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Evaluating Human Resources in Commercial Loan Analysis

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EVALUATING HUMAN RESOURCES IN COMMERCIAL LOAN ANALYSIS

A Research Project

Presented to

the Faculty of the School of Business and Management

Pepperdine University

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In Partial Fulfillment

of the Requirements for the Degree

Master of Business Administration

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by

Coy Darrell Jones

December 1973

This research project, completed by

COY DARRELL JONES

under the guidance of the Faculty Committee and approved by its members, has been submitted to and accepted by the Faculty of the School of Business and Management in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

A significant problem in analyzing bank loan requests exists because of difficulty in evaluating the human component in a firm's resource structure. This research investigates a new accounting technique, human resource accounting, and identifies certain specific personality traits for correlation to a successful loan relationship. These techniques, coupled with the use of a suggested model for scoring personality tests of loan applicants, should enable a better analysis of bank loan risks.

Psychological tests were employed to measure certain personality traits of selected successful loan customers. One test used, the FIRO-B, provides indicators of certain "expressed" behavior traits and of certain "wanted" behavior traits. The statistical "t" test was applied to the mean scores for each tested trait to test the hypothesis that a significant difference existed between such "expressed" and "wanted" behavior.

The confirmation of the research hypothesis suggests that successful loan customers have distinguishing characteristics which would make psychological testing of loan applicants possible and profitable. Statistically significant differences were found in two of three tested traits. Also, inspection of mean and standard deviation scores for several additional behavioral traits reveals the possibility of using these human resource analysis techniques to evaluate loan requests.

PREFACE

Accountants have become quite adept over the past half-century at measuring a firm's financial resources, at producing balance sheets, income statements, retained earnings statements, and seemingly countless other devices, all of which attempt to relate the value of that concern. Certainly this effort has been rewarded; the financial picture of business is constantly being refined. However, it appears that perhaps the most valuable asset in a business, people, gets little attention under the financial accounting system. Human assets exist, and assuredly human liabilities also exist, in almost any given business concern. However, measurement of these assets and liabilities is not common and thus much benefit is lost to those who could profit from a human asset evaluation method.

Commercial banking, and especially the business lending-function, is an example of a particular potential user of such evaluation methods. Bankers constantly are called upon to make value judgments concerning loan requests. If a requested loan is not absolutely secure because of the borrower's financial strength or collateral position, the responsible lending officer either must decline the loan or find some reasonable basis to conclude that the loan would be repaid. Of course many loans fall into this category and are made because of the borrower's management ability, his experience in a particular field,

his general tenacity, or for many reasons other than his financial strength.

These characteristics, among others, are referred to as human assets.

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Chapter 1

INTRODUCTION TO HUMAN ASSET ACCOUNTING

To the person unacquainted with the terminology, human asset accounting or human resource accounting could have little meaning. However, the concept is easily understood-the application is the difficult part. In brief, human asset accounting is a system or method of quantifying in numerical terms, generally dollars and cents, the human resources existent in a business enterprise.

The market place has recognized for many years the existence of human resources, together with numerous other types of resources, in business corporations. Prices reflected on the New York Stock Exchange, for example, most often exceed considerably the net asset value per share of the respective corporations. The buyers of stock are giving recognition to the fact that a business is often simply worth more than figures reflected in the equity section of the balance sheet.

Burroughs Corporation is a good illustration of the point. On December 31, 1972, the company's balance sheet reflected a book value of $40.68 per share of common stock outstanding.[1] Of course, this figure was

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[1]Burroughs Corporation, Supplement to Annual Report, Detroit, Michigan, December 31, 1972, p. 6.

audited and was that value for shareholders' equity determined by use of prescribed generally accepted accounting principles.[2] However, the value per share of common stock as determined by the stock market was $217.25.[3] Now this does not mean that the company has human resources, not recorded on its balance sheet, to the extent of $176.57 (the difference between the two previously mentioned figures). It does, however, suggest that the investor is aware that the corporation is worth more than what the accountants' figures reflect and human resources are included in this excess value.

THE USE OF HUMAN ASSET ACCOUNTING BY THE BANKER

A primary reason for the development of human asset accounting is to provide better information and reporting. To the bank credit analyst and commercial or business lending officer this objective seems very desirable. Credit grantors are risk-takers and methods of analyzing this risk are in constant demand. Human resource accounting, although largely conceptual at this point in its development, offers the banker a seemingly significant tool towards a better analysis of his risks.

The classic approach to the determination of the willingness and the ability of a debtor to pay is through a consideration of the "C's" of credit.[4]

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[2] For a discussion of the determinants of generally accepted accounting principles see Accounting Research Study No. 7, Inventory of Generally Accepted Accounting Principles For Business Enterprises by Paul Grady (New York: American Institute of Certified Public Accountants, 1965).

[3] The Wall Street Journal, January 1, 1973, p. 18.

[4] Clifton H. Kreps, Jr., and Edward F. Gee, Analyzing Financial Statements (New York: The American Bankers Association, 1970), p. 7.

Willingness may be considered under the heading of "character" while the ability to pay may be considered under the headings of "capacity" and "capital." Additional "C" factors which have come to be included in the traditional analysis are "conditions" and "collateral." These factors are to be considered in studying the conditions of the particular industry in which a business operates along with the general business conditions and the security offered for the loan. It is not suggested that this type of analysis be changed. Rather, the addition of this information offered by human resource accounting can be a refinement to the classical analysis.

As readers of financial statements and related information, bankers must pass judgment upon an applicant's creditworthiness from their analyses. Of course, as noted above, non-financial factors are considered. But these factors are too often considered only from an intuitive approach, resulting in the occasional granting of credit which cannot be repaid and the just as frequent occurrence of credit being denied where the need is significant and the probability of repayment good. Human resource accounting, although certainly not developed for the exclusive use of the banker, is seen as a way to eliminate a portion of the non-objective consideration of credit. Further, the human asset evaluation methods developed later in this study should prove helpful to the banker, regardless of lending persuasion, liberal or conservative, who wishes to consider all of the relevant factors of a loan request.

The value of a firm's employees normally gets only the presentation similar to that in the president's letter in the 1970 annual report of Fruehauf Corporation. "Our greatest strength comes from the skill and dedication of

Fruehauf people throughout the world. We rely on this strength as we continue to build for the 70's." Apart from this opinion disclosure, the only other element of human value reporting is in the amount of employee compensation reflected as a current expense on the income statement. This lack of reporting places a great burden on financial statement readers in that the whole story is simply not told.[5]

Consider some examples. Suppose information was provided in a firm's financial statement that indicated substantial net profits. A close examination of the source of profits, however, revealed that they were derived from the sale of assets at prices above book value. Assuming that the firm was a going concern and the assets being sold were needed in the production of goods and services, this action would certainly appear to be mismanagement. A banker would probably think twice before extending credit to such an operator. Now contrast this situation to the plant manager who is reporting substantial net profits by "driving" his people or by eliminating training and development expenditures. The effects appear similar. Short-run income is being attained to the detriment of future operations. The credit grantor, however, would be far less likely to recognize the latter situation than the former.

