ibid.

contingent upon his understanding of his organization, its management, the job criteria, job requirements and qualities that make a good manager. In short he must know what he is looking for and how to find it. He must be able to evaluate the total person in relation to his predetermined job criteria. A recruiter must be flexible and should be able to judge when one criterion is more important than another. There is no set pattern of requisite human attributes for a given job.[1] For example, a lack of formal education in some managerial positions may be more than offset by an unusually varied and broad life experience. Deficiencies in grades or intellectual depth can be compensated by an abundance or persistence, dedication, motivation and energy. For some defects there is no compensation. For example, a lack of ambition or drive cannot be offset by a high level of intelligence or by a scintillating personality. Job knowledge and skill cannot overcome personal maladjustment. Therefore, it appears that an employee's success may be attributed in part at least to his unique combination of personal characteristics. No job specification that merely lists a series of personal traits and the minimum requirement on each is sufficiently flexible to be adequate.[2] Therefore, the challenge to the recruiter becomes a total evaluation of the individual in relation to the total criteria for job success. Once he has determined the kind of person he is seeking he must next determine the selection techniques necessary to find this individual.

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[1] F. M. Lopey, Jr. Personnel Interviewing, (McGraw-Hill Book Co., 1965)

[2] Ibid.

CHAPTER III

TECHNIQUES FOR SELECTING MANAGERS

Three methods to be discussed in this chapter for selecting future managers are the standardized written test, the application form[1] and the employment interview. All three selection methods may be extremely effective or grossly ineffective depending upon the administration of the particular device and the interpretation of its respective data.

Tests

Testing procedures are very convenient, easy to administer and usually allow the personnel manager to perform other tasks while the applicant is being tested. However, some experienced executives and recent college graduates resent taking the test. They may feel that their past experience or academic preparation is sufficient and further testing is a waste of their time. Tests, if properly used with the correct validation procedures, can be effective tools for the selection of future employees. A study of 443 managers working for a well known oil company was established to measure effective management as a function of success on the job.[2] Success in this study was measured by the position level, salary history, and the executive's effectiveness rating combined into an overall success index. The test was then given to successful managers of the firm and also to young

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[1] This term is also intended to include other written devices such as the resume, personal data sheet or college interview form.

[2] M.D. Dunnette, Personnel Section and Placement, (2nd printing, Wadsworth Publishing Co., Inc., 1967), p. 69.

potential managers. The data was correlated and after a time the results did yield a high level of predictive accuracy (R= .70) for the young manager on the job. Many such studies could be cited and also many failures; however, the important point is that the written test can be a valuable predictor of success and an important selection technique if utilized properly and kept in perspective.[1]

One danger in testing is that the test may not be measuring the relationships that the administrator assumes it is measuring. For example, suppose a test gets significant or nonsignificant validation. This does not mean that the attribute is important for performance.[2] Thus, it is possible for an administrator to misinterpret test results.

Another problem with tests is that there are many intervening variables and gaps between ratings assigned on the basis of test measurements and behavior on the job. A tested job interest does not necessarily mean action in the area of tested interest.[3] For example, a man may exhibit a great interest in becoming a mechanic and may have a high degree of mechanical aptitude, however this does not indicate how well he will perform on the job. This type of information will have to be drawn out and interpreted during an interview or in other phases of the selection process.

The Application Form

The application form, or resume, is more or less taken for granted in the employment situation. Except for the interview this is probably one of the oldest devices for obtaining information about a person. It is used to provide the company with a permanent record of the employee's background and is used in the selection process.

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[1] An extended critical discussion of other research studies in other companies is presented in Chapter 8 of Campbell, Dunnette, Lawler, Weick, Managerial Behavior, Performance and Effectiveness, (McGraw-Hill, 1970)

[2] S.R. Wallace, "Criteria For What?", American Psychologist, Vol. 20, (1965)

[3] B. Balinsky, "Some Experiences and Problems in Appraising Executive Personnel", Personnel Psychology, Vol. 17, (1964), p. 107-114.

Much can be learned about an applicant from his resume or application. Such items as frequency of job change, quantity and quality of education, extra curricular activities and general overall data pertaining to his background. If skillfully used the application can supply the interviewer with personal data thus allowing him to spend more time in the interview obtaining obscure and subtle information which cannot be readily written on a form. The application also tends to guide the recruiter in conducting his interview by calling attention to items he may wish to have amplified. When this occurs questions may arise and information may be obtained that might not have been drawn out without the application.

There is danger in using the application during an interview as it can actually detract from the selection process. This is apparent in the situation where the interviewer devotes more attention to the application than to the applicant. An indirect manner in which the application detracts from the interview results was pointed out in a study by Springbett.[1] He shows that when the application form is examined before the interview, the positive or negative bias is stronger than when viewed after the interview. He further indicates that the interview is most likely to contribute significantly to the decision if the interviewer does not begin the interview with a confident mental set of predetermined thinking. Springbett concluded that the interviewer should enter the interview without seeing the application. This is difficult in a short employment interview situation since most of the time would be taken in obtaining routine personal data previously written on the application. It appears that the application is another tool for the selection of personnel and, if tempered with knowledge of its limitations, it can be used to supplement and aid the actual interview.

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[1] E.C. Webster, Decision Making in the Employment Interview, (Montreal, Canada: McGill University, Industrial Relations Center, 1964)

The Technique of Interviewing

Interviewing has been used as an information gathering device since man first learned to communicate. The interview has been defined as a conversation directed to a definite purpose other than satisfaction in the conversation itself.[1]

The technique of interviewing has been used for many purposes. However, until recent years, very little scientific work has been done concerning the interview situation.[2] Since 1949, however, much research has been done concerning the interview with some conflicting results and conclusions. Some authors have hailed the interview as a very effective device for obtaining information while other researchers conclude that we really know little about the interview situation.

Over the last few years the selection interview has been subjected to a great deal of criticism. Most of this criticism has stressed a general lack of evidence concerning the interviews reliability and validity.[3] This comes from the lack of comparability between studies and an over-dependence on research results in other areas. It is possible to show that an interview works in one particular case, however, due to the lack of comparability between studies it does not tell us why a given interview works or does not work. One reason given for the lack of comparability between studies is the absence of controls and the fact that different interviewing methods were used.[4]

[1]Walter VanDyke Bingham & Bruce Victor Moore, How to Interview, (4th revised edition, New York: Harper Bros., 1959)

[2]R. Wagner, "The Employment Interview", Personnel Psychology, Vol. II, (1949), p. 17-46.

[3]E.C. Mayfield, "The Selection Interview", Personnel Psychology, Vol. 17, (1964), p. 239-260.

[4]E.C. Mayfield & R.E. Carlson, "Selection Interview Decisions", Personnel Psychology, Vol. 19, (1966), p. 41-53.

In spite of the criticisms concerning the interview, no researcher
(to this writer's knowledge) has advocated the abolition of this employment
technique. Some authors, appalled by the lack of scientific evidence
regarding the interview situation, have suggested a moratorium on the
do's and don'ts of interviewing until further research can be performed.[1]
Nevertheless, books continue to be written on the subject in spite of
this proclaimed lack of scientific evidence.

The situation is not as dark as it may seem. Current studies have
shown that interviewing under the proper circumstances can be a valuable
selection procedure. There have been numerous research findings that
have received support from more than one study.[2]

One such common finding is that multiple interviews for the most
part have greater predictive value than a single interview. Interviews of
507 applicants applying for the position of stock broker were conducted
by a psychologist after they had been previously screened by a personnel
man and a top manager.[3] The coefficient of correlation between the crite-
rion of success on the job and the interview ratings for 275 men was
found to be .35. While modest in magnitude it compares favorably to
tests and interviews of other types and forms. Another author pointed
out that multiple independent evaluations in which two or more interviewers
record decisions independently often prevents complacency on the part
of the interviewer hence increasing his overall effectiveness.[4]

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[1] G.W. England & D.G. Patterson, Employment Relations Research,
Chapter II

[2] E.C. Mayfield, "The Selection Interview", Personnel Psychology,
Vol. 17, (1964), p. 239-260.

[3] Edwin E. Ghiselli, "The Validity of a Personnel Interview",
Personnel Psychology, Vol. 19, (1966), p. 389-394.

[4] E.C. Webster, Decision Making in the Employment Interview,
Montreal, Canada: McGill University, Industrial Relations Center, 1964)

Thus it would appear that the old adage of two heads being better than one is also applicable to interviewing.

Another common conclusion that has evolved from recent research is that the more structured an interview, the more effective it tends to be.[1] Other studies cited in Mayfield concluded that an unstructured interview as normally conducted in a selection situation is of little value.[2] One reason given for this is that in an unstructured interview the material is not consistently and uniformly covered. According to conclusions reached in a review of research by Webster the technique of interviewing should become more systematic and probing.[3] Other studies concluded that the most effective interviews are those which are systematic, designed, structured or guided.[4] Thus from the studies cited it appears that a structured interview is more effective than one which is unstructured.

Other conclusions regarding interviewing can be drawn from studies performed since 1949. Some conclusions drawn by E. C. Mayfield are as follows:[5]

1. An interviewer can rate the same interview twice with fairly consistent results.

2. An interviewer is consistent in his approach to different interviewees.

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[1] E.C. Mayfield, "The Selection Interview", Personnel Psychology, Vol. 17, (1964), p. 239-260.

[2] Ibid.

[3] E.C. Webster, Decision Making in the Employment Interview, (Montreal, Canada: McGill University, Industrial Relations Center, 1964)

[4] L. Ulrich and D. Trumbo, "The Selection Interview Since 1949", Psychological Bulletin, Vol. 63-64, (1965), p. 100-116.

[5] E.C. Mayfield, "The Selection Interview", Personnel Psychology, Vol. 17, (1964), p. 239-260.

3. Although the reliabilities of interviews may be high in given situations the validities obtained are usually of a low magnitude.

4. The form of the question does affect the answer obtained.

5. The attitudes of the interviewers do affect their interpretation of what the interviewee says.

6. In the usual unstructured employment interview, the interviewer talks more than the interviewee does.

7. Interviewers appear to be influenced more by unfavorable than favorable information.

8. Interviewers tend to make their decision early in an unstructured interview.

E. C. Webster in his summary of many studies made the following conclusions.[1]

1. Interviewers develop a stereotype of a good candidate and seek to match men and stereotypes.

Mayfield and Carlson further define this stereotype process into two types; common and specific.[2] The common stereotype consists of those individual characteristics both favorable and unfavorable on which there is inter-interviewer agreement. The second part consists of a specific stereotype which is _different_ for _different interviewers_. Thus, any one interviewer's overall stereotype of an ideal applicant will consist of the "common" stereotype defining one set of requirements plus his own "specific" stereotype which adds another set of requirements.

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[1] E.C. Webster, _Decision Making in the Employment Interview_, (Montreal, Canada: McGill University, Industrial Relations Center, 1964)

[2] E.C. Mayfield and R.E. Carlson, "Selection Interview Decisions", _Personnel Psychology_, Vol. 19, (1966), p. 41-53.

2. A bias is established early in the interview and this tends to be followed either by a favorable or by an unfavorable decision.

3. Interviewers are more influenced by unfavorable than by favorable information.

4. Interviewers seek information to support or refute hypothesis and when satisfied turn their attention elsewhere.

5. Empathy relationships are specific to individual interviewers.

6. Feeding information to an interviewer piece by piece affects the decision.

7. Experienced interviewers rank applicants in the same order although they differ in the proportion they will accept.

These conclusions are interesting, but valuable only if used by an interviewer to better understand the interviewing process and hence to increase his own overall effectiveness.

The interviewer may be his worst enemy. His efforts towards objectivity will be ineffective to the extent he allows prejudice or bias to distort his judgment. Almost everyone has some prejudices. Though the interviewer will not rid himself of them completely, he should strive to be aware of them.[1] Interviewer bias and prejudice, as mentioned in the conclusions by Webster and Mayfield, appear to be important considerations in the subject of interviewing.

Bias and prejudice result partly from the cultural and environmental influences in which a person has been brought up and partly from the way in which he has reacted to those background influences.[2] Inevitably, the interviewer's attitudes towards work and towards society

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[1] R.A. Denerly, "Recruitment and Selection In a Full-Employment Economy", The Institute of Personnel Management, (5 Winsley St., Oxford Circus London, 1968), p. 91.

[2] Ibid.

reflect his own background to a greater or lesser extent. In order to judge fairly what kind of a person the candidate really is, the interviewer needs to discount his likes and dislikes and to examine impartially the other person's background and attitudes.[1] Frequently, he will find that the candidate's background and his own have certain features in common. If the candidate's reactions to them appear to have been similar to his own, the interviewer is biased in favor of him; conversely, if the candidate's reactions run counter to the interviewer's, he will be biased against him. Judgment can be influenced in this way without the interviewer being conscious of it.[2]

A more subtle source of error is known as halo effect. This occurs when the interviewer, having been favorably or unfavorably impressed by one attribute of the candidate, allows his judgment of the candidate's other attributes to be swamped or assigns to them correspondingly high or low ratings. Thus an interviewer confronted, for example, by a candidate whose appearance and bearing seem to be ideal for that job may give him credit for more experience or intelligence than he really possesses. If most of the other applicants for the job have already been eliminated, the interviewer may be especially prone to this form of halo effect.[3]

The understanding of these and other phenomena in the interviewing process is a starting point to train interviewers to be more objective. Only by full understanding the limitations of interviewing and applying this knowledge can the most effective techniques be developed.

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[1] R.A. Denerly, "Recruitment and Selection In a Full-Employment Economy", The Institute of Personnel Management, (5 Winsley St., Oxford Circus London, 1968), p. 91.

[2] Ibid.

[3] Ibid, p. 92.

CHAPTER IV

COLLEGE RECRUITING

Stated earlier in chapter I college recruiting has become a prime source of future managerial talent for many organizations. The demand for qualified college graduates during the last few years has greatly exceeded the supply. This has been particularly true for those graduates trained in engineering, management or the sciences. An estimated 36,000 engineering students received their first degree in 1968 from approximately 240 engineering schools.[1] Among these students only one half will make the transition from university life to permanent employment, cutting the available figure to 18,000. This loss of 50 percent is largely attributable to graduate school and the military draft.

During this same period the demand for engineering graduates was approximately 85,000.[2] When compared to the available supply of only 18,000 it is clear that the demand definitely exceeds the supply. This situation has existed since 1958. Frank F. Endicott's annual survey of 210 well-known business and industrial companies indicated that the demand in 1966 was up 60 percent for engineers at the bachelor degree level and 25 percent for non-engineering students.[3]

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[1] U.S. Office of Education, Engineering Manpower Bulletin, No. 17, (Washington D.C.: Government Printing Office, September, 1967)

[2] Ibid.

