

EXPLORING EXPLANATIONS FOR JOB ATTITUDES AND BEHAVIOR IN A METRO MANILA FACTORY

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December 3, 1974

This study explores the relationships among a heterogeneous set of variables measured on 73 women workers in a Metro Manila garment factory. The initial focus is on 16 job satisfaction items, which are factor-analyzed and which yield four interpretable factors: intrinsic rewards, extrinsic rewards, relationships with people, and relationships with the mechanistic system. To determine their possible sources and correlates, the four factors are correlated with two sets of variables heuristically conceived as antecedents and correlates. Some significant relationships are found. Then the factors are used as independent variables to correlate with six dependent variables: (1) a generalized measure of satisfaction with the job; (2) a generalized measure of satisfaction with the company; (3) production; (4) a generalized performance rating; (5) sickness absences; and (6) other absences. Significant interpretable relationships are found with the first two criterion variables, but not with the last four. A stepwise multiple regression, using as independent variables the four job satisfaction factors and all the heuristically categorized antecedent and correlate variables, is run on each of the six criterion variables. The analysis yields six significant equations. A multiple-structure approach is suggested for interpreting the results, and for constructing predictive models in job attitude and behavior research.

What do people find satisfying in their jobs? What are the sources of satisfaction, or their linkages with other attitudes and factors external to the individual? What does satisfaction predict in terms of other attitudes and behavior related to the job? These questions are coming to be asked with increasing frequency as the pace of industrialization in this country quickens. But the answers, if there are answers, must usually be abstracted from the few published materials relevant to industrial organizations that are available, some graduate theses that do not see print, and, presumably, studies commissioned by private firms whose circulation is restricted.¹ For, understandably, such studies are only beginning and are few and far between.

In countries that have had a long industrial experience, as in the case of the United States, at least the first question has been asked often enough. The result has been an impressive array

of research instruments and a comprehensive if tentative set of findings. No less impressive is the attempt to answer through systematic research two or all three questions at once.²

The present paper attempts to find some answers to all three questions. In the end, it suggests that even different questions should be asked. But it must be admitted at the outset that the exploration will be rather limited. The research was not conceptualized for the purpose of the present analysis. The data were gathered for a different, more general, set of objectives; and they were obtained from a relatively small number of respondents in one factory. Comparisons of the findings, also, are made mainly with findings in the United States for the evident reason that if comparable data on the local scene exist, the investigators have had no reasonable access to them.

The Research

The data were gathered during a study of workers undertaken at the Jenner Company, the local subsidiary of a foreign firm manufacturing a brand of heavy wearing apparel for men and women. Since it commenced operations in 1972, the firm's offices and plant have been located in a suburb of Manila.

Before the data gathering process was begun the research objectives were formally stated thus:

1. To provide a description of the Jenner Company workers in terms of a set of socioeconomic, attitudinal, and interactional variables; and
2. To delineate those variables that are associated with efficiency in factory work.

In pursuit of these objectives, the development of an interview schedule was begun. Visits were made to the factory in order to obtain observational and impressionistic data. A series of qualitative and unstructured interviews were also made with the general manager, several middle level managers, supervisors, and workers. The standardized interview schedule that was subsequently developed consisted of some 70 items and sub-items which solicited data obtainable only from respondents; these consisted, in particular, of socioeconomic, attitudinal, and interactional measures. The personnel files yielded scores on an intelligence test and five tests of dexterity, which were obtained at the time the workers applied for jobs with the firm; individual records of productivity; evaluation of individual workers' performance by their supervisors according to a standardized rating form; records of absences; and transfers from one job operation to another.

The respondents consisted of all workers who had been employed in the company for at least six months and whose production could be measured according to the procedure referred to in a later section of this paper. These criteria included 73 workers, all female, in the sample. They excluded some 60 female workers who had been employed for less than six months, and eight male workers who were cut-

ters, carriers, or guards and who were not rated according to the same production standards as the female workers. Also excluded were all employees who were not directly involved in production (e.g., secretaries) or who otherwise occupied positions above the worker's level.

The interview schedule was translated into Tagalog and was tried on a few informants to check for clarity; deadline pressures, however, precluded more rigorous pretesting. With the constraints of the interviewing situation in mind, the number of questions was limited to the point where they could be answered within approximately half an hour. Appointments for interviews with workers were made through the personnel manager. The interviews were conducted by three female graduate students. They were held in the afternoon, after working hours, in a corner of the company cafeteria which provided relative privacy. The interviews were conducted in August through early September 1973.

The work and the company

The 73 workers in the sample are part of a work force of about 130 women involved directly in the production of pants and jackets for men and women. In its best-selling form, the apparel is made of heavy denim cloth. Hence, its handling in the manufacturing process requires an appreciable amount of physical exertion. The workers are thus truly blue-collar, and are doing basically manual labor.

To the extent possible, Jenner follows the production process model developed in the parent American firm and subsidiaries abroad.³ An information handbook for workers lists 38 different operations for producing one "style" or product. On the factory floor these operations are distributed in a process flow, that generally follows assembly line patterns. Workers in the production line are divided among a number of female supervisors; the supervisor-worker ratio comes to approximately 1:13.

At the time the interviews in the plant were undertaken the factory was on a single eight-hour shift. Workers were expected to be at their stations at 6:30 a.m. and to complete the day's

work at 3:30 p.m., with a 15-minute break in the morning and an hour off for lunch.

As planned, the company paid production workers on a daily basis during the first year of operations, then shifted to piece work wages during the second. No figures were obtained on the actual take-home pay of workers, but it was widely believed in the plant that the company paid better than average industry wages. The piece work scheme was designed in such a way that where the worker's actual earnings for the day fell below the minimum wage of eight pesos fixed by law, the discrepancy was paid by the company.

Normatively, workers go through a probationary status for the first six months of employment and become permanent afterwards. By this time, they also become entitled to the full package of fringe benefits offered by the company.