Conventional accounting practices would be relied upon to disclose the first situation described above. Required footnotes and disclosures in statements audited by certified public accountants would normally prevent non-operating income from going unnoticed by the analyst. However, unless

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[5]Gale E. Newell, "Should Humans Be Reported As Assets?" Management Accounting, December, 1972, p. 13.

a company was using human resource measurement it would be impossible to determine the economic effects of the latter situation. Of course, to the person outside the company it might be impossible to even discover the existence of such practices.

The above illustrates one use of human resource accounting and perhaps could serve to allay the sometimes mistaken notion that its purpose is to determine the net worth or dollar value of the individual employee to the firm. Rather, the main goal is to develop concepts and techniques for measuring a firm's investment in its human organization, the rate at which those investments are being consumed, and which investments are more productive than others.[6]

INTERNAL USES OF HUMAN RESOURCE ACCOUNTING

Because the loan officer must many times look at a company in the same way as the manager, perhaps it would be helpful to see how this new accounting concept can assist the management of a company. The answer, in part, is a very simple one. Accounting for humans offers many of the same benefits as conventional accounting.

Consider the company who planned new equipment expenditures (physical assets) of $100,000 and also planned to invest $75,000 in recruiting, training, and development (human assets). Figures 1 and 2 below will illustrate the impact on the financial statements using both types of accounting.

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[6]William C. Pyle, "Accounting for Your People," Innovation No. 10, The Innovation Group, New York, p. 46.

Balance Sheet Additions

	Conventional	Human Resource
Physical Assets	$ 100,000	$ 100,000
Human Assets	-0-	75,000
	$ 100,000	$ 175,000

Income Statement

	Conventional	Human Resource
Sales	$ 1,000,000	$ 1,000,000
Expense	800,000	725,000
Income	$ 200,000	$ 275,000

Figure 1. How conventional accounting and human resource accounting recognize new investments

Balance Sheet Additions

	Conventional	Human Resource
Physical Assets	$ 50,000	$ 50,000
Human Assets	-0-	37,500
	$ 50,000	$ 87,500

Income Statement

	Conventional	Human Resource
Sales	$ 1,000,000	$ 1,000,000
Expenses	850,000	887,500
Income	$ 150,000	$ 112,500

Figure 2. How conventional accounting and human resource accounting recognize expiration of investments

It is obvious that conventional accounting techniques recognize the existence of the capital outlay for equipment as an asset, with benefits to be expected over an extended period of time. Accordingly, the amount of the capital outlay is not subtracted from sales in the determination of net income. Rather, income is charged only as the asset expires. In this manner, it is held that conventional accounting practice assists the manager in competing for the scarce financial resources by demonstrating that costs incurred today for capital items are expected to generate revenue over an extended period and need not be justified in relation to current revenues alone.[7]

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[7]Pyle, pp. 46-47.

This accounting treatment is not consistent for the human assets, however. Conventional accounting practice requires the immediate expensing of capital outlays for such expenditures as recruiting costs and training. It naturally follows that if the $75,000 were to be expensed in a single year whereas the $100,000 was amortized over its expected useful life, then the outlay for human development would have to be justified more than the outlay for equipment. Thus it appears more difficult for the manager to compete for the necessary financial resources to acquire and develop human capabilities.

Other analogies and contrasts can be made between the traditional accounting methods and human resource accounting. Figure 2 reflects the effect on financial statements when assets are "written-off." Conventional accounting enables the establishment of responsibility for managers over the physical assets in their care. Assume that, through carelessness, the manager responsible for the $100,000 in new equipment allows its value to be halved. As indicated in Figure 2, one-half of the $100,000 would be expensed, lowering the carrying value of the asset to its present value and reflecting the $50,000 loss in the current income period.

Human resource accounting can be used to assign responsibility in the same manner as above illustrated. If the personnel manager invested $75,000 in human resources and then, through poor management practices, wasted half, the accounting result would appear as in the right column of Figure 2. Of course, conventional accounting would expense the entire amount when incurred, eliminating the custodial potential of accounting.

There are varied other uses for human resource accounting by management. Return-on-investment computations become possible for the total project, not just for the physical asset portion. Also, it can be of significant benefit in analyzing employee turnover, in long-range manpower planning, and in capital budgeting decisions. And certainly these are not all of the internal capabilities of human resource accounting.

EXTERNAL USES OF HUMAN RESOURCE ACCOUNTING

It already has been suggested that investors could make appropriate use of methods to appraise human abilities. Indeed since many financial analysts claim that managerial talent is the key factor in an investment appraisal, it seems mandatory to develop a measure for that talent.

Human resource accounting also has important social implications. Banking and other industries are giving increasing attention to problems of training members of disadvantaged groups. The United States Department of Labor subsidizes certain training efforts, and Congress has provided certain work-incentive tax credits for employers. The techniques and procedures of human resource accounting offer a new tool for evaluating and justifying such expenditures.

Finally, creditors of companies employing these techniques should be better able to analyze the capabilities of management. Bankers who are requested to loan to capital-deficit businesses-should be better able to appraise management's ability to offset that weakness. These techniques have implication

also in the area of minority lending where the financial factor of the applicant is frequently weak.

SCOPE OF THIS STUDY

The balance of this paper has two main purposes. Chapter 2 discusses the specific techniques which have been proposed for the implementation of human resource accounting. The first purpose then is to acquaint those who are interested in the analysis of financial statements with the probable forms which human resource accounting will take.

The second purpose is to identify certain traits or characteristics found in commercial loan customers. These traits are held to be among the range of non-financial resources which contribute to loan successes or failures. Chapters 3 and 4 discuss the research techniques used and the results thereof. These personality traits, properly referred to as human resources if they contribute to the success of an enterprise, hopefully can be used to develop a predictive system to facilitate the analysis of commercial loan requests.

Chapter 2

TECHNIQUES OF HUMAN ASSET ACCOUNTING

Much of the credit for the proposing of this procedure must be given to the social scientists. Although the practice of accounting is certainly involved, it appears that the accountants became interested only after the need was made evident by others. One of those who has been most active in the development of human asset accounting is Dr. Rensis Likert, director emeritus of the University of Michigan's Institute for Social Research.

Likert was specifically concerned with accounting's pre-occupation of reporting only end-result variables, such as costs and profits, while generally ignoring the causal and intervening variables, which through changes in morale and attitude, could affect future costs and profits. [8] (Causal variables are defined as independent variables which determine the course of developments within an organization and the results it achieves; intervening variables are those which reflect the internal state of health of the organization such as loyalties, attitudes, and motivation; and end-result variables are the dependent variables which reflect the organization's achievements, such as

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[8] The Human Organization: Its Management and Values (New York: McGraw-Hill Book Company, 1967), pp. 27-29.

costs and earnings.) He recognized that situations similar to those suggested in Chapter 1 (pp. 4-5) were quite possible and are not recognized under present accounting methods. [9]

In measuring the causal and intervening variables, Likert suggested that a number of organization, management, and key employee traits should be considered. Among these were the following:

1. Level of intelligence and aptitudes
2. Level of training
3. Level of performance goals and motivation to achieve organizational success
4. Quality of leadership
5. Capacity to use differences for purposes of innovation and improvement, rather than allowing differences to develop into bitter, irreconcilable, interpersonal conflict
6. Quality of communication upward, downward, and laterally
7. Quality of decision making
8. Capacity to achieve cooperative teamwork versus competitive striving for personal success at the expense of the organization
9. Quality of the control processes of the organization and the levels of felt responsibility which exist
10. Capacity to achieve effective coordination
11. Capacity to use experience and measurements to guide decisions, improve operations, and introduce innovations. [10]

Also pioneering the development of human resource accounting techniques has been the R. G. Barry Corporation, Columbus, Ohio. Working

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[9]Likert, pp. 147-155.