[3] Frank F. Endicott, Trends in Employment of College and University Graduates in Business and Industry, (20th Annual Report, Evanston, Illinois: Northwestern University, 1966)

In view of the supply and demand situation for qualified college graduates, a firm must implement a responsible, effective and aggressive recruiting program to attract the potential manager. The days of sitting back and waiting for candidates to apply have faded from the recruitment picture. Today, the best men no longer hunt jobs; the jobs hunt them.[1] A highly sought after student may find himself interviewing the recruiter instead of vice versa. In this instance the recruiter finds himself in a selling situation and should pursue this goal with the same vigor and imagination that the salesman employs in selling the firm's products.[2]

There have been two major areas of influence that have entered into much of our thinking regarding the process of recruiting and managing.

One area of influence became articulate through the early work of what is now referred to as the Human Relations philosophy particularly in the hands of Mayo, Roethlisberger and Dixon. This philosophy has emphasized the individual and his important role in the overall success of the organization. It has been through this area of influence that contributions toward the realization that staffing an organization with qualified people is a basic responsibility of management.

The second area of influence may be referred to as the "systems approach" to managerial activites. This area of influence has come into the picture through the works of a number of persons, but particularly through Bertolanffy, and Johnson, Kast and Rosenzweig.[3]

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[1]G.R. Terry, _Principles of Management_, (4th edition Richard D. Irwin, Inc., 1964), p. 345.

[2]H. Koontz and C. O'Donnell, _Principles of Management_, (4th edition, McGraw-Hill Book Co., 1968)

[3]For a typical introduction to this influence and its application to management, see F.E. Kast and J.E. Rosenzweig, "A Systems Approach", _Organization and Management_, (McGraw-Hill Book Co., 1970), Chapter 6.

A significant result of this area of influence has been in making management aware of the influence of certain socio-technical environmental variables being exerted on the organization at all times. These forces effect all areas of the organization including the staffing or recruiting function.

For example the attitudes of many of today's college students towards industrial organizations are more critical than those of students only a few years ago. Thus, the current recruitee population represents a type of sub-system which exerts an outside force upon the organization.

With such outside forces being exerted upon the corporation, success in recruiting candidates from colleges depends upon many factors, but foremost appear to be the skill of the recruiter and the reputation of the company. The recruiter is a key person in college recruiting. His knowledge of the company, of the university as a marketplace and especially of the jobs he is seeking to fill is highly significant.[1] Many times the recruiter is the only criterion the student has for evaluating the company and forming an opinion. This first impression of the company can be very lasting and its importance cannot be over-stressed.

Since the only exposure the college student has to the corporate recruiter is during the campus interview this particular phase of college recruiting takes on significant meaning. Theoreticians and college recruiters often agree that the campus interview is a very important if not the greatest single factor in college recruiting.

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[1] G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964), p. 345.

In the later part of chapter III much theoretical discussion was made concerning selection techniques in general and interviewing techniques in particular. Some of these theories involved interviewer stereotypes, (both common and specific) interviewer bias and prejudice and a more subtle source of error known as halo effect. Each of the above factors tend to detract from the interviewer's overall effectiveness and consequently the interviewer should be aware of their existence. These theories are helpful in obtaining a better understanding of the interviewing process, however, they are rather sterile until demonstrated in an actual environment. It is possible for an interviewer to spend a lifetime developing interviewing techniques, yet he may never be able to adequately measure his effectiveness. Since the technique of interviewing is extremely important in the overall college recruiting process an attempt to examine certain interrelationships that are pertinent to the campus interview would appear beneficial. The remainder of this chapter is devoted to the description of a study undertaken to examine these interrelationships.

A STUDY OF THE CAMPUS INTERVIEW

The following study is divided into three sections. Section one deals with the interrelationships found to exist between certain items of information taken from the student's resume. Such items include the students grade index, the percentage of his expenses earned, the number of campus activities, the number of months worked and age. These items have been statistically correlated and their interrelationships are discussed. Sections two and three respectively deal with the previously discussed topics of halo effect and interviewer differences.

To study these interrelationships an analysis was made of a large decentralized corporation using six men as full time corporate recruiters. Only four of the six interviewers were studied in this research because

of the availability of data. These four recruiters (1,2,3,4) conducted 800 interviews at 37 colleges and universities throughout the midwest.[1] Table number one indicates the number interviewed at each respective campus.

TABLE 1
(See Appendix)

Only those students graduating in the academic year 1967-1968 and seeking their baccalaureate degree were included in the study. All diciplines were involved in the interviews, however the majority of students were studying engineering, science, or business administration.

Each interviewer was asked to rate the students in the following five areas.

1. Scholastic Rating
2. Campus Activities
3. Work Experience
4. Personal Characteristics
5. Interviewer's Overall Rating

All interviewers used the scale ranging from Below Average to Outstanding, however, in practice this was expanded by the use of plus and minus signs.

TABLE 2
(See Appendix)

In addition to the qualification summary each interviewer was given a personal data sheet for every student interviewed. These vary somewhat between universities, however, most schools have adopted the form used by the college placement council.

TABLE 3
(See Appendix)

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[1] This writer appears as interviewer 3.

The method chosen to examine the data from the resume, along with the interviewers subjective rating, and compare them in a meaningful fashion was a ten times ten (x) correlation matrix comprised of the parameters in question.

TABLE 4

(See Appendix)

By using this correlation technique the interrelationships were studied and hopefully a greater understanding among these parameters has been gained not only concerning the interviewers subjective ratings, but also the relationship between grades, campus activities, work load, etc., of the college student.

Data

In order to obtain this correlation analysis from the interviewer's subjective ratings, it was necessary to transform them into numbers which in turn could be fed into the computer. It was also necessary to quantify in numerical form the data presented on the student's resume.

Interviewer Ratings

A scale was established ranging from 1 to 15 corresponding to the following ratings.

TABLE 5

NUMERICAL CODING OF INTERVIEWER'S RATINGS

BA - Below Average   AA - Above Average

A - Average   E - Excellent

O - Outstanding

1	2	3	4	5	6	7	8	9
BA–	BA	BA+	A–	A	A+	AA–	AA	AA+

10	11	12	13	14	15
E–	E	E+	O–	O	O+

By the use of such a scale it was possible to achieve the desire-able range and dispersion of data necessary for a correlation analysis. Thus, by correlating these ratings it could readily be seen the interrela-tionships of each rating and its possible effect upon the interviewer's overall rating. Also interviewer differences could be noted.

Information from the Resume

In order to examine the interrelationships present on the resume it was necessary to quantify certain data so they could be programmed into the computer. To do this 800 resumes were screened for five items of information.

1. Grade Index
2. % of Expenses Earned
3. Number of Campus Activities (non-honoraries)
4. Number of Months Worked
5. Age (in months)

Grade Index

The grade index was coded directly into the computer on a
4.00 basis. Thus if a student had an index of 2.85/4.00 the computer
simply saw it as 2.85. In the case of Purdue University which operates
on a 6.00 system, two points were subtracted from each index. If a
student from Purdue had a 5.25/6.00 this was converted to read 3.25
on the corresponding 4.00 system. Similarily, a one was subtracted from
each index at the University of Illinois which operates on a 5.00 system.

This method obviously does not account for the varying academic
standards at each university, however, this was discounted for the purpose
of this study.

Percent of Expenses Earned

It has often been hypothesized that the more an individual works
the lower his grades may tend to be. Stated another way many recruiters
tend to look with less disfavor on a poor grade index if the student has
earned a high percentage of his expenses.

To investigate this question the percent of expenses for each
student was coded directly into the computer in 5 percent increments
ranging from 0 to 100 percent.

Number of Campus Activities (non-honoraries)

To examine the relationships between extra curricular activities,
grades and other parameters the number of campus activities were pro-
grammed into the computer. Because of the inability of this particular
program to handle a zero function the following table was used.

TABLE 6

NUMERICAL CODING OF CAMPUS ACTIVITIES

Actual Number of Activities	Number Assigned for Computing Purposes
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10

Therefore, the actual number of activities can be determined from the raw data by taking n = computer input − 1. Programming the number of activities obviously does not take into account whether the student was merely a passive member of the organization or whether he held a key office that involved a great deal of time. An attempt to account for these intangibles would have been strictly on an arbitrary basis. The number of activities over the total sample of 800 should be a fair predictor of student involvement in extra curricular activities. Only non-honoraries were chosen since this would have given a bias for correlation with grades.

Number of Months Worked

The number of months worked in the sample of 800 ranged from zero to 216. The average number of months worked was found to be 26.75.

These figures include all work experience during school, summers, and prior to entering school. Credit was also given for military service. A more meaningful method of data collection would be to consider only that experience encountered while attending school. This technique would give a better comparison to grade index, extra-curricular activities and other parameters. It is impossible, however, to determine from some resumes whether a certain work experience occurred during a particular session of school.

Age of Student (in months)

Since most students graduate from college between the ages of 21 and 25, this only leaves a four year range from which to work. Rather than breaking the years into decimals it was decided to calculate the age of the students in months. This in turn would allow a good dispersion of data while making it easy to convert back to years. The average age of the students studied was 275.96 months or 23.0 years. The range however varied from 222.9 months or 18.5 years all the way to 610 months or 50 years.

Once these five factors were programmed into the computer a correlation analysis was established indicating their interrelationships. This discussion is found in section one of the following chapter.

Statistical Analysis

The statistical techniques for examining the data is basically a linear correlation analysis in conjunction with multiple regression equations and charts.[1]

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[1] The term correlation refers to the degree of correspondence or relationship between two sets of data. The degree of correspondence is expressed by the coefficient of correlation (r) rho, along a scale which extends from -1.00 to 1:00. (Longmans, Elementary Statistics, New York: Green & Co., 1956)

There are several methods to calculate a coefficient of correlation. One method called the Rank-Difference method is listed mathematically as follows.[1]

$$r = 1 - \frac{6\sum d^2}{n(n^2-1)}$$

$\sum d^2$ = Sum of the differences
squared of the two comparisons

n = Sample size

σx = Standard Deviation of x

This method is non-parametric and is not recommended when the sample size (n) exceeds 25.

A more sophisticated method of correlation is the Pearson Product-Moment Correlation. This basically measures the linear correlation between two variables.[2] This method is parametic and enables the researcher to make comparisons between two sets of data.

$$r = \frac{\frac{\sum(x-\bar{x})(y-\bar{y})}{n} - M_x M_y}{\sigma_x \sigma_y}$$

x = One set of variable

y = One set of variable

M x = Mean for the x set of data

M y = Mean for the y set of data

σ x = Std. deviation of x

σ y = Std. deviation of y

A still greater level of sophistication in computing linear correlation can be found by using the "Method of least squares", which takes the observations into account and gives each an equal weight in determining the result.[3] This method is basically the one used by the computer in

[1] Longmans, Elementary Statistics, (New York: Green & Co., 1956)

[2] Underwood, Duncan, Spence, Elementary Statistics, (New York: Cotton-Appleton-Century-Crofts, Inc., 1954)

[3] Ezekial, Mordecai and Karl A. Fox, Methods of Correlation and Regression Analysis, (3rd edition, New York: John Wiley & Sons, Inc., 1959)

the analysis of this data. A computer was necessary because of the thousands of calculations necessary to make such a study.

Before a correlation coefficient is meaningful it must be tested for a certain level of significance. This was done in the study by looking at the degrees of freedom and then going to a table of coefficients for a particular level of significance. The level in use throughout this study, unless otherwise noted is 5%. The technique used throughout this study will be to state a null hypothesis that a relationship does or does not exist between two variables. Then, by using the table of significant correlation coefficients at the 5% level, the hypothesis can be accepted or rejected with a chance of error of only five times out of 100.

A regression analysis was also made comparing each interviewer's rating with his overall rating. The overall rating became the dependent variable in the regression equation and was held constant as the other ratings varied. This is in keeping with the definition of regression, stated: "A regression problem considers the frequency distribution of one variable when another is held fixed."[1]

A multiple regression was also made showing the relationship several independent variables have upon the dependent variable.[2]

$$x = a + b_1 x_1 + b_2 x_2 \cdot \cdot \cdot b_n x_n$$

For this study the dependent variable is again the overall rating with the independent variables being scholastic rating, campus rating, work experience rating and the rating of personal characteristics. A further analysis of this regression equation is presented in table seven.

TABLE 7

(See Appendix)

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[1]Dixon and Massey, Introduction to Statistical Analysis, (McGraw-Hill Book Co., 1951)

[2]Ezekial Mordecai and Karl A. Fox, Methods of Correlation and Regression Analysis, (3rd edition, New York: John Wiley & Sons, Inc. 1959)

CHAPTER V

CORRELATION ANALYSIS OF COLLEGE INTERVIEWING DATA

Correlation of Resume Data

There is much information provided to the interviewer in the form of the student's resume or application for employment. This section is devoted to an investigation of certain resume parameters and their possible relationship with each other.

Table eight indicates the statistical correlations between a students grade index and percent of expenses earned, number of campus activities, number of months worked and age.

TABLE 8

STATISTICAL CORRELATION OF
GRADE INDEX AND LISTED PARAMETERS

	Correlation Coefficient	Significance* Level	Significant
Percent of Expenses Earned	− .0045	.078	No
Number of Campus Activities	.0485	.078	No
Number of Months Worked	− .0257	.078	No
Age	− .0046	.078	No

It is evident from the low coefficients of correlation that no significant or predictive relationships can be made concerning the student's gradepoint.

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*The significance level of .078 was determined by taking the degrees of freedom from the study and applying them to a statistical table of coefficients using a 5% level of significance and a sample size of 800.

A correlation was found, however, for the percentage of expenses earned and the number of campus activities, number of months worked and age as shown in table nine.

TABLE 9

STATISTICAL CORRELATION OF THE PERCENTAGE
OF EXPENSES EARNED AND LISTED PARAMETERS

	Correlation Coefficient	Significance Level	Significant
Number of Campus Activities	- .1289	.078	Yes
Number of Months Worked	.3833	.078	Yes
Age	.2500	.078	Yes

It can be seen that there is a negative coefficient of correlation between the percentage of expenses earned and the number of campus activities. This is significant at the 5% level and basically indicates that the greater the percentage of expenses earned the fewer number of campus activities engaged by the student. This would seem reasonable since a student must budget his time during the school year. If a large percentage of the student's time is devoted to work, then little or no time will remain for the pursuit of campus activities.

A high correlation exists (.3883, significant at .1%) between the percentage of expenses earned and the number of months worked. This of course is not surprising since in order to earn a high percentage of expenses one would normally have to work a corresponding amount.

A high correlation also exists between age and percentage of expenses earned. From this relationship it would appear that the higher the age of a student the more likely it is that he will have earned a greater portion of his expenses.

No significant correlation was found to exist between the number of campus activities and the number of months worked as shown in table ten.