After one year of operation Jenner was definitely established. But in terms of the plans formulated by management, headed by a young hard-driving Asian with substantial experience in the textile industry, it was far from its peak. It had a brand new building whose floor space was about 70 percent utilized, but management was already negotiating for the acquisition of an adjacent lot for another building. It had produced mainly for export in the lucrative Asian market; now it was preparing to enter the domestic market also. It had not yet filled the planned executive positions, but it had already assembled a small core of young (middle twenties) managers, and it was looking for more. The production force alone had grown to its present size, recruitment was continuing, and plans were being made for instituting a second eight-hour production shift.

But growth had not been achieved without strain. Perhaps the most notable manifestation occurred midway during the first year. The general manager, alarmed at the slow rate of growth in the efficiency of the new work force, took direct control over production from the production manager. At about the same time, a noticeable number of workers were laid off. The first action precipitated the subsequent re-

signation of the plant manager. The second provoked workers' anxiety over the security of their jobs. But if not for these reasons, then for others, productivity did increase. From a reported plateau of about 50 percent of standard, productivity went up again gradually. The 73 workers in the sample averaged 70 percent of standard during the first quarter of the second year. When the study was made during the second quarter their productivity had further increased to 80 percent. At the same time the workers voiced complaints about management pressure for undertaking overtime work. The management explanation was that a reasonable output was targeted for future periods, and the targeted output was contracted to marketing outlets in advance. If the commitment could not be met by working during regular hours, then it had to be met through overtime work. Thus, the company had its own share of strains and stresses, although the extent to which they were or were not characteristic of a new and expanding organization cannot be determined.

The workers: some sociodemographic characteristics

It was mentioned that the respondents consisted of women workers who have been employed in the company for at least six months. The women range in age from 19 to 35; the mean age is 22.6 years. The greater number of them were born in a barrio and have lived there most of their lives; the rest have lived longest in poblaciones and in cities, including Metro Manila. Most (60 percent) are mother-tongue Tagalog speakers, or are bilinguals with Tagalog as the other mother tongue. The second largest linguistic group represented in the sample is Bikol (16 percent). Most are Catholic (88 percent) and single (90 percent).

The low-income origins of the respondents are indicated by their answer to the question, "What is your father's typical occupation? (*Ano ang pirmihang trabaho ng tatay mo?*)" The responses show that 85 percent have fathers who occupy lower-skilled urban jobs or who are in rural occupations.⁴

About half (52 percent) of the total number of respondents live with their families; the rest live with other households usually as boarders, with relatives or non-relatives. The respondent's family household (not necessarily the household she lives with during the week) averages 6.01 nuclear family members. The total income of this household ranges from ₱150 to ₱2,000 per month and averages ₱618.42.

The lowest number of years completed in school is 7 (which is also the minimum stipulated by recruitment criteria), the highest 14, or the equivalent of a college education. The average respondent has finished 10.43 years of schooling, or is a high school graduate. Only about a third (36 percent) had not had employment experience before coming to Jenner. The rest had been employed before; in fact,

many (42 percent) had been employed in garment work. By the same token, only a few (14 percent) had not had sewing experience; in fact, almost half (49 percent) had sewed for pay before employment in Jenner.

When asked why they chose an industrial job, most respondents answered in the context of their current jobs. About half of them seem to say that they came to the job because it was the best that was available, the other half showed a definite preference for the job in this specific company. About three-quarters say they were recruited through an agency hired by Jenner, or they answered advertisements for openings in the company. The rest say personal associates were highly instrumental in getting them the job.

Only two live within walking distance of the

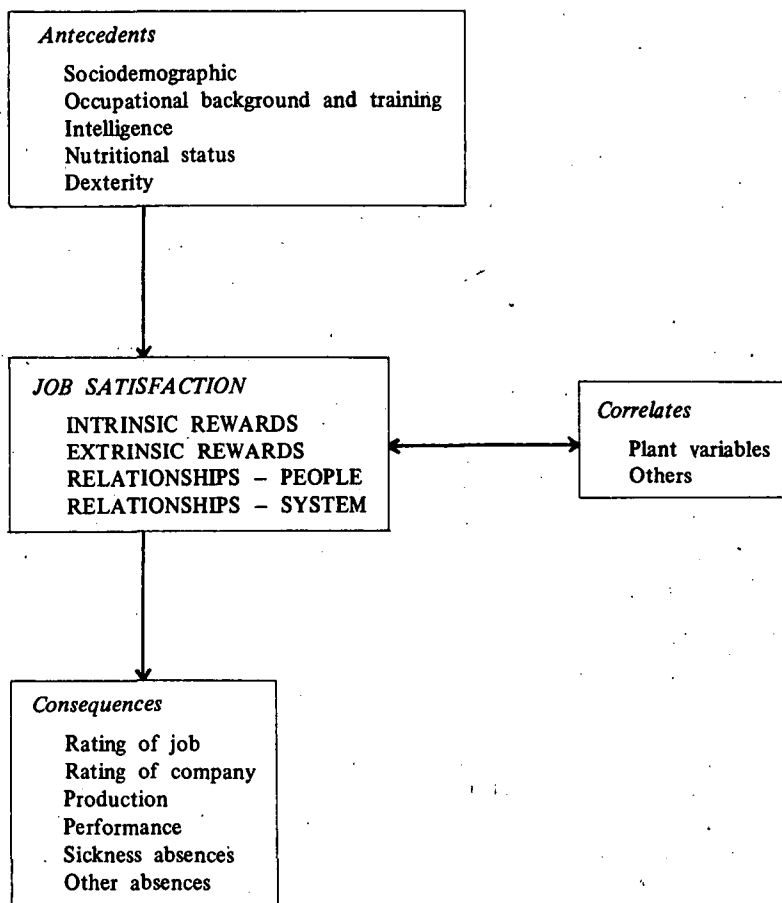


Figure 1. Initial framework for analyzing relationships among four categories of variables.

factory. The rest commute to work, taking as many as eight rides daily (mean number of rides is 3.4) and spending a maximum of 2.5 hours (mean commuting time to and from work: 1 hour, 7 minutes) in public utility vehicles.