[10]Likert, p. 148.

with Likert and his associates, this company has developed a reporting system which records human assets as a supplement to the financial records of the concern. More discussion of the R. G. Barry Corporation system will follow later in this chapter.

It should be noted that much of the impetus to the conceptualization and development of human resource accounting appears to have resulted from the impact of a changing managerial philosophy. To become interested in the worth of humans suggests a move away from authoritative types of management to those which are more participative and including. To implement human resource accounting involves a recognition of the central importance of people to the success of an enterprise.

THE CURRENT PROPOSALS

Several methods have been proposed as possibilities for the implementation of the procedure for recording human resources in financial statements. It seems probable that different firms might legitimately use different methods. Therefore, it follows that the readers of financial statements should be familiar with each of the techniques.

Acquisition Costs

The acquisition costs method suggests that the firm accumulate the various costs which are incurred prior to the time that an employee becomes productive. In other words, all costs would be capitalized as assets pending receipt of the income from the employee's productivity. Therefore, a matching of the income and related expense is achieved. Costs which would be capitalized

include those associated with recruitment, training, job familiarization, and any other "start-up" expenses in placing the new employee in the organization.

A problem associated with this proposal exists since costs may not equal value. Just because a person was acquired at a specified cost does not mean that he has a like value to the firm for future production. Of course, this problem also exists for "traditional assets."

Replacement Costs

Basically, proponents of the replacement costs technique hold that the human has a value based upon the estimated replacement cost of an employee of equal talent. Naturally, the value of an employee to an enterprise could exceed substantially the actual outlay of money which the company had sustained. It follows that replacement costs often exceed historical costs.

Salary Capitalization

The salary capitalization technique involves the calculation of the present value of future employee salaries. The discounted value is then reported as an asset in the balance sheet. Of course this method assumes a positive relationship between an employee's future salary and his value to the business.

Economic Value

The most subjective of the proposals, the economic value approach requires that a human resources asset be recorded equal to the present value of future earnings derived from such assets. These methods include the "present value" method and the "goodwill" method.

Included in the calculation of economic value would be a recent proposal by Dr. Likert.[11] He suggests that to evaluate properly a company, changes in the dollar value of its personnel must be determined for each reporting period. To not do so, he holds, results in the improper assumption that the productive capacity of the human organization has not changed during the period.

CURRENT APPLICATIONS OF HUMAN RESOURCE ACCOUNTING

As mentioned previously, R. G. Barry Corporation has incorporated human resource accounting in its system. There have been other efforts which employ some of the techniques. It is felt that a familiarization with these early attempts will be helpful as the methods gain increasing use and acceptance.

The R. G. Barry Corporation

This publicly owned company (listed on American Stock Exchange) has perhaps been the foremost innovator to date among those who have used one or more forms of human asset accounting. Since 1969 the company has included in its published financial reports two sets of financial data, one using conventional reporting methods only and the other based on inclusion of human resource information. Figure 3 contains the 1970 financial statements for illustration.

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[11] "A New Twist to People Accounting," Business Week, October 21, 1972, pp. 67-68.

BALANCE SHEET

	Conventional and Human Resources	Conventional Only
Assets		
Total Current Assets	$ 10,944,693	$ 10,944,693
Net Property, Plant and Equipment	1,682,357	1,682,357
Excess of Purchase Price of Subsidiaries over Net Assets Acquired	1,188,704	1,188,704
Net Investments in Human Resources	942,194	-0-
Other Assets	166,417	166,417
	$ 14,924,365	$ 13,982,171
Liabilities and Stockholders' Equity		
Total Current Liabilities	$ 3,651,573	$ 3,651,573
Long Term Debt, Excluding Current Installments	2,179,000	2,179,000
Deferred Compensation	77,491	77,491
Deferred Federal Income Taxes Based Upon Full Tax Deduction for Human Resource Costs	471,097	-0-
Stockholders' Equity:		
Capital Stock	1,087,211	1,087,211
Additional Capital in Excess of Par Value	3,951,843	3,951,843
Retained Earnings:		
Financial	3,035,053	3,035,053
Human Resources	471,097	-0-
Total Stockholders' Equity	8,545,204	8,074,107
	$ 14,924,365	$ 13,982,171

Figure 3. R. G. Barry Corporation and Subsidiaries, Pro-Forma (Conventional and Human Resource Accounting)*

*Used by permission of R. G. Barry Corporation.

STATEMENT OF INCOME

Net Sales	$ 28,164,181	$ 28,164,181
Cost of Sales	18,252,181	18,252,181
Gross Profit	9,912,000	9,912,000
Selling, General and Administrative Expenses	7,546,118	7,546,118
Operating Income	2,365,882	2,365,882
Other Deductions, Net	250,412	250,412
Income Before Federal Income Taxes	2,115,470	2,115,470
Net Increase (Decrease) in Human Resource Investment	(43,900)	-0-
Adjusted Income Before Federal Income Taxes	2,071,570	2,115,470
Federal Income Taxes	1,008,050	1,030,000
Net Income	$ 1,063,520	$ 1,085,470

Barry originated its system in January, 1968. Originally human resource data were collected and recorded for ninety-five managers. The costs were accumulated in seven functional accounts which are defined as follows:[12]

Recruiting outlay costs-costs associated with locating and selecting new personnel. This category includes search fees, advertising, interviewer and interviewee travel expenses, allocations of personnel, and acquiring department time for internal screening, interviewing, testing, and evaluation expenses. Outlay costs for persons not hired are allocated to the cost of the eventual successful candidate.

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[12]Robert L. Woodruff, Jr., "Human Resource Accounting" (an article reprint provided by R. G. Barry Corporation; the article was published in the September, 1970 issue of the Canadian Chartered Accountant. Mr. Woodruff is Vice President of Human Resource and Management Services for R. G. Barry Corporation).

Acquisition costs-costs incurred in integrating the newly hired man into the organization. This category includes placement fees, moving costs, physical examination, allocation of personnel, and acquiring department time in placing a man on the payroll and situating him with the necessary equipment to perform his job.

Formal training and familiarization costs-costs normally incurred immediately after hire or possible transfer from one location to another. These costs refer to formal orientation programs and to similar methods of training.

Informal training costs-costs associated with the process of teaching a new person to adapt his existing skills to the specific requirements of his new job. The costs related to the process are normally salary allocations only and vary with each position depending upon the level of the job in the organization, number of subordinates, and other variables.

Familiarization costs-costs associated with the complex process of integrating a new manager into the organization to the point where he is a fully effective member. Such costs include learning the company's philosophy, history, policies, objectives, communications patterns, past practices, precedents, and understanding of the people with whom the new position holder will interact.

Investment building experience costs-costs associated with investments in on-the-job training which occur after the initial

familiarization period and which are expected to have value to the company beyond the current accounting period. Investment building experience is the development of a capability which would not reasonably be expected as a normal part of the person's job.

Development costs-costs associated with investments in increasing a manager's capabilities in areas beyond the specific technical skill required by the position. In this category are management seminars, university courses, and other formal training. Costs are collected and then modified based upon the participant's evaluation of the pertinency of the study.