TABLE 10

STATISTICAL CORRELATION OF THE NUMBER
OF CAMPUS ACTIVITIES AND LISTED PARAMETERS

	Correlation Coefficient	Significance Level	Significant
Number of Months Worked	- .0756	.078	No
Age	- .1204	.078	Yes

There is, however, a significant negative correlation between number of campus activities and age. This is reasonable to expect since most students who are older, possibly married, or have returned from the service are by and large not as likely to engage in campus activities as the younger students.

Correlation of Resume Data

with Interviewer Ratings

This section is devoted to the statistical verification of the existence of interviewer bias and the presence of the halo effect.

To do this the five interviewer ratings designated as scholastic, campus, work experience, personal and overall were correlated with the various resume data as discussed in the previous section. The degree of relationship between the interviewer's scholastic ratings and the five parameters taken from the resume is represented in the following table. Column designation is the same as the previous section.

TABLE 11

STATISTICAL CORRELATION OF INTERVIEWER
SCHOLASTIC RATINGS AND LISTED PARAMETERS

	Level of Correlation	Significance Level	Significant
Grade Index	.8535	.078	Yes
Percentage of Expenses Earned	-.0307	.078	No
Number of Campus Activities	.0631	.078	No
Number of Months Worked	-.0054	.078	No
Age	-.0587	.078	No

The high correlation between the interviewer's scholastic rating and the grade index is easily explained by the fact that each interviewer uses a type of guideline for his rating. This guideline more or less follows the pattern listed below.

Interviewer's Rating	Grade Index
Below Average	1.00 to 1.99
Average	2.00 to 2.49
Above Average	2.50 to 2.99
Excellent	3.00 to 3.49
Outstanding	3.50 to 4.00

The guideline is varied somewhat depending upon the university and its academic standards as perceived by the interviewer. However, each interviewer more or less used the above guideline for l. scholastic ratings. Thus, from this relationship one should expect a very high correlation which was demonstrated by the data.

It should also be noted that there is no significant correlation between the interviewer's scholastic rating and any of the other four resume parameters. This might tend to indicate that the rater is basing his rating upon only the grade index and is not influenced by any other factor. This degree of objectivity is not always the case however, as we shall see in future correlations.

The interviewer's campus ratings and their relationship to the same five resume parameters are as follows:

TABLE 12

STATISTICAL CORRELATION OF INTERVIEWER
CAMPUS RATINGS AND LISTED PARAMETERS

	Level of Correlation	Significance Level	Significant
Grade Index	− .0068	.078	No
Percentage of Expenses Earned	− .1145	.078	Yes
Number of Campus Activities	.4244	.078	Yes
Number of Months Worked	− .0670	.078	No
Age	− .2823	.078	Yes

In making the campus rating the interviewer attempts to evaluate not only the number of campus activities, but also the quality of experience the student has received during participation. He looks at past leaderships, offices held, and the number of hours expended. Thus, his campus activity ratings are a composite of both the quality and quantity of extracurricular activities. Therefore, one is not surprised by the high correlation (.4244) between the campus ratings and the number of campus activities taken from the resume.

There is no significant correlation between the campus ratings and the individual's grade index. Thus, there does not appear to be a halo effect linking a students gradepoint to the interviewer's campus activity rating. This is not the case when we compare the rater's personal ratings to grade index which will be done in a later comparison.

There is a small but significant negative correlation (-.1145) between the interviewer's campus ratings and the percentage of expenses earned. This is probably best explained by the fact that in the previous section it was noted that a negative correlation of (-.1289) existed between the percentage of expenses earned and actual number of campus activities. Since the rater is largely basing his rating upon the number of campus activities engaged, we should expect the same negative correlation.

This same reasoning would also explain the negative correlation of (-.2823) between the campus ratings and age. The same relationship existed between age and the number of campus activities.

It appears that, just as the scholastic rating, the campus ratings appear to be a good indicator of the parameters they are attempting to measure.

The next relationship to be observed is the correlation between the work experience rating and the five objective parameters taken from the resume. Just as the campus rating, the work experience rating is designed to take both the quantity and the quality of work into consideration. All of the interviewers agreed however, that the nature of the work experience weighed far more heavily in their evaluations than did the number of hours worked. This is particularily true if the type of work was in keeping with his chosen field study. For example, working in a drug store would count more for a pharmacy student than it would for an electrical engineering student. The work experience ratings are as follows.

TABLE 13

STATISTICAL CORRELATION OF INTERVIEWER
WORK EXPERIENCE RATINGS AND LISTED PARAMETERS

	Level of Correlation	Significance Level	Significant
Grade Index	.1026	.078	Yes
Percentage of Expenses Earned	.1978	.078	Yes
Number of Campus Activities	.0796	.078	No
Number of Months Worked	.1932	.078	Yes
Age	.2112	.078	Yes

It should be noted that a significant correlation, although low (.1026), exists between grade point and work experience rating. Upon reviewing the previous correlations between grade index, percentage of expenses earned and number of hours worked there was found to be no significant correlation. This may mean that a slight halo effect exists between the student's grade index and how the rater evaluates the student's work experience. Stated another way the raters may tend to increase slightly their work experience rating if the individual's grades happen to be good.

It is not surprising to note that the work experience rating correlates also with percentage of expenses earned, number of months worked and age. Age was shown previously to have a high positive correlation with percentage of expenses earned and number of hours worked. Thus, the older a student happens to be the greater the number of hours he is likely to have worked, the greater the percentage of his expenses he is likely to have earned and hence the higher his work experience rating.

There is no significant correlation between the work experience rating and the number of campus activities.

The interviewer's personal characteristics rating, hereafter called the personal rating, is a composite of many factors. In talking with the student the interviewer attempts to evaluate items as personal appearance, maturity, poise, confidence, attitude and any other personality factor which the rater deems important to the job. At first glance this rating should be dependent only upon the student's personal characteristics and should not correlate with any other parameter. As the following table indicates this is not the case.

TABLE 14

STATISTICAL CORRELATION OF INTERVIEWER PERSONAL
CHARACTERISTIC RATINGS AND LISTED PARAMETERS

	Level of Correlation	Significance Level	Significant
Grade Index	.3089	.078	Yes
Percentage of Expenses Earned	.0466	.078	No
Number of Campus Activities	.1432	.078	Yes
Number of Months Worked	.0256	.078	No
Age	.0068	.078	No

It is quite significant to note the high positive correlation (.3089) between the interviewer's personal ratings and the student's grade index. In theory one is hard pressed to come up with a logical explanation as to why this is ture. The only explanation that seems plausible is there

is a strong halo effect again coming into play. It appears that if a student's grades are high the interviewer will tend to increase his rating on personal characteristics. Thus, the grade index is reflected in not only the interviewer's scholastic rating, but also in his personal ratings. As we shall see shortly it is also apparently in evidence in the interviewer's overall rating.

There is also a lesser correlation (.1432) between personal ratings and the number of campus activities engaged by the student. This may be partially explained by the fact that those students which tend to enter a large number of campus activities usually possess personal characteristics desirable by most companies. They tend to have greater extrovert tendencies which many recruiters are seeking.

There is no significant correlation between the interviewer's personal ratings and percentage of expenses earned, number of campus activities or age. It is somewhat surprising that since maturity is one of the factors included in the personal ratings and since there is typically a correlation between age and maturity that there is no correlation between the personal ratings and age.

The interviewer's overall rating is his total evaluation of the student for a particular job based on a job criterion previously established. Therefore, this rating probably carries the greatest weight in influencing other members of management in the organization. The extent of its statistical relationship to the other five parameters on the resume are as follows.

TABLE 15

STATISTICAL CORRELATION OF INTERVIEWER
OVERALL RATINGS AND LISTED PARAMETERS

	Level of Correlation	Significance Level	Significant
Grade Index	.4511	.078	Yes
Percentage of Expenses Earned	.0326	.078	No
Number of Campus Activities	.1528	.078	Yes
Number of Months Worked	.0269	.078	No
Age	− .0487	.078	No

There is a high correlation between the interviewer's overall rating and the student's gradepoint. It appears that the student's gradepoint is viewed with considerable importance on the part of the recruiter. This was also inferred by the high correlation between his personal rating and the student's grade point.

It has been stated by recruiters in discussion, that grades are only one factor of many that are taken into consideration when evaluating a candidate for a possible position. This study indicates however, that the student's grades play a very important role in the total evaluation — more so than first seems apparent. Students should also be aware of the importance attached by some recruiters to grades. This may provide increased motivation for academic performance.

Correlation Between Interviewers

This section attempts to indicate statistically that interviewers do indeed differ from each other, and that there is a difference in the emphasis placed upon certain aspects of the student's background.

This seems evident when one examines the various degrees of correlation between the subjective ratings and the overall ratings from one interviewer to another. This may well suggest that one rater may tend to place a greater emphasis upon grades than his counterpart. Another interviewer may place a greater emphasis upon the student's personal characteristics and so it goes.

Graphs in the appendix show each interviewer's rating as a function of his overall rating. These have been plotted for each interviewer. The actual values assigned can be read directly from the X and Y axis by moving the decimal point one place to the left. Thus, if one knows the value of a given rating he can be 95% certain that the corresponding value for the interviewer's overall rating will lie somewhere between the two wide bands on the graph. He can also be 95% confident that the true corresponding mean value of Y lies between the narrow bands. These graphs, upon examination, clearly show the presence of interviewer differences. For example on pages 73 and 74 the graphs indicate that the relationship between personal characteristics and overall rating for raters number two and three are significantly different.

Interviewer differences are also statistically suggested by the coefficients of correlation for each rater. These can be seen in table sixteen on the following page.

TABLE 16

STATISTICAL CORRELATION OF INTERVIEWERS' OVERALL RATING

AND OTHER LISTED RATINGS BY INTERVIEWER

	All Raters Combined N=800		Rater No. 1 N=66		Rater No. 2 N=210		Rater No. 3 N=309		Rater No. 4 N=215	
	Correlation	Sign. Level	Correlation	Sign. Level	Correlation	Sign. Level	Correlation	Sign. Level	Correlation	Sign. Level
Scholastic Rating	.5345	.078	.4281	.250	.6540	.138	.4834	.113	.5681	.138
Campus Rating	.3968		.3863		.4661		.3050		.3409	
Experience Rating	.4332		.3251		.3547		.4470		.3860	
Personal Ratings	.7908		.8511		.5801		.8338		.8502	

One must be careful concerning general statements involving these coefficients since the sample sizes do vary. It appears, however, that rater number two allows grades to influence his overall rating to a greater extend than does rater number three. Rater number four appears to be somewhere between rater number two and three in this respect.

Rater number two also has the highest correlation coefficient between campus ratings and his overall rating than all other interviewers. This would tend to indicate that he places more emphasis on a student's campus activities than his counterparts.

It appears that all raters are more or less consistent in the emphasis placed upon a student's work experience. The coefficients of correlation are very similar, however, rater number one has the lowest coefficient. It should be noted, however, that the sample size for rater number one is only sixty-six marking a higher correlation necessary for the same significance level.

One significant factor is the extremely high correlations between the personal and overall ratings for interviewers one, three and four. These high coefficients would seem to indicate that if the interviewer liked the students' personal characteristics the student had it made. The overall rating of interviewer number two seems to be less influenced by the students' personal characteristics than his collegues. Thus, some-one might conclude from this that he is somewhat more objective in his total evaluation than his counterparts.

The important part of this discussion is not to analyze all inter-viewer differences, but, to statistically demonstrate their existence. It appears from the observed data that interviewer differences do exist and can be measured by statistical means. These differences if properly interpreted can be used to guide and council each interviewer and aid him in improving his overall objectivity.

CHAPTER VI

SUMMARY AND CONCLUSIONS

PART A

The following conclusions are based primarily on a survey of recent literature in the field of management.

1. Good management is necessary for the long run perpetuation of any organization. This is true whether the primary objective of the organization is economic, political, social or religious.[1]

2. The procurement of highly qualified managers is not an easy endeavor for most organizations. This is primarily true because the demand for managers exceeds the supply.[2]

3. All organizations should have a well defined manpower planning program.[3] Such a program allows management to analyze its inventory of talent and to forecast future managerial needs.

4. Job criteria must be established before a dependable intelligent managerial recruiting program can be developed. These criteria can be generated primarily by specific job requirements, desireable personality characteristics, or both.[4]

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[1] G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964), p. 5.

[2] N.R. Maier, The Appraisal Interview, (John Wiley & Sons, Inc., 1966), p. 1.

[3] H. Koontz and C. O'Donnell, Principles of Management, (4th edition, McGraw-Hill Book Co., 1968)

[4] F.M. Lopey, Jr., Personnel Interviewing, (McGraw-Hill Book Co., 1965)

5. College recruting is a valuable source of managerial potential.[1]

6. The recruiter is a key person in a college recruiting program.[2] Many times the recruiter is the only criterion the student has to evaluate the company and form an opinion. This first impression of the company can be very lasting.

7. There are several selection techniques such as tests, use of applications and employment interviews. All three selection methods can be extremely effective or grossly ineffective depending upon the administration of the particular device and the interpretation of its respective data.

8. The technique of interviewing, under the proper circumstances can be a valuable selection procedure. This has been demonstrated in several studies.[3]

9. Multiple interviews, for the most part, have greater predictive value than a single interview.[4]

10. The more structured an interview, the more effective it tends to be.[5]

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[1] G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964) and H. Koontz and C. O'Donnell, Principles of Management, (4th edition, McGraw-Hill Book Co., 1968)

[2] G.R. Terry, Principles of Management, (4th edition, Richard D. Irwin, Inc., 1964)

[3] E.C. Mayfield, "The Selection Interview", Personnel Psychology, Vol. 17, 1964)

[4] Edwin E. Ghiselli, "The Validity of a Personnel Interview", Personnel Psychology, Vol. 19, 1966), and E.C. Webster, Decision Making in the Employment Interview, (Montreal, Canada:, McGill University, Industrial Relations Center, 1964)

[5] L. Ulrich and D. Truenbo, "The Selection Interview Since 1949", Psychological Bulletin, Vol. 63-64, 1965), and E.C. Webster, Decision Making in the Employment Interview, (Montreal, Canada: McGill University, Industrial Relation Center, 1964)

11. An interviewer's objectivity tends to be decreased by his biases and prejudices.[1]

PART B

The following conclusions are based primarily on the statistical analysis of data obtained in the field study.

1. An important factor in interviewing is the halo effect. This occurs when the interviewer, having been favorable or unfavorably impressed by one attribute of the candidate, allows his judgment of the candidate's other attributes to be effected appreciably.[2] This effect was statistically demonstrated in the analysis section.

2. In conversations with recruiters many have hypothesized that if a student works a great deal, or apportions a large share of his time to campus activities, his grades are likely to suffer. Based upon the statistical analysis of 800 student resumes it was found that no significant correlation exists between a student's grade point and his percent of expenses earned, number of campus activities, number of months worked or age.