The Analysis and the Findings

The diagram in Figure 1 summarizes the initial strategy adopted for examining the relationships among 44 different variables involved in the analysis.⁵ The variables are grouped under four categories. The focal category is job satisfaction. It includes four main referential variables — satisfaction with the intrinsic rewards of the job, satisfaction with extrinsic rewards, satisfaction with relationships with people, and satisfaction with relationships with the mechanistic system. These variables are the dimensions identified through factor analysis of 16 job satisfaction items.

The rest of the variables are categorized as antecedent to, correlative with, or consequent to these attitudinal variables.

The antecedent variables represent characteristics of the individual that were acquired prior to her employment in Jenner, her enduring qualities as an individual, characteristics that could not have been influenced by job satisfaction or are otherwise assumed to be prior to these attitudes. They are grouped roughly into five subcategories: selected socioeconomic background variables, occupational background and training, physiological status, intelligence, and dexterity.

The correlates consist of variables whose position in time with the job satisfaction variables could not be ascertained as prior to, or which were otherwise assumed for analytical purposes to be contemporary with, the job satisfaction variables. They consist mainly of variables measuring behavior and relationships within the plant, although a few other job-influencing variables are included.

The variables categorized as consequent are variables that the analysis sets out to predict, first from the four job satisfaction factors, then from all of the nonconsequent variables. They include, it will be noted, both attitudinal and

behavioral variables.

It should be clear that no cause and effect relationships are hypothesized for testing. Indeed, while some valid grounds are seen for theorizing relationships among some of the variables in the direction indicated in the figure, for other variables the theoretical grounds are not that hard. Hence, the initial objective of the analysis as reflected in the diagram should be interpreted to mean that *if* there are any relationships among any of the variables at all, the direction should generally follow that indicated by the heuristic framework.

Job satisfaction

The interview questions followed this general sequence: the informant was asked for socioeconomic data; then various questions about her job, the company, her co-workers, and her supervisors were asked. The 16 job satisfaction items were presented to her as a list under the second to the last major interview item. The introductory statement to the list was stated thus:

We have a list of things pertaining to the job. For instance, INTERVIEWER READS FIRST THREE ITEMS ON THE LIST. I will read each of these to you. For each item. Please tell me if in your work here in Jenner you are

- a. highly satisfied
- b. slightly satisfied
- c. not sure whether satisfied or not
- d. slightly unsatisfied
- e. highly unsatisfied

The list of choices were printed in bold letters on a card which the informant held while the interviewer read each item on the list. The interviewer recorded the informant's response on the interview schedule.

The measurement thus follows a Likert 5-point scale, with *highly satisfied*, coded 5 and *highly unsatisfied*, 1. The items, as explained to the informant, were abbreviated descriptions of various aspects of her job. They were culled on an *a priori* basis from various pools of job satisfaction factors listed in Athanasiou's review (1969). No explicit theoretical reasoning guided the investigator's choice of these items; it was simply felt at the time that these attitudinal

Table 1

*Satisfaction with the job: mean score and standard deviation
on each item on a 5-point scale*

Items*	Mean	S.D.
2. Bonuses (<i>Ang mga bonus</i>)	4.41	1.34
12. Relationship with fellow employees (<i>Pagsamahan sa mga kapwa emplyado</i>)	4.32	0.57
7. The communication of necessary information and instructions to the employees (<i>Ang pagpapaliwanag ng mga kailangang impormasyon at instruction sa mga emplyado</i>)	4.25	0.98
10. The opportunity to rise in one's responsibility (<i>Ang pagkakataong tumaas sa tungkulin</i>)	4.19	1.17
16. The persistence and cooperation of employees in their work (<i>Ang tiyaga at pakikisama ng mga emplyado sa paggawa</i>)	4.15	0.76
8. Recognition of the quality of work of the individual employee (<i>Ang pagkikilala ng uri ng trabaho ng isang emplyado</i>)	4.15	0.76
11. Work that gives one the opportunity to show oneself what she can do (<i>Trabahong nagbibigay ng pagkakataong maipakita sa sarili ang kanyang kakayahan</i>)	4.14	0.89
15. Interesting work (<i>Kawiliwiling trabaho</i>)	4.11	0.73
13. The way management runs the company in order that it may achieve progress (<i>Ang pagpapalakad ng management upang umunlad ang kumpaniya</i>)	4.07	0.86
6. The quality of supervision (<i>Ang uri ng superbisyon</i>)	3.99	0.75

Table 1 (continued)

Items*	Mean	S.D.
14. The procedures that have been adopted in order that the ideas, suggestions, or complaints of employees may be known and acted upon (<i>Ang mga paraang isinagawa upang ang mga panukala, mungkahi, o reklamo ng mga empleyado ay malaman at aksyonan</i>)	3.93	0.91
3. Fringe benefits (e.g. medical, retirement) (<i>Ang mga fringe benefits [hal., medical, retirement]</i>)	3.86	1.13
1. Salary (<i>Ang suweldo</i>)	3.85	1.01
5. The machines, supplies, and other necessities for working (<i>Ang mga makina, supply, at tanging kailangan sa paggagawa</i>)	3.30	1.14
9. Policies on the reduction or dismissal of employees (<i>Ang mga patakaran tungkol sa pagbabawas o pagtatanggal ng mga empleyado</i>)	3.27	1.46
4. The conditions at the place of work (e.g., cleanliness, ventilation, lighting) (<i>Ang katayuan ng pook pagawaan [hal. kalinisan, bentilasyon, liwanag]</i>)	3.19	1.74

*Only the Tagalog version was read to the respondents. The number before each item indicates the order in which the item appeared in the interview schedule.

measures should be included in a general survey on workers.