As can be seen from a study of the functional accounts, human resource accounting includes both objective and subjective data to some degree. The first three categories of costs appear reasonably capable of objective, accurate measurement. However, the last three categories would appear to involve subjective estimates which exceed the degree of objectivity required for current financial reporting standards.

It should be noted that Barry offers a caveat to the readers of its statements which include human resource accounting. The following quotation from the 1972 annual report illustrates:

> The information presented on this page is provided only to illustrate the informational value of human resource accounting for more effective internal management of the business. The figures included regarding investments and amortization of human resources are unaudited and you are cautioned for purposes of evaluating the performance of this company to refer to the conventional certified accounting data further on in this report.

Electronic Data Systems

This New York Stock Exchange listed company has also used human resource accounting in its published financial statements. For example, the 1970 annual report included an asset (recorded as a deferred charge) on the balance sheet for the cost of training systems engineers. This amount is amortized to expense over a two-year period, with an immediate write-off if a trainee leaves the firm during the training period.[13]

The company follows a reverse sum-of-the-digits method in amortizing the accumulated training costs. This method, which results in increasing charges against income, is based on the assumption that the employee becomes more experienced and productive over time. Therefore, to properly match income and expense, smaller charges to expense should be made in the early years subsequent to training and larger charges in the later years.

Other Users of Human Resource Accounting

A number of other major companies are now involved in research and programs to employ these techniques. Among those readily recognized names are General Motors Corporation, Proctor and Gamble, Mobil Oil, Texas Instruments, PPG Industries, Westinghouse Electric, The Budd Company, and General Telephone and Electronics.[14]

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[13]Marvin Weiss, "Accounting for Human Resources," Bank Administration, December, 1972, p. 15.

[14]R. G. Barry Corporation, Annual Report, Columbus, Ohio, December 31, 1972, p. 13.

It appears that the increasing research will result in more and more use of human asset accounting methods as the techniques are refined and gain acceptance. R. G. Barry Corporation alone reports to have received inquiries from over 600 companies concerning its procedures in applying this concept.

THE NEGATIVE CASE

As is the case with most innovations, accounting for human resources has its critics. And by traditional standards, much of the criticism has merit. The criticism of the concept appears to center in five main areas.

Indeterminant Future Benefit

How do you measure the future value of employee training? Over what time period will the employee development have payoff? Will training have benefit at all? These and similar questions form the nucleaus of this argument which says that the relative inability to determine the future benefit of such an "asset" is reason enough to take the position that it should be expensed. (This argument appears to overlook the fact that traditional accounting, in many instances, relies upon estimates-for example, depreciation of equipment depends upon an estimate of the expected useful life of the equipment).

Ownership Status

Certainly human assets are not "owned" in the conventional sense of the word, raising the question of why should a company capitalize an expenditure over which, in many ways, it has no control. Many of those who take this position also suggest that negative connotations associate with the idea

of "owning" human resources. It is felt that employees would be opposed to capitalization of human resources because it would imply that the company "owned" its employees.

Objective Amortization Problems

Similar in many ways to the first argument, these hold that no objective basis exists for determining the manner in which a human asset should be amortized. Because the time period that an employee will remain with a firm is uncertain, it is argued that the amortization rate is too subjective. In view of this uncertainty, the costs should be expensed.

Employee Turnover

Because employees are becoming more and more mobile, it is argued, the proper treatment of such costs is expensing. This concept is held to be proper because the training and development effort is ongoing and new expenditures would more or less approximate amortization of prior costs which had been capitalized.

Violates Definition of Asset

Certified public accountants, in issuing opinions on financial statements, must be certain that the statements reflect the use of generally accepted accounting principles. Robert T. Sprouse and Maurice Moonitz suggest a definition which has general acceptance at present:

> Assets represent expected future economic benefits, rights to which have been acquired by the enterprise as a result of some current or past transaction. To come within the purview of assets, the scarce resources must be assignable to specific entities, must be capable of

> exchange (transfer), either separately or as part of a related group, and must be expressible in terms of money....[15]

It is held that human resources do not meet the criteria of an asset because a firm has no control over any particular human's resources and, in fact, never acquires the right to future benefits. Thus, humans are definitionally excluded from classification as assets.

THE PROPONENT'S VIEWS

Many of the merits of human resource accounting have already been discussed. However, the specific points raised by the critics of these techniques have not been answered. It is the opinion of the advocates that the negative arguments discussed in this chapter generally represent only minor barriers to eventual implementation.

In determining future benefit of expenditures, the proponents distinguish between "general" and "specific" personnel costs. Costs of training a specific employee may not be an asset because he is free to leave at any time. But from the broader view of human resource accounting, any expenditure which serves to increase morale and productivity is properly capitalized.

Arguments against human asset accounting based on legal ownership of assets are answered simply by pointing out that benefits accrue from many resources to which a firm may not have legal ownership. Also, accounting

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[15] A Tentative Set of Broad Accounting Principles for Business Enterprises (New York: American Institute of Certified Public Accountants, 1962), p. 8.

recognizes other assets which are not "owned"; for example, long-term leases which are capitalized.

The objectivity of amortization problems could be solved by actuarial methods which are based on employee turnover data and other information which helps measure future productivity. Employee mobility and resultant turnover is not seen as a problem because an employer normally would not incur large development expenditures if he had reason to expect the employee to leave before realizing a return on his "investment."

Finally, to suggest that human resource accounting should not be accepted because it does not fit traditional definitions appears as a weak argument. If proven of merit, the new methods will cause the definitions to be changed.

SIGNIFICANCE OF HUMAN RESOURCE ACCOUNTING TECHNIQUES AND CONCEPTS

Human resource accounting procedures suggest a new emphasis, giving both management and external users of financial data new information upon which to evaluate the historical performance and future capability of organizations. It implies a cooperative effort between those who generate the data and those who interpret and use them. And, it suggests a necessary collaboration between the accounting profession and the social scientists. The accountants, it seems, must move away from strict adherence to traditional methods, away from sole concentration on the financial aspects of a concern to an inclusion of human resources. The social scientists must assist the accountant in developing measurement techniques for values

of humans while at the same time understanding the accountant's requirements for reporting.

To the financial analyst, the banker included, human resource accounting represents a challenge. It will be a challenge to develop exterior means of determining the validity of the newly reported assets and it will be an opportunity to devise techniques for including these resources in the loan analysis.

Chapter 3

IDENTIFYING SPECIFIC HUMAN RESOURCES

The concepts and techniques of human resource accounting discussed previously hold promise for the banker in evaluating an aspect of his customers that previously has been difficult to quantify, assuming any attention was given at all. Human resource accounting should facilitate a broader analysis of a company's capability than has been possible in the past, with obviously more emphasis placed on the human component. The banker who is analyzing a loan request can employ traditional yardsticks supplemented with new information about the economic value of its people.

This new emphasis on the "people value" of an enterprise suggests another complementary approach which would appear to be of value to the banker in analyzing loan requests. Why not identify the specific human traits of the applicants? Certainly lenders have sought to determine the managerial capabilities of its applicants in the past, but this procedure generally appears to have been intuitive. Few techniques exist for objective evaluation of these human characteristics which, in the opinion of many lenders, are usually more important than the financial position of the borrowers.

The suggestion that human traits could be identified, measured, and related to loan successes forms the basis for the balance of this study.