3. There is a negative correlation between the percentage of expenses earned and the number of campus activities. This seems reasonable since a student must budget his time during the school year. If a larger percentage of the student's time is devoted to work, then little or no time will remain for the pursuit of campus activities.

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[1] R.A. Denerly, "Recruitment & Selection in a Full-Employment Economy", The Institute of Personnel Management, (Oxford Circus London, 1968)

[2] Ibid.

4. There is a negative correlation between the number of
    campus activities engaged and a student's age. This
    relationship seems reasonable since most students who
    are older, possibly married, or have returned from the
    service are by and large not as likely to engage in campus
    activities as their younger counterparts.

5. A significant correlation exists between the interviewer's
    work experience rating assigned to the student, and the
    students grade point. In theory there should be no
    relationship between these parameters. This may mean
    that a slight halo effect exists between the student's
    grade index and how the rater evaluates the student's
    work experience. In other words if a student's grade
    point is high then the recruiter tends to increase his
    rating for the student's work experience.

6. A high positive correlation exists between the student's
    grade point and the recruiter's personal and overall ratings
    of the student. Again, in theory, there should be no relation-
    ship between these parameters.[1] This relationship is strong
    evidence that a halo effect exists on the part of the four
    recruiters studied.

7. Bias and prejudice affect a recruiters overall objectivity.
    These parameters result partly from the cultural and
    environmental background of each recruiter.[2] Since each
    recruiter's background differs it can be expected that
    differences can be detected in the emphasis placed on
    certain parameters.

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[1]R.A. Denerly, "Recruitment & Selection in a Full-Employment
Economy", The Institute of Personnel Management, (Oxford Circus London, 1968)

[2]Ibid.

The ramifications of this study are numerous and have already produced the following results within the company in question.

1. This writer has re-evaluated his rating procedure in the area of grades, personal characteristics and overall performance.

2. The multiple interview procedure employed by the company in this study was to have been discontinued. Since that time the procedure has been restudied and the decision made to retain multiple interviews.

3. A plan has been instituted at the company in question to allow a greater amount of dialogue and feedback to exist between the recruiter and the department heads. This is for the purpose of insuring that each recruiter has job criterias clearly in mind before he goes to the college campus.

4. A more extensive evaluation procedure of recruiter qualifications has been implemented since this study was first undertaken.

5. Much of this material will be used in a management recruiting seminar to be held in September, 1971.

6. As a result of this study no student resumes are reviewed prior to the interview. This is to prevent preconceived bias from rendering the interview ineffective. All corporate recruiters have not adopted this procedure, however, it is being recommended that they do so.

7. This writer has made a positive effort to increase the degree of structure in his interviews.

8. The four recruiters involved in the study have discussed with each other in detail their individual bias and prejudices. From these discussions an awareness and deeper understanding has emerged on the part of each recruiter regarding his interviewing characteristics.

9. Each recruiter studied is attempting to re-evaluate the relative significance or importance that he attaches to grades. By so doing it is hoped that each recruiter will become more objective in his overall rating of the student. This is particularily important in relation to the total job criteria.

These are a few of the areas in which changes have been made and discussions involved as a result of this study. It is hoped that future academic studies can be made which will further enhance our knowledge and understanding of this very timely subject.

APPENDIX

TABLE 1

COLLEGE AND UNIVERSITIES

Institution

Carnegie Institute of Technology	8
Case Institute of Technology	13
University of Colorado	2
Cornell University	4
University of Dayton	14
University of Detroit	1
Duke University	2
Eastern Michigan University	14
University of Illinois	6
Kansas State University of Agric. and Applied Science	34
Michigan State University	88
University of Michigan	4
University of Michigan - Dearborn Campus	5
Michigan Technological University	93
University of Missouri at Rolla	62
University of Nebraska	45
North Carolina State University at Raleigh	10
North Dakota State University	5
University of North Dakota	30
University of Notre Dame	18
Ohio State University	45
Ohio University	13
Ohio Wesleyan University	1
Oklahoma State University of Agric. and Applied Science	17
Pennsylvania State University	11
Purdue University	94
Rose Polytechnic Institute	8
South Dakota School of Mines and Technology	6
Southern University	4
Tennessee State University	5
University of Tennessee	17
Tri-State College	14
Tuskegee Institute	2
Vanderbilt University	6
Wayne State University	36
Western Michigan University	8
University of Wisconsin	55

TABLE 2

RATING FORM USED BY INTERVIEWER

RECENT COLLEGE GRADUATE QUALIFICATION SUMMARY

Name: Robert (First) Ray (Middle) Mann (Last)

Date Interviewed: 11/19/67

Referrals (√) Indicates those referred on Campus

Preferred Location: Midwest
( ) Essential
( ) Desirable
( ) Unimportant

College or University: Purdue — PRDU (Code 20-23)

Primary Job Interest: See Remarks

Course: Met. Engr. — 16 (Code 24-25)

Degree: B.S. — B (Code 26)

Grad. Date: 6/68 — J (Code 27)

Referrals:
(X) Buick
(X) AC Spark Plug
(X) Chev. - Engr.
( )
( ) — Code (15-19)

RATINGS: (5) Outstanding; (4) Excellent; (3) Above Avg.; (2) Avg.; (1) Below Avg.

Scholastic Rating	Campus Activities	Work Experience	Personal Characteristics	Interviewer's Overall Rating
5.00 / 6.00 AA+	O	E	A	AA — 3 (Code 28)

Remarks: Robert is interested in both product and production engr. Personality is quiet and reserved - could be more aggressive. Two of his three summers involved M. E. work. Wants to later work into administration.

Regular or Summer Employment: R (Code 29)

General Motors Interviewer: Stanley Chalmers

Interviewer's Location: Detroit

Division or Staff: C. O. — C (Code 30)

Recommend X Reject ___ Military ___

G. M. Scholar: N (Code 31)

Salaried Personnel Placement
General Motors Corporation
FILE COPY

№ 37482

PURDUE UNIVERSITY
Lafayette, Indiana

TABLE 3

57

COLLEGE INTERVIEW FORM

Company: General Motors
Date of Intv.: W/P Time: 2:20

NAME (Mr., Miss, Mrs.) — Last: Mann, First: Robert Middle: Ray	BIRTH DATE: 7-13-45	HEIGHT: 5-8 WEIGHT: 150

HOME ADDRESS (Street, City, State): 12 Boxley Ct., Evansville, Indiana 47711
HOME PHONE: 476-3987
MARITAL STATUS: Single — NO. DEPENDENTS Children: none Other

COLLEGE ADDRESS (Street, City, State): 9 University St., W. Lafayette, Ind. 47906
COLLEGE PHONE: 743-4677
U.S. CITIZEN: [X] Yes [ ] No
If "No", indicate type of visa

PHYSICAL LIMITATIONS: no
FATHER'S OCCUPATION: Machinist
FOREIGN LANGUAGES: French/German

TYPE OF WORK DESIRED
1st Choice: Development
2nd Choice: Production
DATE AVAILABLE: June 1968

WORK LOCATION RESTRICTIONS (if any): There are certain preferences

NAME AND LOCATION OF COLLEGES ATTENDED	DATES From	To	DEGREE EARNED	GRADUATION DATE	COURSES STUDIED (1) Major (2) Minor	GRADE PT. AVE. (1) Overall (2) Major	GRADE BASIS	CLASS RANK QUARTILE
Purdue University	Fall '64	Spring '68	B.S.E.	June '68	1 MetE & MatSci 2 Organic Materials	5.13 / 5.00	A=6.0	upper 1/4
					1 / 2		A=	
					1 / 2		A=	

THESIS AND DISSERTATION TITLE (S): Senior Project: X-Ray Determination of Polymer Crystallinity

NAMES OF ADVISOR (S): Prof. Gerald Liedl; Prof. P. B. Eaton

COLLEGE HONORS, PROFESSIONAL SOCIETIES, FRATERNITIES, AND ACTIVITIES (Give positions held):
Pi Kappa Alpha social fraternity -- secretary, vice-president; Phi Eta Sigma freshman scholastic honorary; Tau Beta Pi engineering honorary; Gimlet Club activities honorary; Mock P.-delegations Committee; Student Government-Cultural -Assistant Director, Jr. Board Member:; AIME & ASM Metallurgical Societies; Exponent (student newspaper) -staff columnist.

COLLEGE EXPENSES EARNED: 25
HOW EARNED: summer work

WORK EXPERIENCE (Names and Addresses of Employers)		DESCRIPTION OF WORK	HOURS PER WEEK	DATES EMPLOYED From	To
ALCOA - Warrick Works Newburgh, Indiana		Student in metallurgical engr.-- ingot plant	40	Summer '67	
Whirlpool Corporation Evansville, Indiana	Hwy 41N	Product development - refrigeration	40	Summer '66	
Whirlpool Corporation Evansville, Indiana	Morgan Ave.	Product development - Air conditioning	40	Summer '65	

PRESENT SELECTIVE SERVICE STATUS: 2-S
ANTICIPATED MILITARY DUTY: Branch ? - no present plans From To Rank Experience
PREVIOUS SERVICE: Branch none From To

REFERENCES (Names and Addresses - Preferably Faculty and Business):
Mr. Larry Redhair, ALCOA Warrick Works, Newburgh, Indiana
Mr. Bob Molsberger, ALCOA Warrick Works, Newburgh, Indiana
Prof. Gerald Liedl, Purdue, Chem. & Met. E. Building, W. Lafayette, Ind.

OTHER INFORMATION (Community Activities, Hobbies, and Interests, Etc.):
reading, politics, international affairs, golf

DATE SIGNED

TABLE 4

CORRELATION MATRIX

	SUBJECTIVE					OBJECTIVE				
	S/R	Campus	Work	Personal Ratings	Overall Rating	Grade Index	% Expenses Earned	No. of Campus Activities (Non-honoraries)	No. of Months Worked	Age In Months
S/R	1.0000	.1772	.1286	.3357	.5345	.8535	-.0307	.0631	-.0054	-.0587
Campus	.1772	1.0000	.0870	.2502	.3968	-.0068	-.1145	.4244	-.0670	-.2823
Work	.1286	.0870	1.0000	.3260	.4332	.1026	.1978	.0796	.1932	.2112
Personal Ratings	.3357	.2502	.3260	1.0000	.7908	.3089	.0466	.1432	.0256	.0068
Overall Rating	.5345	.3968	.4332	.7908	1.0000	.4511	.0326	.1528	.0269	-.0487
Grade Index	.8535	-.0068	.1026	.3089	.4511	1.0000	-.0045	.0485	-.0257	-.0046
% Expenses Earned	-.0307	-.1145	.1978	.0466	.0326	-.0045	1.0000	-.1289	.3883	.2500
No. of Campus Activities (Non-honoraries)	.0631	.4244	.0796	.1432	.1528	.0485	-.1289	1.0000	-.0756	-.1204
No. of Months Worked	-.0054	-.0670	.1932	.0256	.0269	-.0257	.3883	-.0756	1.0000	.5126
Age In Months	-.0587	-.2823	.2112	.0068	-.0487	-.0046	.2500	-.1204	.5126	1.0000

TABLE 7

REGRESSION EQUATION ANALYSIS

Definition of Terms

$Z(1)$ = Overall Rating (Dependent Variable)

$Z(2)$ = Scholastic Rating

$Z(3)$ = Campus Activities Rating

$Z(4)$ = Work Experience Rating

$Z(5)$ = Personal Characteristics Rating

REGRESSION EQUATION

$Z(1) = (-0.567) + 0.19 \times Z(5) + 0.15 \times Z(2) + 0.17 \times Z(4) + 0.14 \times Z(3)$ *

Constant Term = -0.567

VARIABLE	COEFFICIENT	STD. ERROR OF COEF.	COEF./STD. ERROR
$Z(5)$	0.57470	0.18824	30.5
$Z(2)$	0.23291	0.15102	15.4
$Z(4)$	0.17647	0.16800	10.5
$Z(3)$	0.14319	0.13781	10.4

Multiple correlation coefficient (R) = 0.87769

Coefficient of determination (R - SQ) = 0.77034

Unexplained standard error   = 1.03357

* The independent variables are entered in the order of their relative contribution
  to the multiple correlation coefficient.