The items, the mean scores of respondents on each, and the standard deviations are shown in Table 1. The respondents generally favor values at the upper end of the scale. They may thus be generally satisfied with the various aspects of their jobs as listed, or they may be generally unwilling to indicate lack of satisfaction with their jobs. Again, they may be following what Selltiz *et al.* (1959: 352) refer to as the "generosity error," or they may be making their ratings consistent with some unknown

preconceived notion about the job (the so-called "halo effect"). The real explanation is probably some combination of all these factors. The features of the job that they seem most satisfied with are bonuses, relationships with fellow employees and the downward flow of communication from management. The features that they are least satisfied with are conditions in the plant, job security, and machines and supplies. The pattern of consensus on the ratings is not very clear, although there is a tendency for standard deviations to be high on features that respondents are less satisfied

Table 2
*Correlation matrix of 16 job satisfaction items**

Items (abbreviated)	Item Nos.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Salary	100															
2. Bonuses	01	100														
3. Fringe benefits	15	38	100													
4. Plant conditions	19	28	31	100												
5. Machines and supplies	31	14	05	47	100											
6. Supervision	33	11	21	37	33	100										
7. Communication from management	23	06	07	36	27	15	100									
8. Recognition	26	20	24	31	25	26	21	100								
9. Security	25	26	26	21	30	28	34	23	100							
10. Promotion	22	22	18	19	19	19	15	32	10	100						
11. Challenging work	15	-01	01	-07	04	06	13	28	20	26	100					
12. Relationship with peers	17	01	21	20	10	13	34	20	39	19	04	100				
13. Management's competence	29	09	08	25	34	22	48	50	47	21	29	44	100			
14. Communication to management	32	22	20	27	23	15	40	59	32	36	34	31	44	100		
15. Interesting work	33	31	27	21	21	25	25	39	36	21	21	11	45	35	100	
16. Persistence and cooperation	20	31	47	31	05	24	10	28	36	09	16	28	25	36	31	100

*These are product-moment correlations, which are part of the output of the factor-analysis described in the text. With an N of 73 and with two degrees of freedom, a correlation of .233 is significant at the .05 level, .302 at the .01 level. Coefficients are rounded off to two digits and decimal points are omitted in this table. Correlations significant at the .05 level or higher are italicized.

with. The intercorrelations among the ratings are shown in Table 2.

Reservations regarding the reliability of the job satisfaction items notwithstanding, there appeared to be sufficiently significant variations in the responses to items, and among clusters of items, to warrant exploring the possible dimensions that the commonalities and variations indicate. This exploration was undertaken

through principal components analysis, with varimax rotation, of the 16 items. The results are shown in Table 3. The 16 job satisfaction items yield four principal factors, or attitudinal dimensions, which account for over 56 percent of the variance.

Factor 1 is the easiest to interpret because the central items in it are those that have been consistently identified in the literature (see

Table 3
Rotated factor loadings of 16 job satisfaction items

Items (abbreviated)	Factors*				h ²
	1	2	3	4	
1. Salary	.364	.002	.201	.426	.355
2. Bonuses	.168	.712	-.133	.159	.578
3. Fringe benefits	.026	.778	.102	.096	.625
4. Plant conditions	.022	.310	.172	.697	.611
5. Machines and supplies	.175	-.075	.137	.763	.637
6. Supervision	.039	.206	.093	.667	.497
7. Communication from management	.185	-.095	.625	.317	.534
8. Recognition	.654	.218	.177	.234	.562
9. Security	.135	.326	.632	.159	.550
10. Promotion	.601	.121	-.088	.229	.437
11. Challenging work	.722	-.059	.133	-.273	.617
12. Relationships with peers	.002	.131	.776	.022	.620
13. Management's competence	.445	.012	.665	.211	.685
14. Communication to management	.467	.441	.177	.195	.482
15. Interesting work	.665	.170	.342	.144	.609
16. Persistence and cooperation of employees	.121	.700	.334	.002	.617
Percent total variance	15.2	13.6	14.2	13.4	56.4
Percent common variance	27.0	24.1	25.2	23.8	
Eigenvalues	2.4	2.2	2.3	2.1	

*Loadings greater than .600 are italicized.

below) as indicating the *intrinsic rewards* of the job. This dimension combines the measure of satisfaction expressed on such issues as the extent to which the individual feels a sense of accomplishment in her job, the extent to which she finds her work interesting, the extent to which she feels that proper recognition is given to her work, and the extent to which she sees her work as providing opportunities for advancement. The items that load lowest on this factor are relationship with peers, plant conditions, and fringe benefits. It is thus clear that the individual who expresses satisfaction with her job on Factor 1 alone is an individual who is not primarily concerned with whether or not she gets along well with other people, or with current conditions in the plant, or with the extra material benefits that the company provides for the jobholder. She is rather saying that she finds her job inherently and personally rewarding.

Of the four factors, Factor 2 is the most difficult to interpret. On the one hand, the two highest loading items — fringe benefits, bonuses — seem to indicate concern for the extra material rewards of the job. The third highest loading item — persistence and cooperation of fellow employees — adds little clarity to the dimension, however. The fact that this item was originally intended to read “skill and cooperation. . .” and a translation error turned skill to *persistence* only helps to complicate the interpretation. The lowest loading items — salary, management’s competence, and challenging work — are too diffused to conceptualize as one pole which can help explain the opposite, high loading items pole. Unstructured interview data, however, recall rather persistent complaints of some workers on how the poor performance of others can have a negative effect on one’s production and, thus, wages: by mechanics being slow in rectifying machine breakdowns, by some workers farther down the line not keeping pace with the flow of work or otherwise becoming a bottleneck. Persistence and cooperation of employees in their work may thus be a genuine concern of individuals who place a high value on material rewards. On this basis, the third item does seem to fit into a

dimension that measures primarily satisfaction with *material rewards* of the job.