THE RESEARCH PROBLEM

The basic problem asks what relationships, if any, exist between human assets identified for successful commercial loan customers and the established pattern of repayment of these customers.

The Hypothesis

This study suggests several approaches in analyzing the data developed by psychological testing of successful loan customers. One of the tests used, the FIRO-B Scale (see Page 31), provides indicators of both "expressed" behavior toward others and "wanted" behavior from others with respect to three personality traits. These traits are a measure of how a person acts in interpersonal relationships.

It was hypothesized that a significant difference existed between the "expressed" and "wanted" FIRO-B scores for the tested customers. Actually, the test hypothesis is divisible into three separate hypotheses which may be stated:

Hypothesis 1: A significant difference exists between the inclusion expressed and the inclusion wanted for successful commercial loan customers.

Hypothesis 2: A significant difference exists between the control expressed and the control wanted for successful commercial loan customers.

Hypothesis 3: A significant difference exists between the affection expressed and the affection wanted for successful loan customers.

Note should be made that the hypotheses are stated for successful loan customers only. It appears that, in most instances, a loan relationship which proves unsuccessful to the bank creates a breach with the customer. This fact prevented historical research on loan failures.

Two tests used, the Gordon Personal Inventory (see Page 32) and the Gordon Personal Profile (see Page 33) provided indicators of the level of eight additional personality traits of the tested customers. These traits were studied and scores analyzed by inspection of the means and standard deviations to determine if any trait appeared to be particularly outstanding in this population.

A Predictive Model

Another approach in using these data was to formulate a theoretical model to predict loan outcomes by psychological testing. Banks have used risk evaluation tools with considerable success in the installment lending area. However, the commercial lending function is not so easily quantified, and thus credit scoring systems have not been generally used.

It appears possible to develop a system where customers can be tested for certain traits. These traits, previously having been correlated to successful loans, could then be given a point value similar to the installment loan scoring methods. These systems attempt to analyze relative

values of various personal traits and financial characteristics, assigning a weight or score to each variable.[16] Or, perhaps an upper and lower limit could be set for scores of each trait. Using this approach, if an applicant scored within a given range, it could be predicted that he would become a successful customer.

The Research Design

The primary applicability of a method to predict loan outcomes by measuring personality traits would appear to be among customers who do not have a strong financial base. It seems obvious that if the loan applicant is extremely strong financially, or if collateral is being offered which makes the lender almost certain to be repaid, the loan decision is greatly simplified. The difficulty, and the apparent need, is in the area of those loans where greater reliance must be placed on the applicant, upon those assets which are part of the person rather than a part of his financial estate.

As suggested by the above paragraph, the research was then centered on customers which were selected subjectively on the basis that they had become good loan customers without the benefit of a strong financial background. Psychological tests were administered to measure the presence, or absence, of certain characteristics which, hopefully, would correlate to the successful loan relationship.

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[16]P. F. Smith, "Measuring Risk on Consumer Installment Credit," Management Science, Volume II, November 2, 1964 (as cited in Franklin E. Burgamy, "Establishing a Dealer Finance Department, "Financial Advances, Stonier Graduate School of Banking of American Bankers Association and Financial Publishing Company, Boston, 1972), p. 34.

The method of testing for a significant difference in the FIRO-B scores, or proving the hypothesis, was the "t" test. This method is described in Chapter 4 where the results are stated.

The Subject Customers

Several criteria, most of which were subjective evaluations, were employed in selecting subjects. These included

Established record of repayment-As noted earlier, the testing was on successful customers only. Each of the subjects selected had evidenced, on more than one occasion, the ability to meet his loan obligation currently. None of the subjects has had a "problem" loan.

Less than strong financial position-Although several of the subject customers have now achieved relative financial stability and independence, each has experienced times when such was not the case. Further, the successful loans referred to occurred, at least in part, during the customer's financial development.

Entrepreneurial abilities-All of the subject customers have evidenced some degree of entrepreneurism. This criterion means that they have sought risks for the opportunity of financial gain and have been successful in the outcomes. This stipulation does not suggest that the risks referred to would necessarily be "high" ones.

Following the above selection process, the tests were given to twelve commercial loan customers of Longview Bank and Trust Company, Longview, Texas.

METHODS OF TESTING

Tests were sought which would measure the human assets of the subject customers. Certainly the myriad of traits which constitute a personality would not all appear to be related to a successful loan relationship. But as Likert suggests that certain variables influence the value of an organization (see Page 12), it also seems that many traits which individuals possess contribute to their financial success. Some specific examples would appear to be intelligence quotient, tenacity, and interpersonal relationship abilities.

The most suitable tests for this project appeared to be the FIRO-B Scales,[17] the Gordon Personal Inventory,[18] and the Gordon Personal Profile.[19] These tests provide indicators of the level of several personality traits. The FIRO-B Scale was used to determine the behavior level of the customer with respect to

Inclusion-This trait is defined as the need to establish and maintain a satisfactory relationship with people with respect to interaction and association. For example, a positive "includer" desires communication, belonging, tends toward being an extravert,

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[17]William C. Schutz, The FIRO Scales Manual, Consulting Psychologists Press, Inc., Palo Alto, California, 1967, pp. 4-5.

[18]Leonard V. Gordon, Gordon Personal Inventory Manual, Harcourt, Brace & World, Inc., New York, 1963, p. 3.

[19]Leonard V. Gordon, Gordon Personal Profile Manual, Harcourt, Brace & World, Inc., New York, 1963, p. 3.

and is interested in others. The negative aspect of inclusion is illustrated by the desire to isolate, to ignore, and to withdraw.

Control-This trait evidences the need to establish and maintain a satisfactory relationship with people with respect to control and power. Control behavior refers to the decision-making process between people and is positively evidenced by expressions of power, authority, and dominance. Negative aspects of control are reflected in submissiveness, being a follower, or evidencing resistance.

Affection-This trait is defined as the interpersonal need to establish and maintain a satisfactory relationship with respect to love and affection. Some terms which connote positive affection are personal, friend, and intimate. Negative affection is illustrated by rejecting or being distant-not emotionally close.

The FIRO-B scale is actually six scales since it provides a measure of both the expressed behavior and the wanted behavior from others for each of three traits noted.

The Gordon Personal Inventory was used to provide indicators of the following personality traits

Cautiousness-Highly cautious people, those who do not like to take chances or run risks, score high on this scale. The scale is designed to reflect low scores for those who make hurried or snap decisions, enjoy taking chances, or seek excitement.

Original Thinking-High scoring individuals on this scale like to work on difficult problems, are intellectually curious, enjoy thought-provoking questions and discussions, and like to think about new ideas. Conversely, low scoring individuals dislike working on difficult or complex problems, do not care about acquiring knowledge, and are not interested in probing, thought-provoking endeavors.

Personal Relations-This scale is designed to measure the faith and trust which individuals have in others. High scores reflect tolerance, patience, understanding and trust. Low scores indicate a lack of trust or confidence in people, and a tendency to be critical of others and to become annoyed or irritated by what others do.

Vigor-High scores on this scale characterize individuals who are vigorous and energetic, who enjoy work, who move rapidly, and who are able to accomplish more than the average person. Low scores are a reflection of a low vitality or energy level, a preference for a slow pace, a tendency to tire easily, and an inability to match the high scorer in terms of sheer productivity.