RATER #1

OVERALL VS. SCHOLASTIC RATING
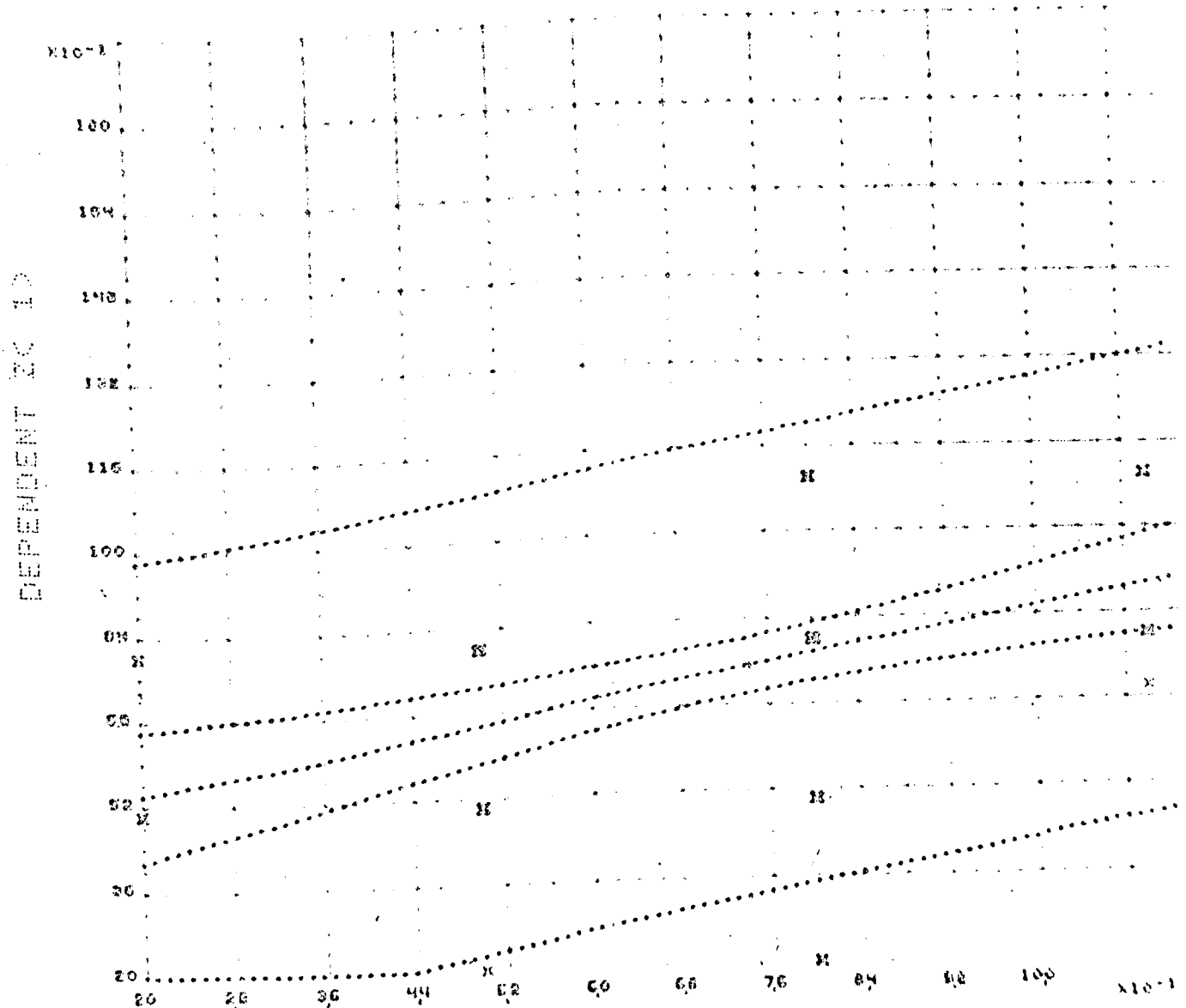
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OVERALL VS. SCHOLASTIC RATING
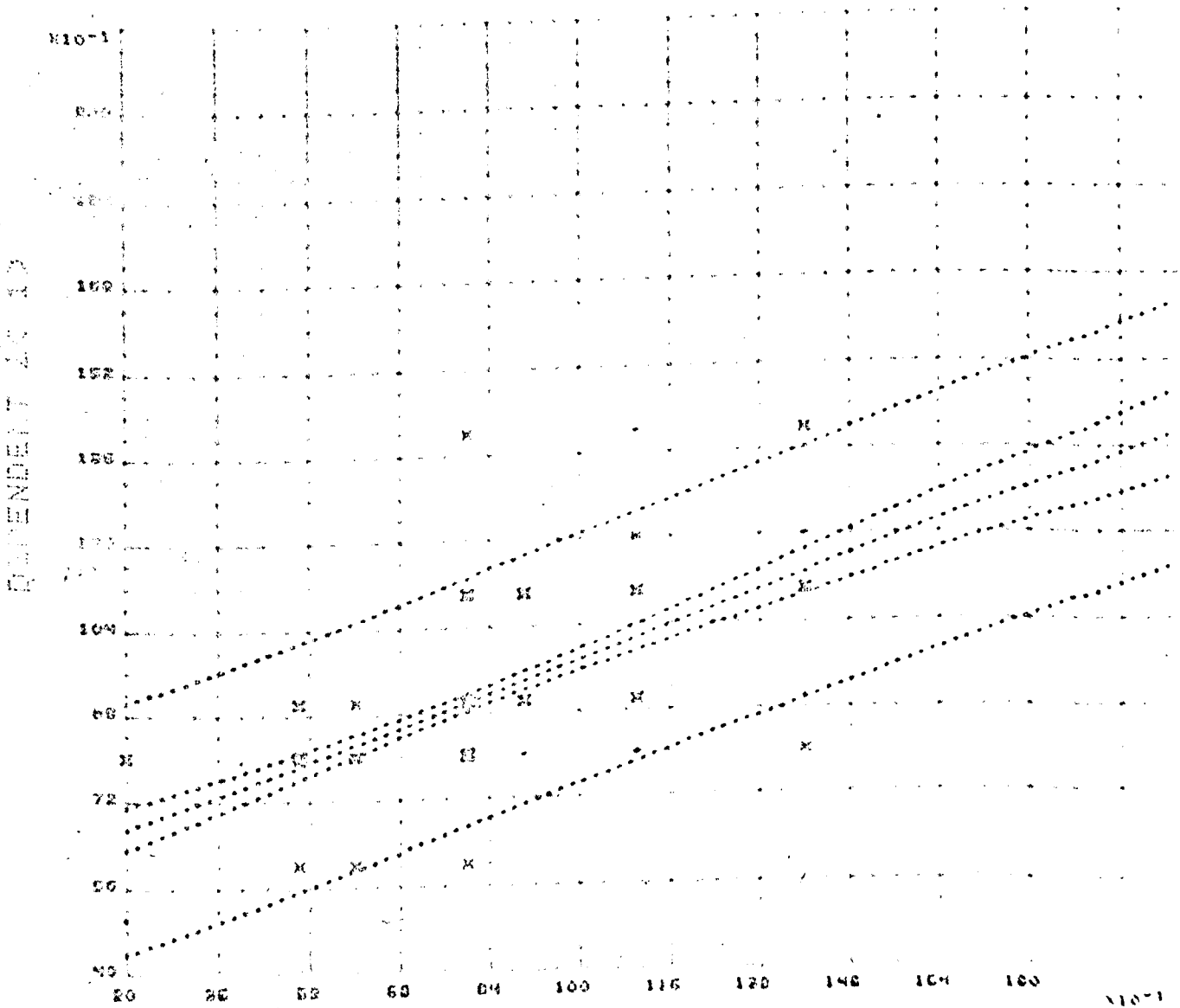
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OVERALL VS. SCHOLASTIC RATING
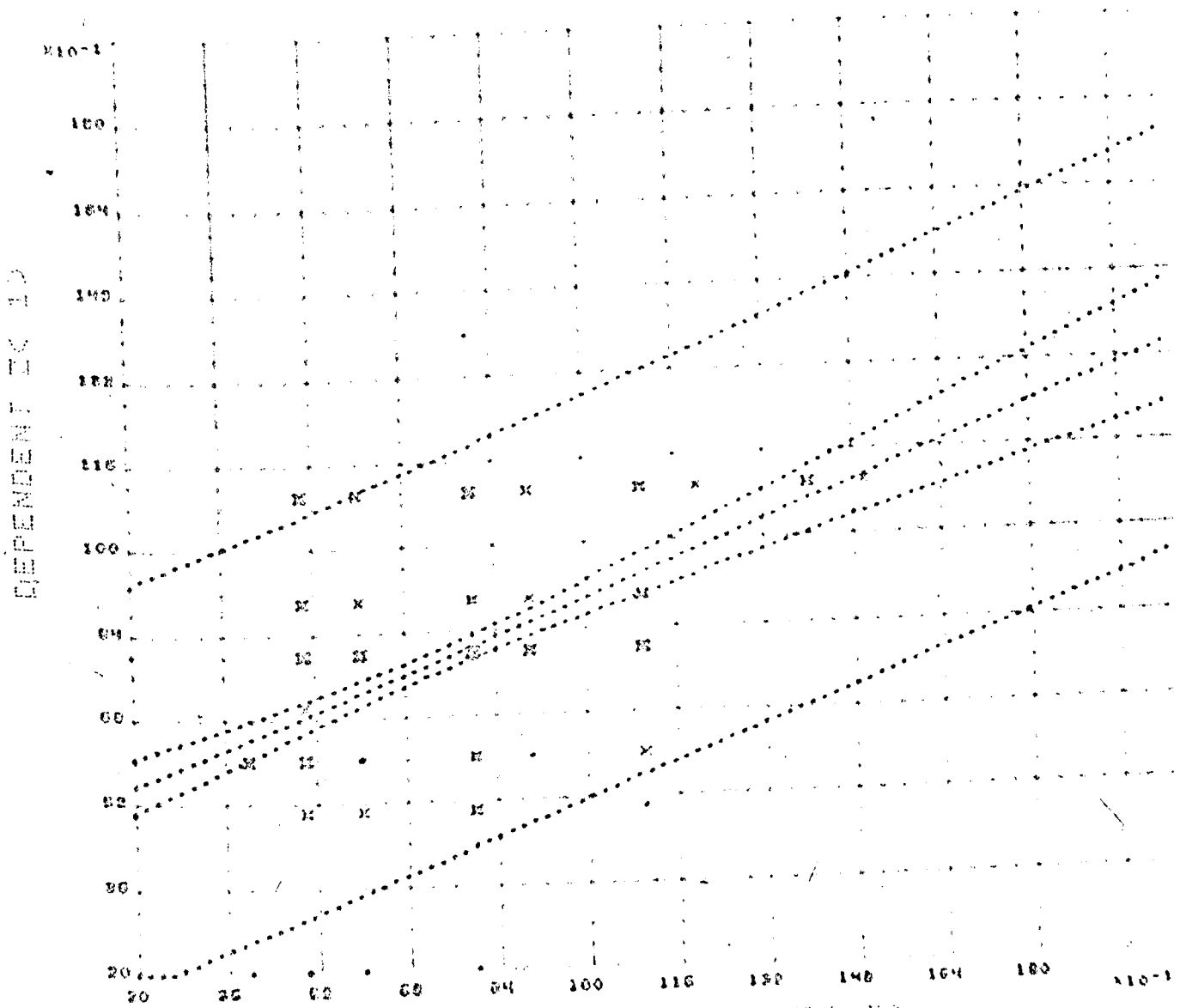
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OVERALL VS. SCHOLASTIC RATING
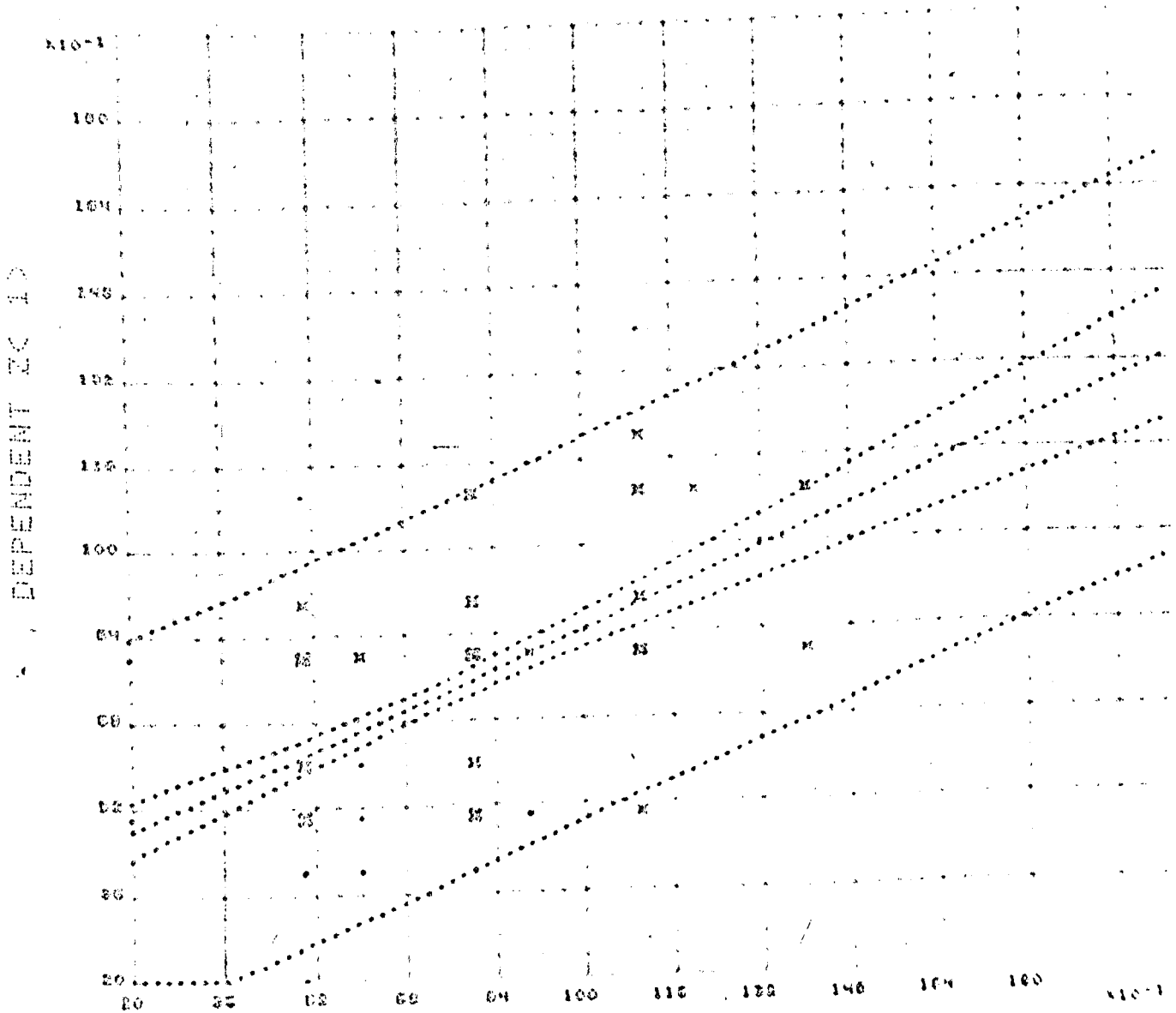
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RATER #1