The items that load high on the third factor are relationship with peers, management’s competence, job security, and communication from management. In general, this factor seems to measure the respondent’s satisfaction with relationships with people in the company, and it is the shorthand form of this concept, *relationships-people*, that will be used to identify it. Nonetheless, for the particular group of respondents in the study, the factor seems to delineate more precisely attitudes of dependence — dependence on other workers; and, in particular, on management to run the firm competently, to make its wishes known adequately, and to keep the worker in her job. It is interesting to note that the item, communication to management, does not load high on this factor. As expected, opportunities for promotion loads lowest and, in fact, negatively. The similarly attenuated loading of supervision on this factor suggests that the supervisor is not considered a person whose approval one should seek in particular, as one seeks the approval of peers and superiors in the management hierarchy. The supervisor in this company might occupy a limbo in the social status map that the worker carries in her head.

Supervision, in fact, is a central item in Factor 4, together with machines and supplies and with plant conditions. This factor seems to delineate satisfaction with relationships with the mechanistic system, and the term, *relationships-system*, will be used to identify it. Like the achievement-oriented worker who values the intrinsic qualities of a job, the worker who rates high on the fourth factor alone may not be concerned much with social relations, nor with extra material benefits (persistence and cooperation of employees, relationship with fellow employees, and fringe benefits are the lowest loading items on this factor). But unlike the worker who scores high on the first factor, the worker who puts a high value on the relationships-system factor alone does not turn inward to emotionally satisfying things. Neither does she turn outward to other people as in the case of the worker who scores high on the rela-

tionships-people factor. Her concern is turned rather to the system that is involved in the task. The worker is concerned that the physical plant is orderly and suitable for working, that the machines are efficient and in good repair, and that supervision ensures that the job is done well.

To summarize: four attitudinal dimensions measuring satisfaction with the job were delineated in this phase of the analysis. The first two have to do with attitudes towards rewards both intrinsic and extrinsic. The other two have to do with the inevitable relationships that are formed in the work situation — people with other people, and people with machines and the like. No claims are made to the inclusiveness of the dimensions identified. Rather, on an intuitive basis, the dimensions seem to distinguish and cover most of the important spheres of job attitudes, and in fairly patterned ways. For these reasons, further analysis using these dimensions do not seem out of order.

In preparation for the subsequent parts of the analysis, the scores of each worker on each of the factors were obtained. The calculation involved finding the z-score on each central item (factor loading at an absolute value of .600 or higher) in a given factor, multiplying it by the corresponding factor loading, and summing the results. The factor scores were then grouped into ordinal scales to eliminate extremes and to approximate a normal curve. The scale for intrinsic rewards and for relationships-system each consists of seven points; for extrinsic rewards and relationships-people five and eight, respectively.

Job satisfaction vs. antecedents and correlates

To determine possible sources of the job satisfaction factors, other variables measured in the survey were examined. The examination led to the identification of 22 variables which could be reasonably assumed to be antecedent to job satisfaction; 12 variables for which the assumption could not be defended were classified as correlates. Then a correlation analysis between these variables on the one hand and the job satisfaction factor scores on the other

was undertaken.

The results are summarized in Table 4 and Table 5. The correlations are of generally low magnitude. A few variables do show significant correlations. Even so, the results should be read with great caution. Apart from other considerations, the scale points on the variables being correlated differ appreciably, and these variations are bound to affect the results. Hence these variables will simply be described, and virtually no interpretation will be offered.

Of the sociodemographic background variables, two appear to predict some of the attitudinal factors. Family household income, measured on a 10-point scale, predicts significantly three of the attitudinal factors. The correlations are negative; the inference might be made that respondents coming from higher income households see a basic inconsistency between their social class placement (indicated by income) and the nature of their jobs. Occupational mobility, measured in terms of the worker's occupation being lower, same, or higher, relative to father's occupation, also predicts negatively two of the attitudinal factors.

Of the variables generally representing experience before the job at Jenner, one negatively predicts intrinsic rewards: Pre-Jenner companies, which measures on a 3-point scale (never worked before, worked previously but not in garments, worked previously and in garments) the respondent's work experience. Training in Jenner, which negatively predicts extrinsic rewards, is a dummy variable which assigned a value of 1 to respondents who went through a formal training period for their jobs and 0 to those who began regular work upon being hired and presumably learned their jobs more by trial and error.

The dexterity scores used are the respondent's scores on five tests which are part of the General Aptitude Test Batteries developed by the United States Employment Service: Aptitude K, Motor Coordination, Part 8; Aptitude M, Manual Dexterity, Part 9; Aptitude M, Manual Dexterity, Part 10; Aptitude F, Finger Dexterity, Part 11; and Aptitude F, Finger Dexterity, Part 12.⁶

Table 4
*Correlations of antecedent variables with job satisfaction factors**

Antecedent variables	Job satisfaction factors			
	Intrinsic rewards	Extrinsic rewards	Relationships – people	Relationships-system
Age	-.08	.15	.11	-.04
Longest residence	.05	.15	-.03	.02
Family residence	-.03	.03	-.01	-.03
Family household size	-.01	-.04	-.10	.02
Family household income	-.22	.02	-.23	-.20
Father's occupation	-.10	-.06	.07	-.05
Occupational mobility	-.20	-.20	-.09	.00
Education	-.09	-.15	-.15	.11
I. Q.	-.01	.11	.10	.17
Sewing experience	-.04	.04	-.10	.10
Pre-Jenner companies	-.25	.02	-.09	.09
Reason for joining Jenner	.05	.06	.02	.08
Mode entry to Jenner	.09	.09	.06	.10
Training in Jenner	-.02	-.21	-.13	-.14
Height	.03	-.04	.01	-.06
Weight	.01	-.08	.02	-.03
Weight on height and age	-.08	-.12	-.12	.00
Dexterity KM8	.03	.15	-.02	.01
Dexterity MM9	.05	.05	-.08	-.16
Dexterity MM10	.19	.18	.12	.14
Dexterity FF11	.01	.32	.04	.02
Dexterity FF12	.11	.25	.23	.01

*These are Spearman rank correlations. A coefficient of .194 is computed to be statistically significant at the .05 level, of .271 at the .01 level. Coefficients are rounded off to two digits, and decimal points are omitted in this table. Correlations significant at the .05 level or higher are italicized.