Finally, the following personality traits were scored by use of the Gordon Personal Profile

Ascendancy-High scorers on this measure are individuals who are verbally ascendant, who adopt participating roles in groups, are self-assured and assertive in relationships with others and tend to make independent decisions. Those who take passive roles

listen rather than talk, lack self-confidence, let others take the lead, and are overly dependent on others for advice, normally make low scores.

Responsibility-Individuals who have the ability to carry out any job assigned to them, who are persevering and determined and who can be relied upon will score high on this scale. Low scores are usually made by individuals who flee from tasks that do not interest them and who tend to be flighty or irresponsible.

Emotional Stability-This scale is designed to measure the degree to which individuals are well-balanced, emotionally stable, and free from anxieties and nervous tensions (as reflected by high scores). Low scores are associated with excessive anxiety, hypersensitivity, nervousness, and low frustration tolerance.

Sociability-Generally, high scores are made by individuals who like to be with and to work with people, and who are gregarious and sociable. Low scores are indicative of a lack of gregarious and restriction in social contacts.

In addition to the tests mentioned, a basic personal information form was prepared by each subject for the purpose of providing biographical information along with certain additional evaluative material.

LIMITATIONS OF RESEARCH

Certain weaknesses were recognized which could affect the research outcome. These limitations would probably be greatly minimized

if the research were conducted over an extended time frame and with larger samples. However, within the framework of this study the points noted below should be considered as limiting conditions.

Non-negative Data

It has already been mentioned that the subject customers were successful ones only. No tests were administered to loan customers who had "problem" loans or to those where the bank had sustained a loss. This limitation could be overcome if the tests were administered to all customers at the origin of the loan. Then those individuals whose loans became a problem could be studied to determine if the testing could have been used to predict the difficulty. Obviously, this procedure suggests an extended time frame of study, possibly covering several years.

Sample Size and Composition

No absolute assurance exists that a sample of twelve customers is sufficient to validate the hypothesis in the research. Further, the subject customers were selected from several occupations and professions. It is a possibility that traits which contributed to the success of a given customer in a given occupation would not be significant to another customer in a different occupation.

This limitation would appear to be overcome if the tests were administered to many customers within the same occupational classification. Such a procedure would seem to facilitate the establishment of normative data for the particular occupation, making comparisons more reliable.

Relevancy of Tested Traits

The traits which were measured for each of the customers were selected because of the availability of reliable tests. It is possible that other traits might be more predictive of loan outcomes than those measured.

Chapter 4

RESEARCH RESULTS

As can be noted from the data presented in tables at the end of this chapter, the subject customers reflect a broad range of personality trait levels. The biographical data prepared by each subject will perhaps give some indication of the related scoring and the reasons for the wide dispersion. The following is a brief synopsis of the biographies of the customers.

SUBJECT BIOGRAPHIES

Customer Number 1 is thirty-six years old with graduate-level education, is employed as a bank president, is married and is the father of three children. He is active in community affairs and has considerable outside business interests. He describes himself as a perfectionist, easy going, and able to get along well with people.

Customer Number 2 is a forty-three year old self-employed insurance executive with business interests in real estate and ranching. He has three years of college and is married with one son. Being apparently very conscious of his physical condition, he has a one-and-a-half-hour daily workout and describes himself as hard working, ambitious, and a self-starter.

Customer Number 3 is fifty-one years of age, single (divorced) and is self-employed as a realtor and developer. College educated, he describes

himself as pleasant, understanding, and considerate of others. He lists his strongest qualities as hard work and determination.

Customer Number 4 is the owner of an electronic business machines firm with interests in ranching, land development, and income properties. He is forty-three years of age, married with three children, and is college educated. He describes himself as moody but easy to get along with.

Customer Number 5 is a twenty-six year old owner of a swimming pool sales and installation concern and has other business interests in real estate rentals. Married with no children, he has four years of college (no degree) and one year of law school. This customer describes himself as ambitious, aggressive, determined, and shy.

Customer Number 6 is forty-six years old and the owner of a chemical solvents firm with several facilities. Outside business interests include ranching, rentals, and equity investments. Married with three children, he describes himself as a dedicated worker who works too much, and who has an ability to get along with people. Education of this customer included six hours of graduate study after an undergraduate degree in accounting.

Customer Number 7 is a fifty-one year old orthodonist who derives outside income from real estate investments, banking, saving and loan association, and cattle. Married and the father of twin sons, he holds the doctor's degree in dentistry. His self-description includes comments such as stern, accommodating, candid without being calloused, and a dual personality.

Customer Number 8 is forty-five years of age, married and has two children. His education includes high school and business college training. He is self-employed as a real estate developer with other business interests in banking, insurance, theaters, apartments, and land syndication. He describes himself only as a hard worker, listing his strongest qualities as judgment, drive, and desire.

Customer Number 9 is fifty-three years old, married and the father of two children. Educated with two years of college, he is self-employed in commercial real estate development, owning several shopping centers in the Southwest. Previous business experience included chamber of commerce management. This customer describes himself as creative, gregarious, and a hard-worker and -player.

Customer Number 10 is forty-three years old and has a BBA degree. Married and the father of three children, he owns an oil company jobbership. His considerable outside business interests include real estate rentals, developments, and banking. His self-description includes such terms as discriminating in taste, patient, perceptive and one who likes challenges.

Customer Number 11 is forty-three years old, high school educated, and is the owner of a restaurant equipment sales concern. He is married and the father of four children. He has no outside business interests. He describes himself only as being fearless.

Customer Number 12 is a thirty-eight year old attorney with an outstanding law practice and with extensive real estate business interests.

Married with two sons, he describes himself as having average intelligence, average appearance, but with above average ability to persuade people.

TESTS OF HYPOTHESES

The FIRO-B scores can be observed from Table 1 at the end of this chapter. Recalling that the three hypotheses stated a belief that a significant difference existed between the "expressed" and "wanted" scores, particular attention is directed to the mean for each category.

As noted earlier, the "t" test was used to test the hypotheses. This test enables statistical testing for significant differences between two population means and is particularly appropriate for small samples. No attempt will be made to provide the statistical derivation for this technique; most introductory statistic textbooks describe the computations. For those desiring a specific reference see Taro Yamane's, Statistics, An Introductory Analysis.[20]

Usual statistical convention requires that the hypothesis to be tested be that of "no relationship or difference" and is termed the "null hypothesis." Therefore, the first hypothesis to be tested is stated:

H_1: There is no significant difference between the mean scores for inclusion expressed and inclusion wanted for successful loan customers.

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[20](New York: Harper and Row, 1964), pp. 482-489.

The "t" ratio is next determined by use of the following equation:

$$t = \frac{M_1 - M_2}{\sqrt{\left(\frac{S_1 + S_2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 N_2}\right)}}$$

where "M" is the population mean, "S" is the sum of squares, and "N" is the number in the population. For purposes of testing the hypotheses herein it was decided that the "t" ratio would be deemed significant if it exceeded the .05 level of significance.

The "t" ratio thus determined for FIRO-B inclusion scores is 3.77. Using a statistical table for the "t" distribution, with 11 degrees of freedom, it is observed that the level of significance of such a score is less than .005. Thus, the probability of a "t" score of 3.77 occurring is less than .005 and it is concluded that a significant difference does indeed exist. Thus, the null hypothesis is rejected.