OVERALL VS. WORK EXPERIENCE RATING
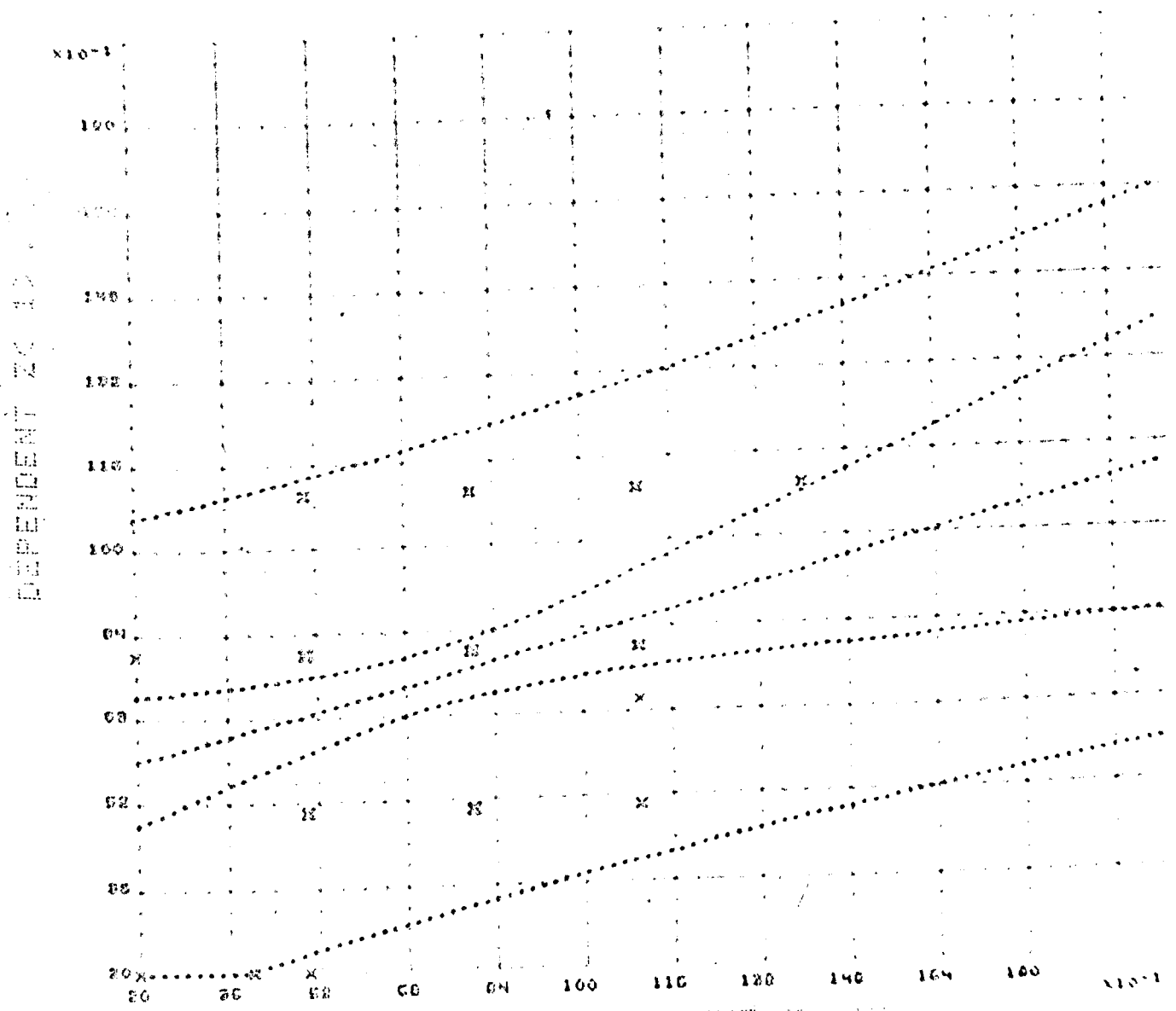
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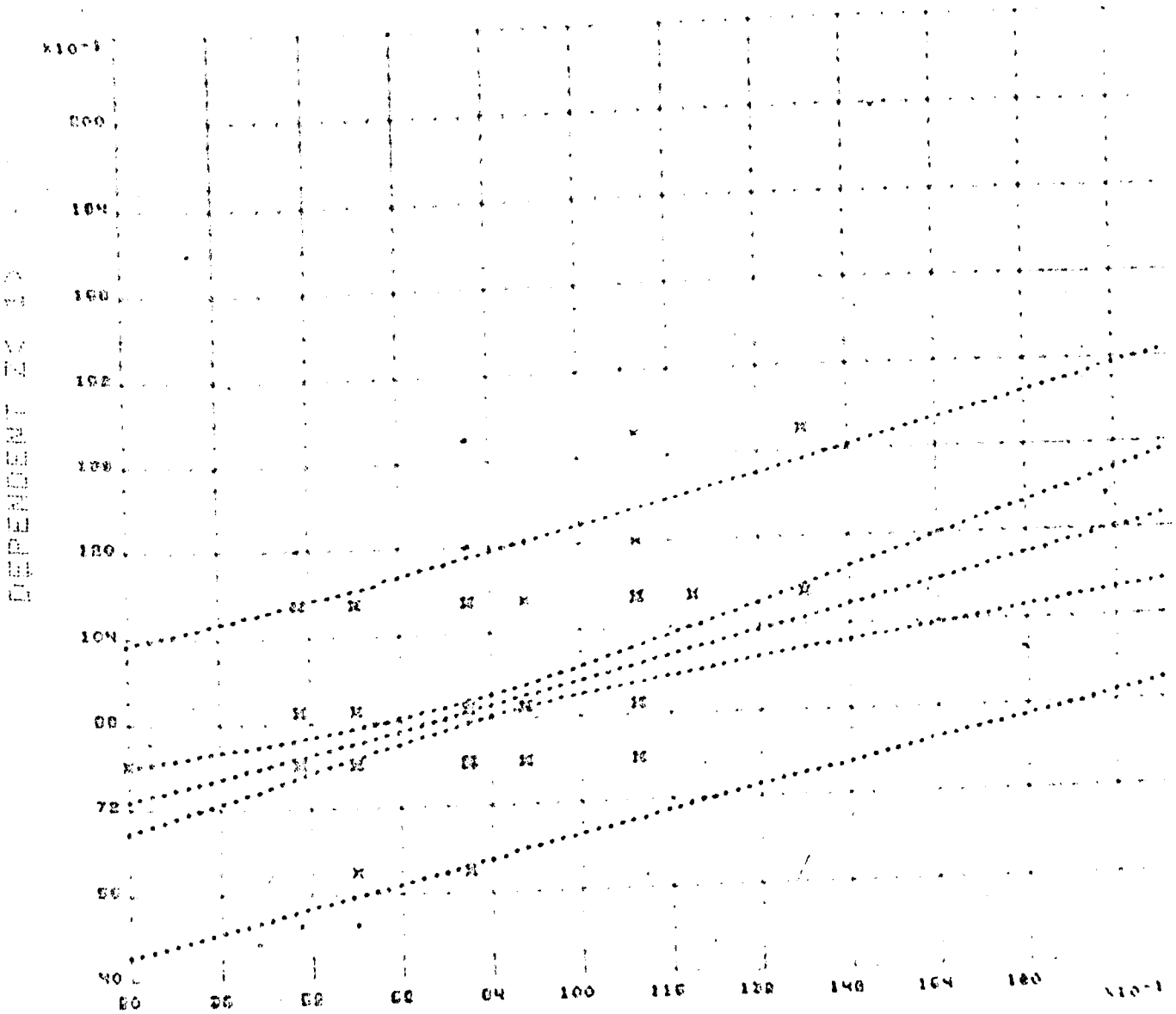
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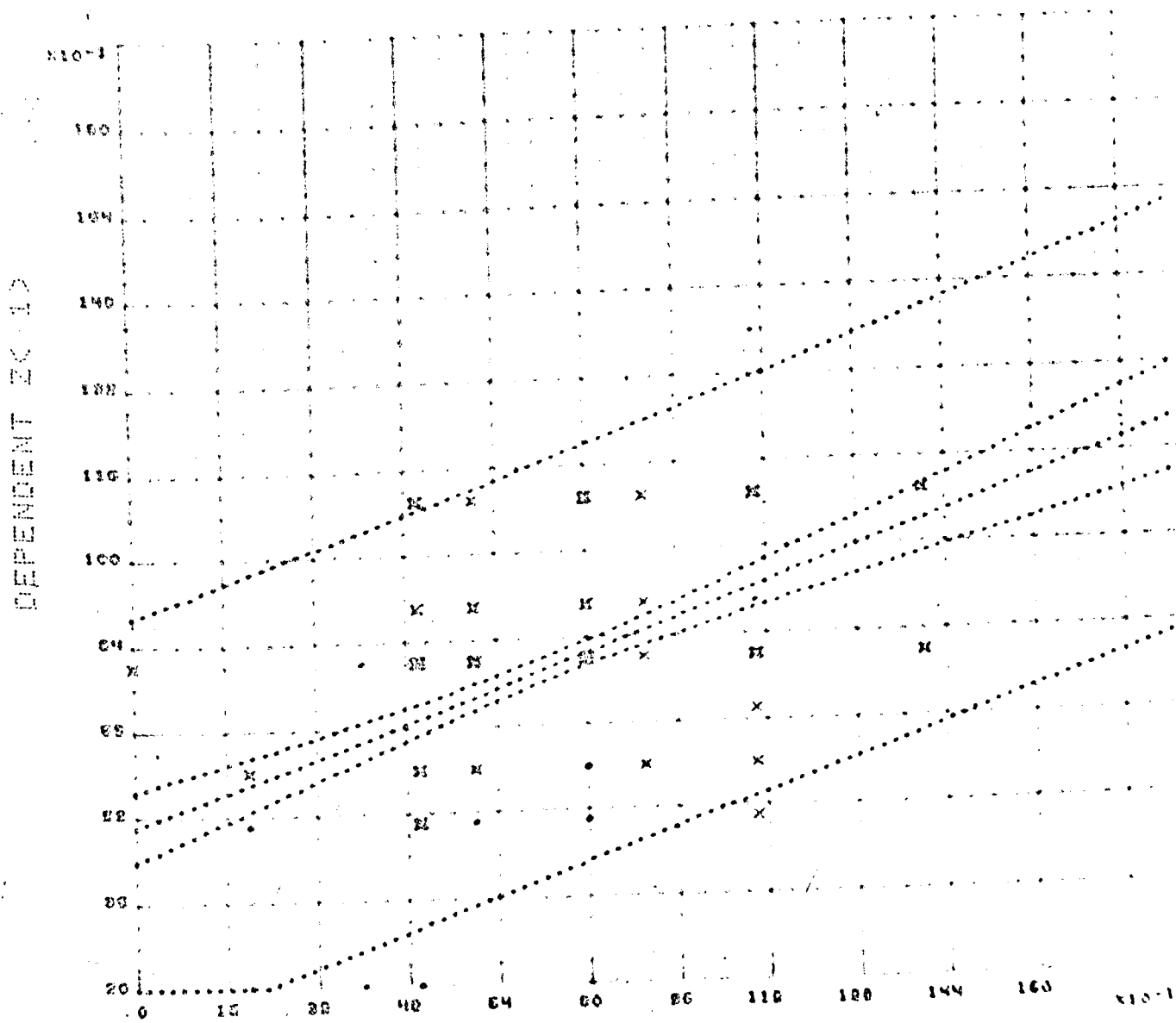
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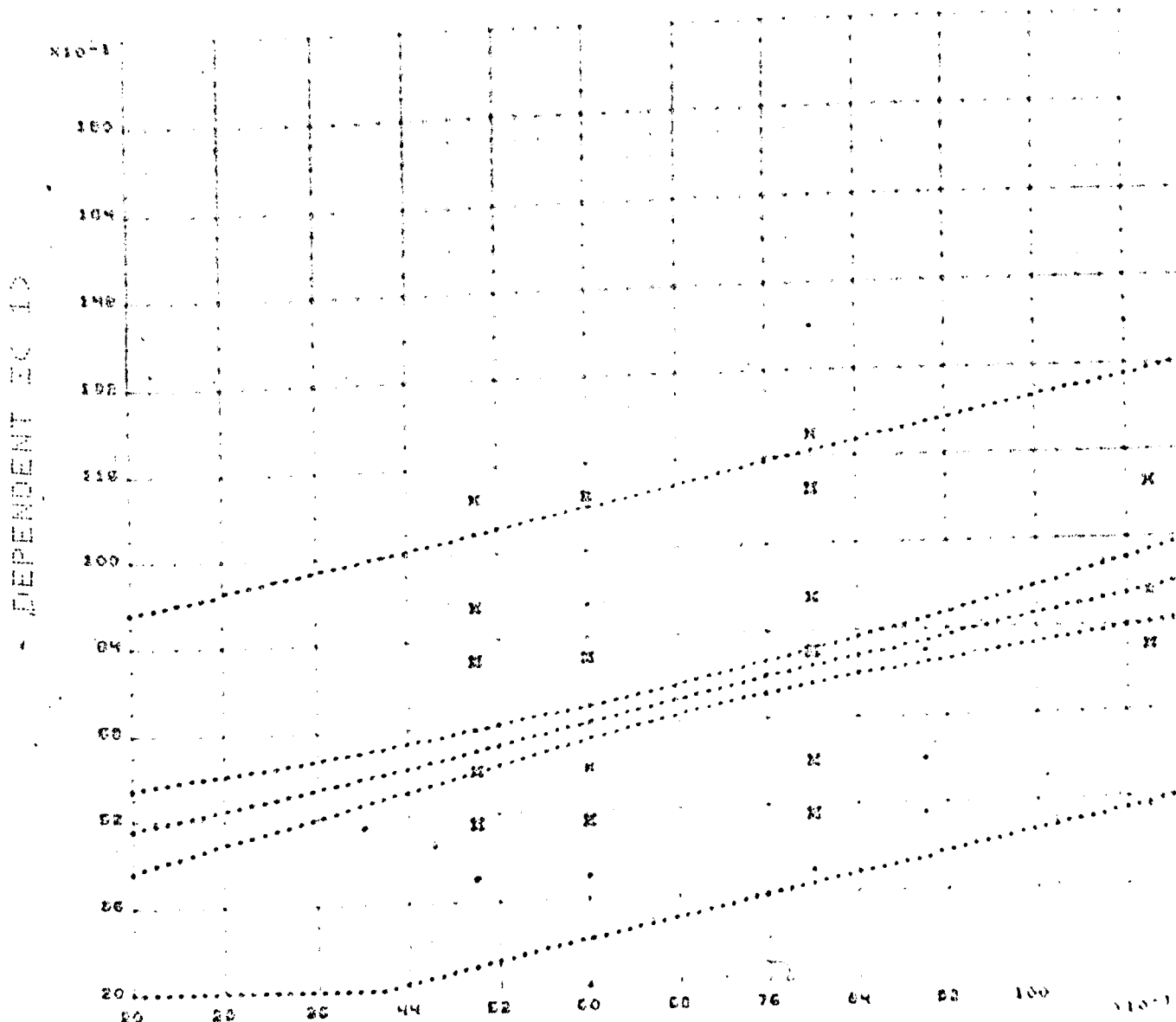
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OVERALL VS. CAMPUS RATING