Table 5
*Correlations of correlate variables with job satisfaction factors**

Correlate variables	Job satisfaction factors			
	Intrinsic rewards	Extrinsic rewards	Relationships – people	Relationships – system
Rating of present life	.15	.01	.21	-.06
With family/alone	-.01	.01	.04	.07
Desire for education	-.01	-.11	-.04	-.01
Commuting time	.09	.18	.12	-.03
Positions	.33	-.08	.03	.23
Transfers	-.05	.06	-.19	.22
Nominates friends	-.11	-.01	-.16	.00
Nominated friend	-.10	-.11	-.09	-.18
Consults	-.19	-.21	-.27	.14
Consulted	-.06	-.16	-.09	-.13
Satisfaction – present assignment	.13	-.03	-.15	-.07
Rating of supervisor	.14	.16	.12	.24

*These are Spearman rank correlations. A coefficient of .194 is computed to be statistically significant at the .05 level, of .271 at the .01 level. Coefficients are rounded off to two digits, and decimal points are omitted in this table. Correlations significant at the .05 level or higher are italicized.

Of the five tests the two which measure finger dexterity show significant positive correlations with job attitudes. The scores for Dexterity FF11 were combined into a 4-point scale. For Dexterity FF12 the raw scores were used since the frequencies on 15 continuous points appear normal.

Turning now to the categorized correlates of job satisfaction, which consist mainly of in-plant variables, five measures might warrant further examination. The number of positions that the individual has held in the factory was measured on a 3-point scale: did not hold other positions, held one other, held two or more. It seems to predict positively two of the attitudinal factors. The number of transfers is to be distinguished from number of positions in that

a transfer is a highly temporary change in assignments. It is usually made when another worker is absent, or when a particular operation has become a bottleneck hence an extra worker is needed in it. Measured on a 6-point scale, the variable correlates negatively with satisfaction with relationships-system. The correlation with relationships-people is fairly high and also negative, but does not reach significance level.

Four sociometric measures used in the study were taken from two interview items. The first asked the respondent to list three people among the workers whom she considered her best friends, and to indicate how often she interacted with each of them. For each individual that the respondent could name, a value of 1 was assigned. This value was multiplied by the

corresponding value in a 6-point frequency of interaction scale ranging from daily (6 points) to less than once every few months (1). The scores were then tabulated for each informant as an index of the variable, nominates friends. Each worker thus nominated also "earned" a score; these scores were also tabulated to index the variable, nominated friend, for that worker.

A similar procedure was followed for deriving indices from responses to a parallel item which asked the respondent to list three people whom she consults most frequently to obtain information, to make a suggestion, or to ask for help. The variables, consults, and consulted, represent the indices.

The scores obtained in the manner just described showed a rather wide range of dispersion. In order to normalize the frequencies somewhat, they were reduced to scales with fewer points. Nominates friends became a dichotomous variable; nominated friend was measured on a 5-point scale; consults on a 4-point scale; and consulted on 3 points.

The results show the variables to be generally poor correlates of job attitudes. Nonetheless, the significant if negative correlation of consults with the intrinsic rewards factor and with the relationships-people factor should be noted.

One other job-related measure should be looked at. Rating of supervisor was originally given by each worker on an 11-point Cantril self-anchoring scale;⁷ these ratings were normalized on a 4-point scale during the analysis. The results show a generally positive correlation with the job attitude factors; this correlation even reaches significance level with the relationships-system factor.

Rating of present life was also measured on an 11-point Cantril scale, then normalized to five points during the analysis. It shows some positive correlation with the intrinsic rewards factor, but the correlation does not reach significance level, as it does in the case of relationships-people.

Job satisfaction and consequent variables

What does job satisfaction explain or predict? As a first step towards providing some

answers to this question, six variables were selected and categorized as consequent variables.

Rating of job was derived from respondent ratings made on a Cantril 11-point self-anchoring scale. The actual scores used in the analysis were those arrived at after a process of minimizing extreme scores by compressing the scale to three points and normalizing the frequency distribution on it. *Rating of company* was derived from responses to a question paralleling that for rating of job. The distribution of scores was also normalized on a reduced 3-point scale.

The two measures of *production* and *performance* need to be differentiated. Through the years, the parent company of Jenner has developed through time-and-motion studies measures of the length of time required for each of the identifiable operations in the production process; or, conversely, the number of operations that can be completed successfully by a worker in a given time in a specified job. These measures, adjusted for conditions obtaining in the Philippine plant, thus constitute a standard against which actual performance of workers can be measured. Indeed, each operative worker's daily production record is expressed in terms of percentage of standard. The measure of production used in the present study is the mean of the worker's monthly averages during the quarter August through October 1973. The scores were summarized on an 11-point interval scale to minimize the effects of extreme values.

Each quarter the worker is rated by her immediate supervisor on three major factors, namely, her work output, the quality of her work, and the supervision that she requires. Her scores on these factors, weighted equally, are then summed to arrive at the total "job factor rating." The scores on the three factors proved to be highly correlated with each other and with the total rating. Hence the raw scores on the total rating, for the quarter which included any or all of the three months chosen as the base for this study, were scaled (to 4 points) and are used here as a measure of performance.