The second hypothesis to be tested is stated:

H_2: There is no significant difference between the mean scores for <u>control expressed</u> and <u>control wanted</u> for successful loan customers.

Applying the above stated equation, a "t" ratio of 3.20 is determined. Again using the statistical table, with 11 degrees of freedom, the level of significance is again observed to be less than .005. Again it is concluded that a significant difference does exist and the null hypothesis is rejected.

The third hypothesis to be tested may be stated:

H3: There is no significant difference between the mean scores for affection expressed and affection wanted for successful loan customers.

Using the previously stated equation, a "t" ratio of 1.74 is thus derived. From the statistical table it can be seen that the level of significance of such a value is less than .10 but greater than .05. The null hypothesis is therefore accepted.

In summation, the testing of the three hypotheses revealed a significant difference in the mean scores for inclusion and control traits, but indicated that there was no significant difference in the mean scores for the affection trait. This result would appear to give support to an intuitive belief about successful businessmen-namely, that they wish to "control" more than they desire to be "controlled." A similar conclusion could be drawn about inclusion behavior. This study suggests that these individuals are more given to including others than they desire to be included themselves.

The absence of a significant difference in the mean scores for affection expressed and affection wanted would possibly suggest that this personality trait is not a strong indicator of expected behavior of successful loan customers. Its value as a tool in loan applicant analysis is properly questioned.

OTHER RELATIONSHIPS

The Gordon Personal Inventory and Gordon Personal Profile scores are reflected on Tables 2 and 3. Tables 4 and 5 reflect frequency distribution by percentiles for the same tests.

Certain normative data are provided by the manuals for these tests to which the subject scores may be compared and ranked. The raw scores reflected on Tables 2 and 3 were converted to percentiles by use of the tables provided for male executives.[21]

Inspection of the scoring for these personality traits reveals certain characteristics which appear to be of significance. Note from Table 4 the fact that ten of the twelve subjects were above the 50th percentile on vigor and a like number were below the 50th percentile on personal relations. The first statistic supports the often-held notion that successful businessmen are highly energetic, particularly since no one scored below the 26th percentile. However, the personal relations scores would appear to belie the belief that this trait is a common characteristic to be found in successful loan customers. The validity of these scores is reinforced by the relatively small standard deviations as reflected on Table 2.

Of apparent significance also are the scores for original thinking. The percentile distribution of the subject scores reflect six below the 51st

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[21]Leonard V. Gordon, Gordon Personal Inventory Manual, Harcourt, Brace & World, Inc., New York, 1963, p. 6 and Gordon Personal Profile Manual, Harcourt, Brace & World, Inc., New York, 1963, p. 7.

percentile with three of those below the 26th percentile. Note that only one reflected a very high percentile score. This single high score, of course, suggests that successful loan customers are not necessarily the intellectually curious and is again supported by a relatively small standard deviation on Table 2.

Of final note is the responsibility scores, recorded on Table 3 with percentile frequency recorded on Table 5. With eight subjects, two-thirds of the test population, below the 51st percentile, these scores suggest that successful loan customers of the type selected may not be particularly persevering. While this certainly does not fit the traditional determination of a desirable loan customer, these scores too are supported by a relatively small standard deviation.

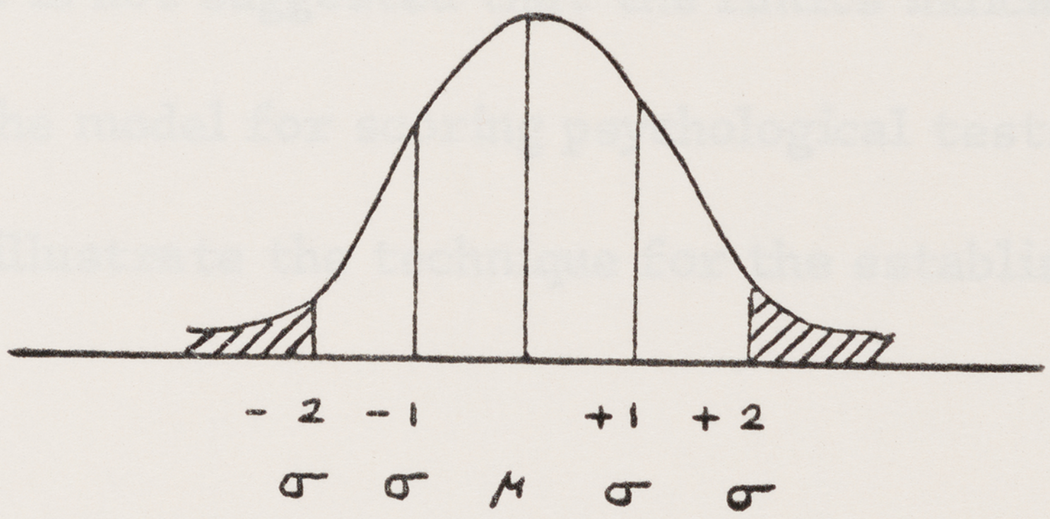
The large relative standard deviations for cautiousness on Table 2, and ascendancy, emotional stability, and sociability on Table 3, would appear to render these traits less useful as indicators of expected behavior traits for successful loan customers.

A POSSIBLE MODEL

The data in Tables 1 through 5 can be viewed as a behavioral profile of this group of loan customers. As suggested in the previous chapter, it appears possible to develop a model which could be used as a predictor of the success or failure of a loan relationship. Such a model could be invaluable to the bank lending officer who truly sought to analyze the applicant's abilities.

Although it is not suggested that the present research is extensive enough to form a model base, perhaps it could serve as an example. Fourteen factors are scored in Tables 1, 2, and 3. The statement could be made that the fourteen mean scores represent how a successful loan customer should behave, with respect to these traits. Further, given sufficient developmental data, it could be determined the amount of deviation in either direction from the mean that the customer could score and still be expected to be successful. In other words, upper and lower limits could be set for each trait.

Suppose, for example, that it was desired to test the behavioral traits of customers at the 95 percent confidence level. This projection means that a given score can be compared to normative data with a 95 percent expectation (or confidence) that if the score does not deviate significantly from the norm (plus or minus two standard deviations), it will be that of a successful loan customer. This statistical relationship may be illustrated by the normal curve below:



μ - population mean

σ - standard deviation

The cross-hatched areas above represent 2.5 percent of the 100 percent of the area under the curve. Obviously, the 2.5 percent on each end

of the curve adds to five percent, leaving 95 percent for the remainder. As can be seen, this 95 percent is represented by two standard deviations from the mean in either direction. Therefore, a score equal to two standard deviations greater than the mean score would be at the upper limit in a 95 percent confidence test. And conversely, a score equal to two standard deviations below the mean would be at the lower limit in such a test.

Using the scores developed in this study as the normative data, Table 6 suggests upper and lower limits to be used in testing at the 95 percent confidence level. To illustrate, attention is directed to Table 1 where mean and standard deviation scores are recorded for the trait of inclusion expressed (and others). One standard deviation is 1.833 and, of course, two standard deviations would be 3.666. The latter figure, when added to the mean score of 4.8, yields the upper limit score of 8.47 as noted on Table 6. Similarly, when two standard deviations (3.666) are deducted for the mean (4.8), the lower limit of 1.13 is established, also noted on Table 6.