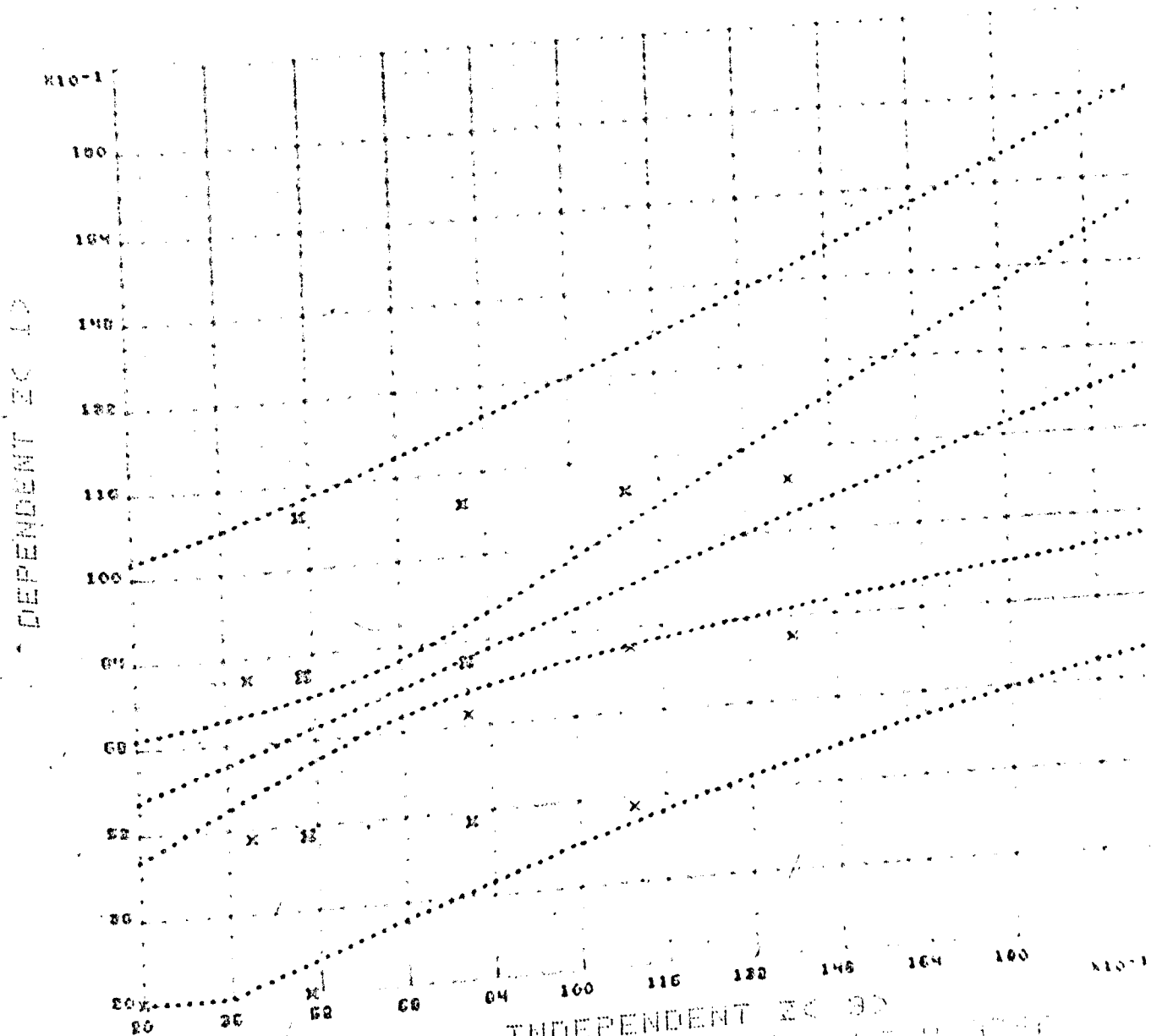
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OVERALL VS. CAMPUS RATING
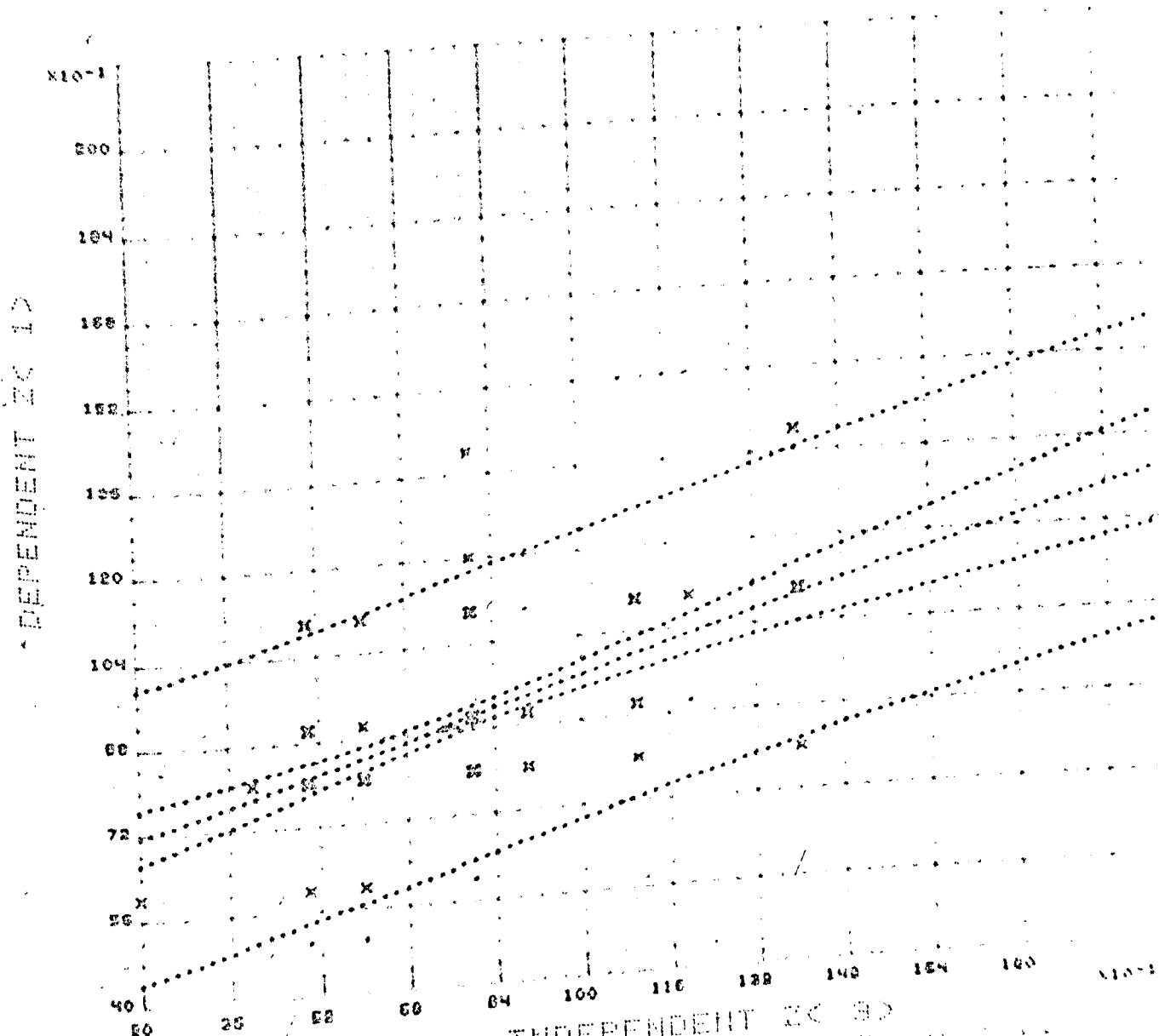
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OVERALL VS. CAMPUS RATING
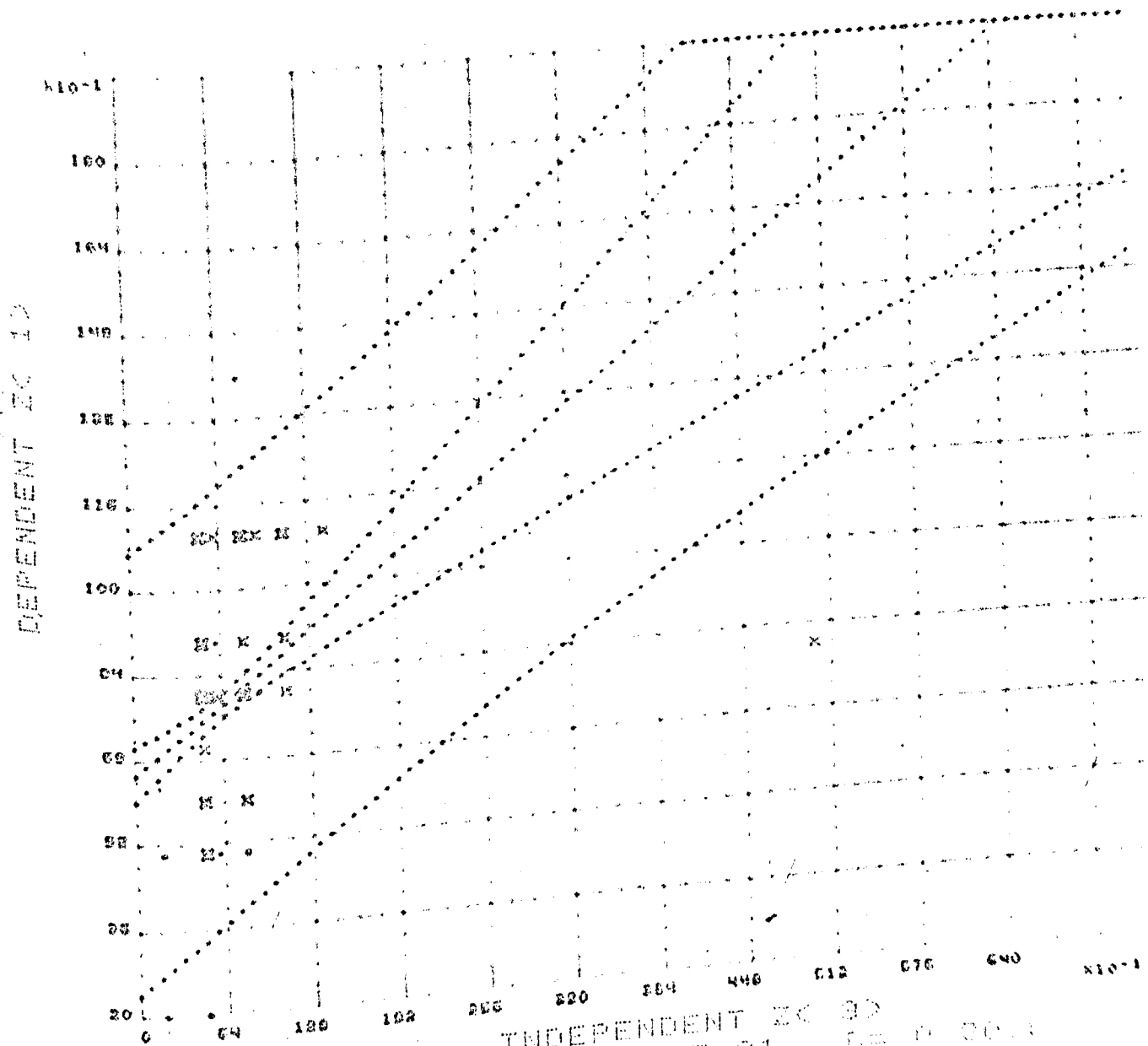
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OVERALL VS. CAMPUS RATING
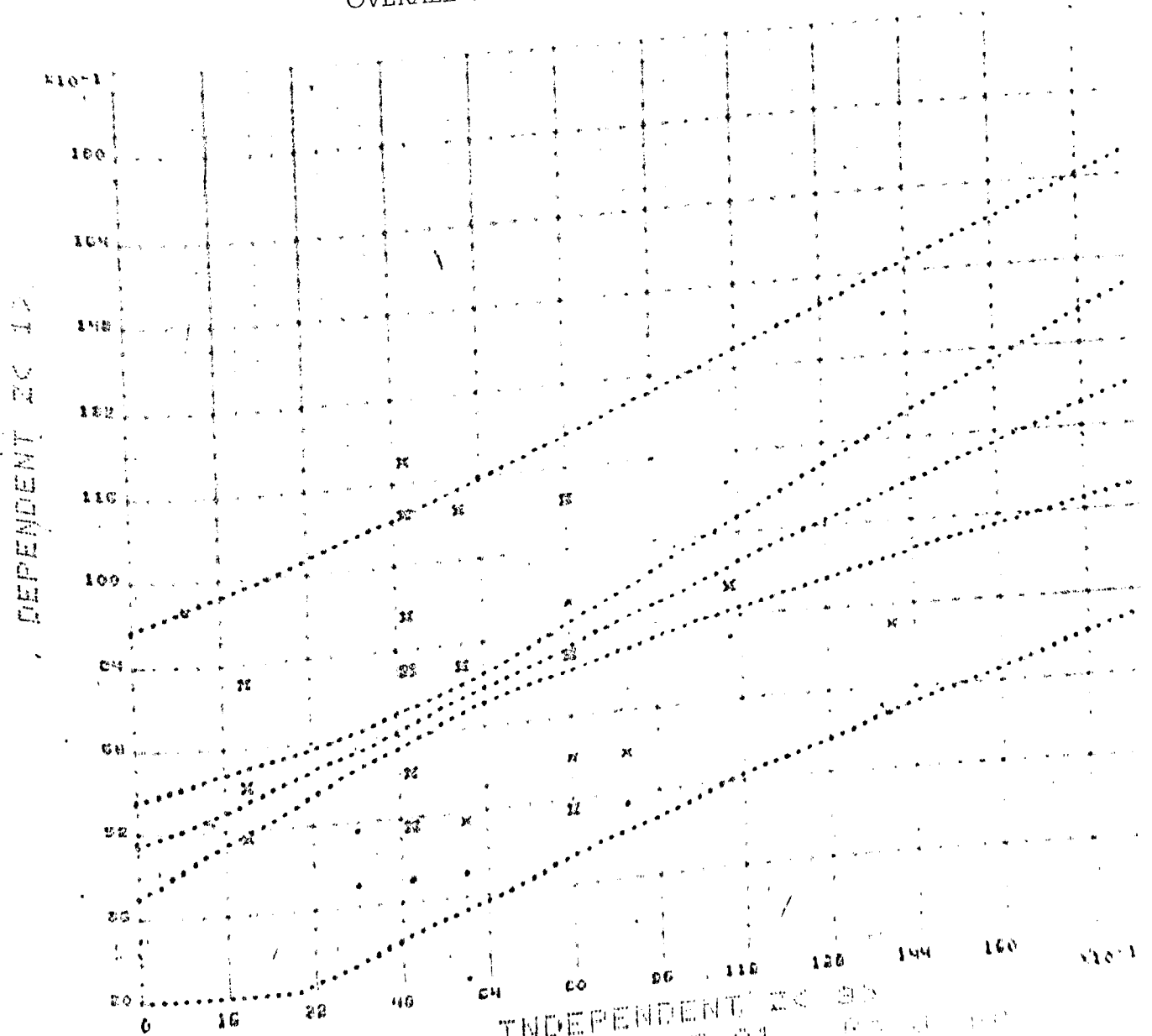
RATER #1