Sickness absences were measured separately from *other absences* mainly for intuitive reasons. Frequency records for the chosen quarter were obtained. Sickness absences were scaled to three points, other absences to 5.

Of the six consequent variables, therefore, two are measures of generalized attitudes or motivations (rating of job, rating of company), two are measures of behavior on the job that the company would sanction positively (production, performance), and two are similarly behavioral measures that the company would usually sanction negatively (sickness absences, other absences).

The results of the tests of correlation are presented in matrix form in Table 6. As explained before, there are two blocks of consequent variables to be considered. The first consists of the two generalized attitudinal

measures; these seem to be predicted in a patterned and interpretable way by the attitudinal factors. The second is the block of behavioral measures, which are predicted neither by the attitudinal factors nor by the generalized attitudinal measures in any interpretable way.

Of the four job satisfaction factors intrinsic rewards alone correlates significantly with rating of the job. On the other hand, all four factors and rating of the job correlate significantly with rating of the company. The results thus suggest, first, that at least at the level of the sample workers' perceptions the concept of *job* is interdependent with the concept of *company*. Secondly, the concept of company — the organizational system that provides the wider context for the job and the work — is of greater concern in the respondent's mind than the concept of the job. It may even be possible

Table 6
Correlations among job satisfaction variables and consequent variables*

Variables	Variable Nos.									
	1	2	3	4	5	6	7	8	9	10
1. Intrinsic rewards	100									
2. Extrinsic rewards	<i>.34</i>	100								
3. Relationships — people	<i>.53</i>	<i>.44</i>	100							
4. Relationships — system	<i>.27</i>	<i>.24</i>	<i>.24</i>	100						
5. Rating of job	<i>.27</i>	<i>.09</i>	<i>.12</i>	<i>.05</i>	100					
6. Rating of company	<i>.22</i>	<i>.34</i>	<i>.20</i>	<i>.21</i>	<i>.26</i>	100				
7. Production	<i>.10</i>	<i>.17</i>	<i>-.10</i>	<i>-.03</i>	<i>.11</i>	<i>-.16</i>	100			
8. Performance	<i>.01</i>	<i>.01</i>	<i>-.02</i>	<i>.09</i>	<i>-.25</i>	<i>.06</i>	<i>.25</i>	100		
9. Sickness absences	<i>.10</i>	<i>-.10</i>	<i>.15</i>	<i>.04</i>	<i>.04</i>	<i>-.14</i>	<i>-.06</i>	<i>.04</i>	100	
10. Other absences	<i>-.10</i>	<i>-.03</i>	<i>.00</i>	<i>-.13</i>	<i>-.22</i>	<i>.09</i>	<i>.10</i>	<i>.34</i>	<i>.12</i>	100

*These are Spearman rank correlations. A coefficient of .194 is computed to be statistically significant at the .05 level, of .271 at the .01 level. Coefficients are rounded off to two digits, and decimal points are omitted in this table. Correlations significant at the .05 level or higher are italicized.

Table 7
Stepwise multiple regressions of 38 independent variables on each
of 6 consequent variables

Dependent variable	Independent variable	Beta	F value*
Rating of job	Rating of present life	.3563	10.51
	Dexterity KM8	.1515	1.73**
	Intrinsic rewards	.3257	6.66
	Occupational mobility	.2187	4.17
	Family household size	-.2291	4.59
	Dexterity MM10	.2514	4.19
	Satisfaction – present assignment	-.2311	4.33
	Reasons for choosing job	.1871	2.98
	Relationships – system	-.1929	2.41
	R: .590 R ² : .348		
Rating of company	Rating of supervisor	.4742	28.17
	Extrinsic rewards	.2331	6.58
	Pre-Jenner companies	-.3358	9.63
	Sewing experience	.2970	7.96
	Dexterity FF12	.2725	9.69
	Desire for education	-.1650	3.49
	Dexterity FF11	-.1580	2.66
	Age	.1674	3.58
	Occupational mobility	.2046	4.01
	With family/alone	-.1493	2.42
	R: .760 R ² : .578		
Production	Dexterity MM10	.2349	3.72
	Transfers	.3155	9.17
	Extrinsic rewards	-.3139	8.02
	Dexterity FF11	.2396	4.59
	Longest residence	-.1693	2.52
	Height	.2873	6.55
	Reasons for choosing job	.2209	4.17
	Nominated friend	-.2375	4.43
	Dexterity KM8	.2238	3.11

Table 7 (continued)

Dependent Variable	Independent Variable	Beta	F Value*
	Satisfaction – present assignment	-.1659	2.56
	R: .601 R ² : .361		
Performance	Satisfaction – present assignment	-.3215	9.83
	Rating of present life	-.1650	2.34**
	Dexterity KM8	.2833	7.22
	Positions	.3178	8.53
	Family household income	.2146	4.14
	Rating of supervisor	-.2214	4.02
	R: .583 R ² : .340		
Sickness Absences	Height	-.4767	15.74
	Weight	.1735	1.97**
	Transfers	-.2233	4.93
	Mode entry to Jenner	-.2688	6.92
	Nominates friends	.2437	5.81
	Intrinsic rewards	.2188	4.67
	Dexterity FF12	-.2380	5.21
	I. Q.	.1891	3.20
	R: .607 R ² : .368		
Other absences	Weight on height and age	.2393	4.63
	Consulted	.2628	5.49
	Desire for education	.1914	3.04
	Occupational mobility	.1812	2.58
	R: .442 R ² : .195		

*Square of the ratio of b to standard error. All F values are significant at the .05 level or higher except values followed by a double asterisk (**).

that the concept of the job assumed as much importance as it has in the findings partly because it was an explicit focus introduced in the research instrument to begin with. Finally, it would seem that whatever concept the worker may have of her job, or attitudes that she may form in relation to it, these concepts and attitudes are likely to be functionally related with her concept of the company.