Again, it is not suggested that the limits indicated in Table 6 should be used as the model for scoring psychological tests of loan customers. It does, however, illustrate the technique for the establishment of acceptable limits of scores.

TESTING SUMMARY

An interesting phenomenon was observed during the testing which may be of interest to those who would consider psychological testing of loan customers. Test packets were prepared which included all materials. When

a subject was asked if he would assist in the study, the uniform response was yes. The customer was then given a packet and asked to return it within a specified time. Few, however, did so. For several of the customers it took repeated requests before the information was provided.

It was obvious that several of the customers, although anxious to be of assistance when first asked, felt that the information was a bit too personal to be provided to the bank. Certainly if this testing procedure were employed for loan customers it would be unusual, and a great deal of tact appears necessary.

In several ways the test results were surprising. It was felt that more consistent scoring patterns would emerge which could be more reliable as a successful loan customer profile. Perhaps if the limiting conditions mentioned on Page 35 were mitigated the data would be more consistent. However, the validation of the hypotheses concerning significant differences in expressed and wanted behavior for inclusion and control personality traits suggests that quantification of human characteristics is possible.

TABLE 1

FIRO-B SCORES

Customer No.	Inclusion		Control		Affection	
	Expressed	Wanted	Expressed	Wanted	Expressed	Wanted
1	4	0	0	0	3	5
2	7	3	3	4	7	9
3	8	8	6	6	5	7
4	5	0	2	2	3	5
5	5	9	9	2	9	9
6	5	0	5	5	2	5
7	5	0	2	6	2	3
8	2	0	3	2	2	5
9	3	0	8	1	3	5
10	7	7	4	1	9	8
11	4	0	7	2	6	2
12	2	0	7	1	3	5
Total	57	27	56	32	54	68
Mean	4.8	2.3	4.7	2.7	4.5	5.7
Standard Deviation	1.833	3.400	2.657	1.972	3.123	2.095

TABLE 2

GORDON PERSONAL INVENTORY SCORES

Customer No.	Cautiousness	Original Thinking	Personal Relations	Vigor
1	40	30	26	25
2	32	23	27	32
3	25	28	21	32
4	31	19	28	26
5	22	29	19	34
6	31	26	29	30
7	22	23	26	37
8	25	25	27	31
9	18	29	24	35
10	22	24	27	31
11	29	28	23	30
12	19	27	21	37
Total	316	321	298	380
Mean	26.3	26.7	24.8	31.7
Standard Deviation	6.14	3.74	3.05	3.61

TABLE 3

GORDON PERSONAL PROFILE SCORES

Customer No.	Ascendancy	Responsibility	Emotional Stability	Sociability
1	22	34	34	18
2	23	31	33	21
3	22	32	17	27
4	25	27	19	29
5	25	25	27	21
6	25	29	28	22
7	33	23	26	24
8	12	21	20	3
9	31	24	21	28
10	28	28	30	20
11	22	30	22	20
12	24	23	21	15
Total	292	327	298	248
Mean	24.3	27.2	24.8	20.7
Standard Deviation	5.04	3.92	5.40	6.64

TABLE 4

FREQUENCY DISTRIBUTION OF GORDON
PERSONAL INVENTORY
SCORES

Percentile	Number of Occurrences			
	Cautiousness	Original Thinking	Personal Relations	Vigor
0 - 25th	4	3	4	0
26th - 50th	3	3	6	2
51st - 75th	3	5	2	6
76th - 100	2	1	0	4

TABLE 5

FREQUENCY DISTRIBUTION OF GORDON
PERSONAL PROFILE
SCORES

	Number of Occurrences			
Percentile	Ascendancy	Responsibility	Emotional Stability	Sociability
0 - 25th	1	4	6	2
26th - 50th	4	4	1	3
51st - 75th	4	2	3	4
76th - 100	3	2	2	3

TABLE 6

UPPER AND LOWER LIMITS OF
ACCEPTABLE SCORES
(For Possible Model)

Trait	Lower Limit	Upper Limit
Inclusion - expressed	1.13	8.47
Inclusion - wanted	- 3.50	8.10
Control - expressed	- .61	10.01
Control - wanted	- 1.14	6.64
Affection - expressed	- 1.75	10.75
Affection - wanted	1.51	9.89
Cautiousness	14.02	38.58
Original Thinking	17.22	34.18
Personal Relations	18.70	30.90
Vigor	24.48	38.92
Ascendancy	14.22	34.38
Responsibility	18.36	35.04
Emotional Stability	14.00	36.60
Sociability	7.42	33.98

Chapter 5

SUMMARY AND CONCLUSIONS

Human resource accounting is a captivating concept. To those schooled in traditional accounting it may appear as a radical departure from accepted standards. However, the users of financial information would appear to be the beneficiaries of this conceptualization and should encourage it. Those who are interested in seeing the human element recorded in financial statements are apparently being successful in their endeavors.

As the concepts are converted to usable techniques, bank lending officers will gain a new tool in the effort to analyze their risks. Several techniques have already been advanced and all appear to have certain advantages over traditional financial reporting. However, sufficient weaknesses remain which prevent general acceptance of these methods for use in published financial statements.

The main impetus to the development of human resource accounting has come from the social scientists. Of particular note among these has been Dr. Rensis Likert who has worked ceaselessly in advancing this new technique. As do many others, he believes that many elements can be more reflective of a company's value than is the net profit figure. In particular,

he has advanced the notion that dollar values should be placed on the traits of a company and its management, such as level of intelligence and quality of leadership, for example.

To the banker who has a loan request from an applicant without a strong financial statement, human resource measurement presents a new opportunity. These techniques would appear to hold particular significance in the area of service-oriented businesses where, in many instances, the skills of individuals represent the major asset of the concerns.

The increasing emphasis on the human component of business suggests another approach which could be of invaluable benefit to lenders. Namely, it appears possible to use psychological tests to measure the level of relevant personality traits of borrowers. Given sufficient normative data, these tests could then be used in the analysis of credit applications, becoming an additional tool of the lending officer in analyzing his risks.

The research in the study certainly could not be deemed to be exhaustive-such was not the intent of scope. However, the verification of two hypotheses would support the contention that successful loan customers do possibly have distinguishing characteristics. Recall the three hypotheses from Chapter 3:

Hypothesis 1: A significant difference exists between the inclusion expressed and the inclusion wanted for successful commercial loan customers.

Hypothesis 2: A significant difference exists between the control expressed and the control wanted for successful commercial loan customers.

Hypothesis 3: A significant difference exists between the affection expressed and the affection wanted for successful loan customers.

Using the "t" ratio to test the null hypothesis for each of the above, it was concluded that significant differences did indeed exist for inclusion and control behavioral traits but not for affection.

The present study also suggests an approach in establishing upper and lower limits on scoring of behavioral traits such that a predictor model might be developed. This method would use the mean and standard deviation of normative data of successful customers for comparison of loan applicants. Using the normal distribution, a confidence level could be established for statistical comparison of loan applicant scores.

A great amount of cooperation could make the subject matter of this study become operative. The joint effort of accountants and social scientists could result in new accounting techniques which could be of significant benefit to both internal and external users of financial information. And the collaboration of psychologists and bankers could provide measurement devises for specific human resources which could be statistically related to the probability of a successful loan relationship. Such appears to be a very desirable objective.

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