OVERALL VS. PERSONAL CHARACTERISTICS RATING
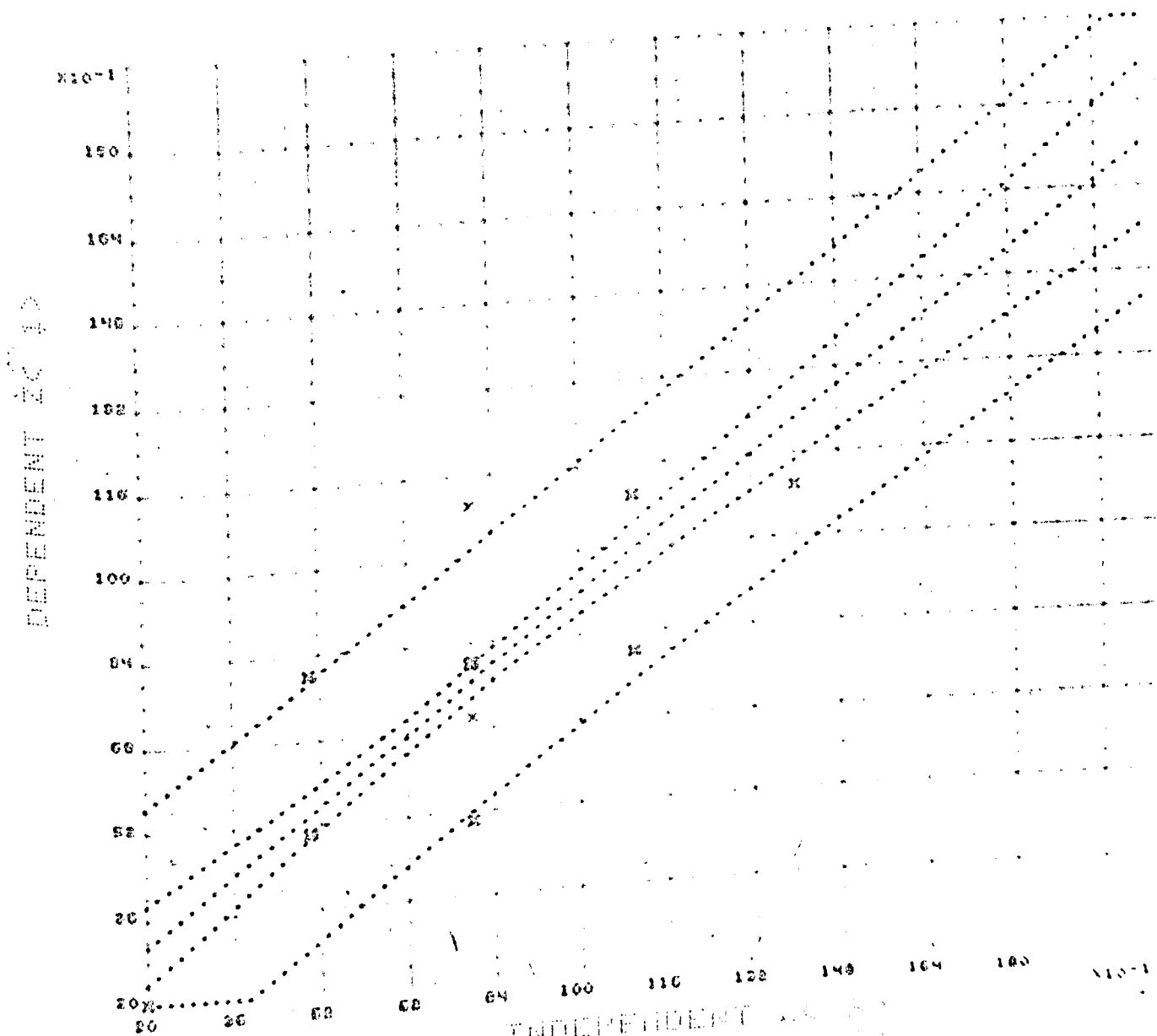
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OVERALL VS. PERSONAL CHARACTERISTICS RATING
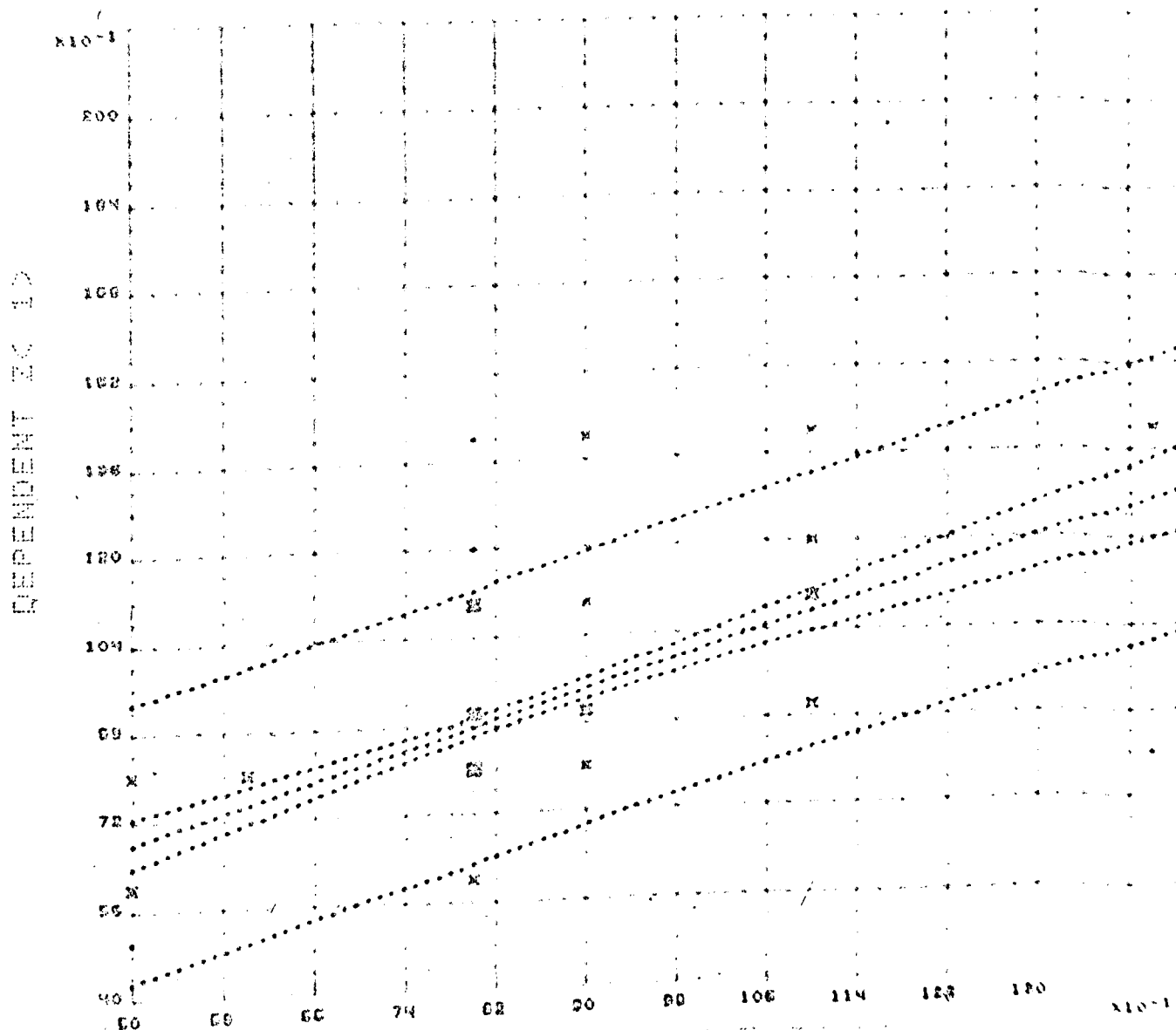
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OVERALL VS. PERSONAL CHARACTERISTICS RATING
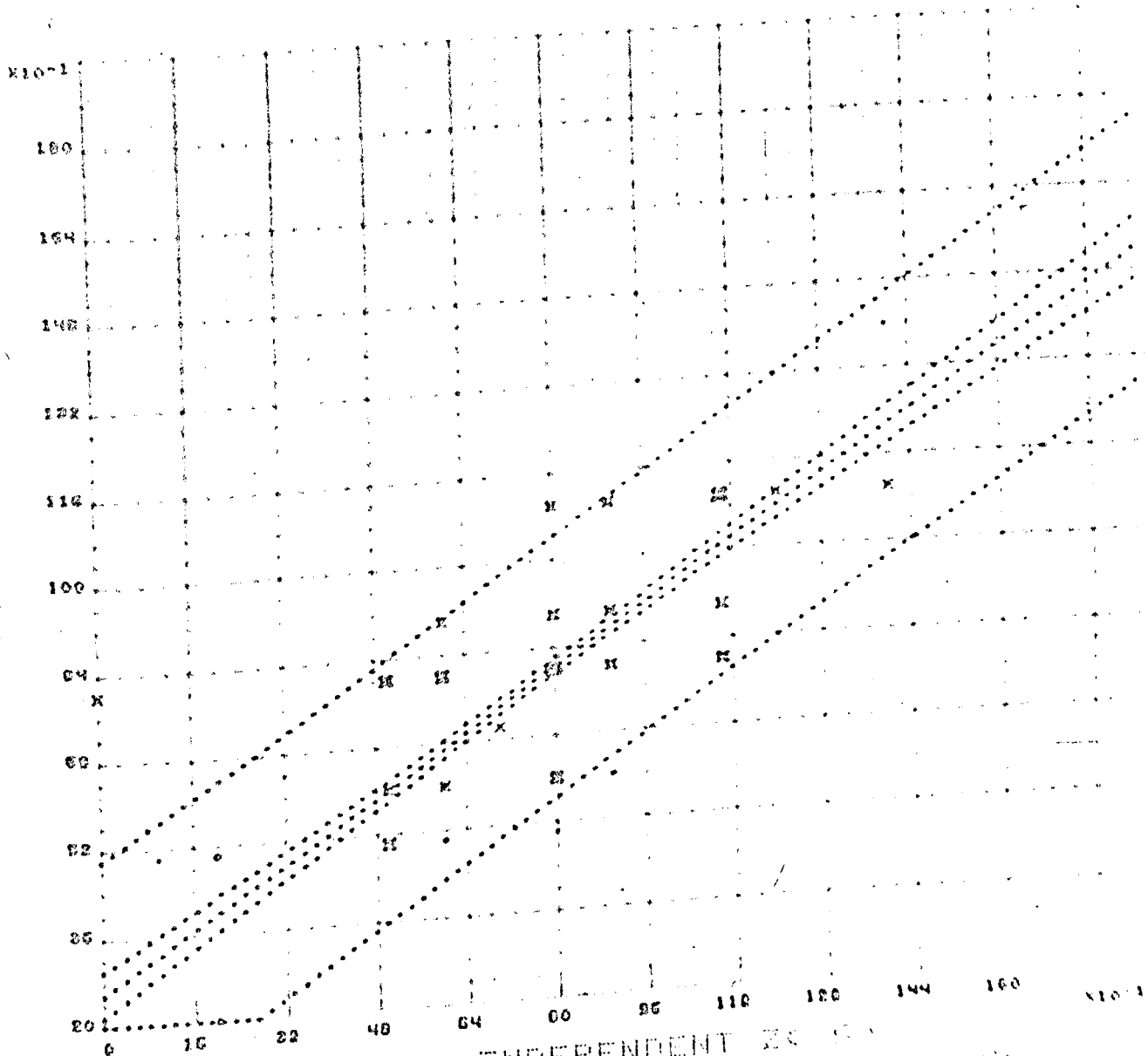
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OVERALL VS. PERSONAL CHARACTERISTICS RATING
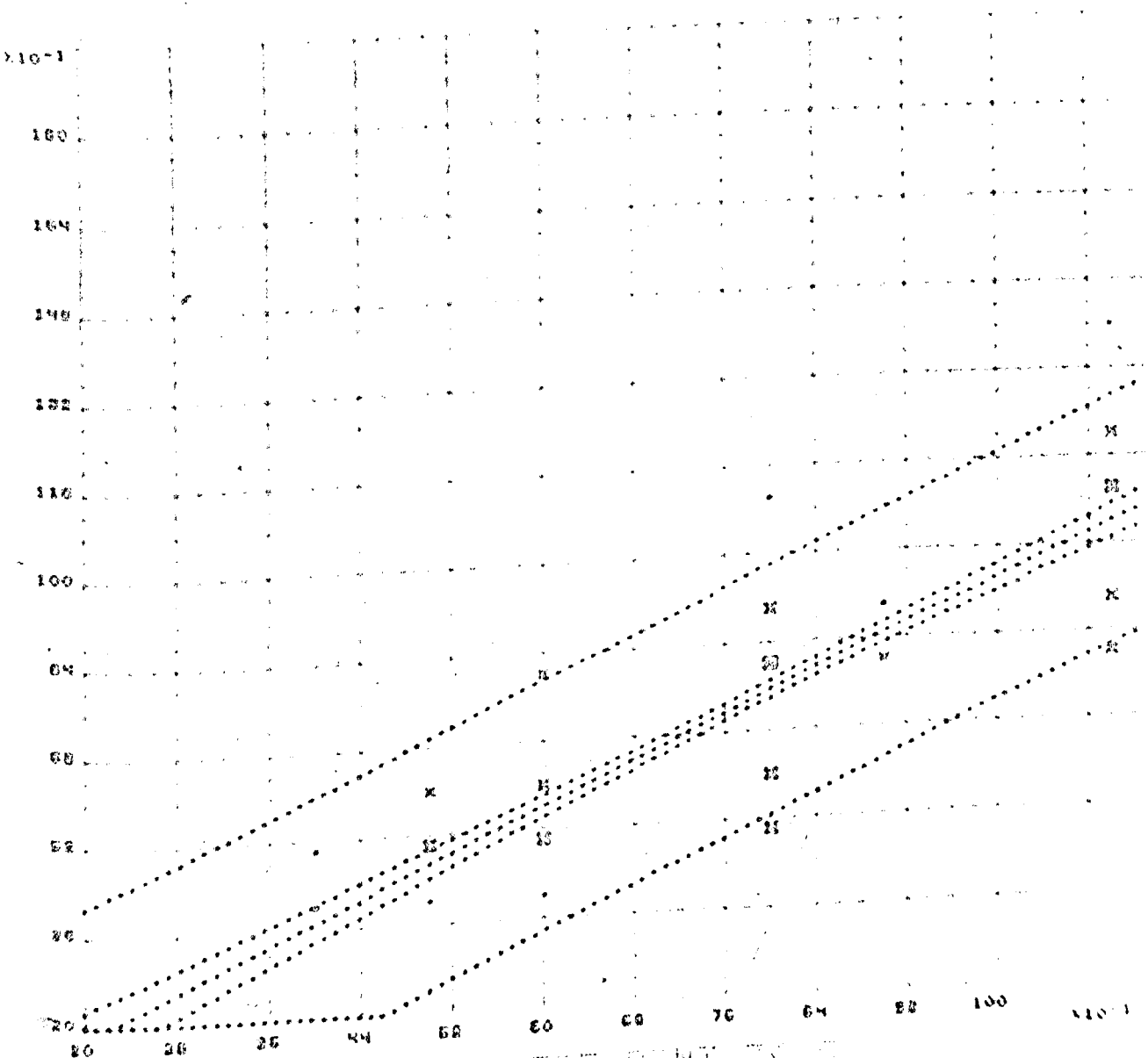
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