While the job satisfaction factors show some interesting patterned relationships with the two generalized attitudinal measures, the same cannot be said with regard to the other consequent variables that measure behavior. The correlations are generally random. Rating of job does correlate with performance and other absences. Can this generalized measure then be taken as a variable intervening between the more specific job satisfaction factors and at least some behavioral measures? The answer is probably no. The correlations in question are significant but negative. The common sense expectation is that more satisfied workers would be better performers also, but the converse seems to be true. In coding the absence measures low values were assigned to higher frequencies of absences, hence the expectation should be a positive correlation between this measure and rating of job. Again, the converse seems to be true.

Exploring the predictors of consequent variables

If job satisfaction variables will not predict job behavior, what variables will? The alternative chosen at this phase of the analysis was to include as part of the possible predictor variables the antecedents and correlates of job satisfaction. This alternative presented a total of 38 independent variables. With no firm theoretical guidelines for reducing them, it was decided that these variables would be allowed to "speak for themselves" as predictors.⁸

The statistical test selected for implementing this decision was a stepwise multiple regression analysis, which provides the added advantage of ordering independent variables according to the contribution they make in predicting the

dependent variable. For the sake of consistency all 38 variables were regressed not only on each of the four behavioral variables but on each of the two generalized measures of attitudes as well. Computer program instructions stipulated the termination of computations after the stepwise addition of the tenth predictor, or at earlier steps if the last variable entered failed to exceed the tolerance level of .003 or .025 using the *F* ratio.

The regression equations chosen at the end of the computations were those that satisfied two minimum requirements. First, the *F* value for the significance of the equation (ratio of mean squares) is significant at least at the .01 level. Second, the *F* value of the partial correlation controlled on the last step, and in each of the preceding steps with only one exception allowed, is significant at least at the .05 level.

The results of the stepwise multiple regression analyses are summarized in Table 7. Only a few substantive matters about the equations will be noted at this point. One is that the variances explained are generally moderate. Another is the relatively large number of predictors in each equation.

They range from a minimum of four for other absences to the specified maximum of ten for rating of company and for production. Another substantive matter that should be noted is the relative heterogeneity of the predictor variables in each equation. The different equations variously include as predictors job satisfaction measures, other attitudinal measures, dexterity scores, measures derived from the family household structure, and measures derived from relationships and activities in the plant, among others. A final point worth noting is that the predictor set of variables vary for each criterion variable. The more detailed interpretation of the findings in this part of the analysis requires consideration of theory, hence further comments will be deferred to the appropriate point in the succeeding section.

Discussion

Job satisfaction

This analysis began by focusing on 16 job

satisfaction items. The list of items was later found to be basically a variant of job satisfaction items developed by Herzberg and his associates. While the present study did not aim to test Herzberg's theory nor to replicate his methodology, it is probably with his theory that the findings should be compared first. Herzberg's extended reports are contained mainly in two volumes. The first (1959) discusses at greater length his research and theory. The second (1966) summarizes the research, elaborates on the theory, and reviews some 30 studies that Herzberg claims support his theory. A succinct and convenient summary of Herzberg's work is provided in a review by Hunt and Hill (1969: 101-102):

... They used a semi-structured interview technique to get respondents to recall events experienced at work which resulted in a marked improvement or a marked reduction in their job satisfaction. Interviewees were also asked, among other things, how their feelings of satisfaction or dissatisfaction affected their work performance, personal relationships, and well-being. Content analysis of the interviews suggested that certain job characteristics led to job satisfaction, while different job characteristics led to job dissatisfaction. For instance, job achievement was related to satisfaction while working conditions were related to dissatisfaction. Poor conditions led to dissatisfaction, but good conditions did not necessarily lead to satisfaction. Thus, satisfaction and dissatisfaction are not simple opposites. Hence a two-factor theory of satisfaction is needed.

The job content characteristics which produced satisfaction were called "motivators" by Herzberg and his associates because they satisfied the individual's need for self-actualization at work. The job environment characteristics which led to dissatisfaction were called "hygienes" because they were work-supporting or contextual rather than task-determined and hence were analogous to the "preventative" or "environmental" factors recognized in medicine. According to this dichotomy, motivators include achievement, recognition, advancement, possibility of growth, responsibility, and work itself. Hygienes, on the other hand, include salary; interpersonal relations with superiors, subordinates, and peers; technical supervision; company policy and administration; personal life; working conditions; status; and job security.

Subsequent writers who reviewed the empirical evidence (see, for instance, Athanasiou 1969, Hunt and Hill 1969) saw both positive and

negative confirmation of the two-factor theory, with the issue often revolving around how method-dependent Herzberg's findings are. The literature in more recent years (Schwab *et al.* 1971; Bockman 1971; Grigaliunas and Herzberg 1971; Atchison and Lefferts 1972; French *et al.* 1973) indicates that the issue is by no means closed.

The present study uses many of Herzberg's job satisfaction items but differs from his approach in at least two ways: (1) no attempt was made to determine whether some factors were satisfiers or dissatisfiers, and (2) a more conventional Likert-type scale was used to measure degree of satisfaction. The first finding of interest is that the items that Herzberg would identify as "motivators" group themselves into one dimension (intrinsic rewards) and account for more of the variance than other factors in the factor analysis. There are at least two important implications that may be derived from this finding. One is that the intrinsic factors may indeed constitute one motivational dimension distinct from others.

On the other hand, it is probably worth restating here the difference found between the two concepts, *job* and *company*, as perceived by the present worker-respondents. The intrinsic rewards factor (and this alone) correlates with a generalized measure of job satisfaction. But both measures, and the three other attitudinal factors — namely, external rewards, relationships-people, and relationships-system — all correlate with a generalized rating for the company. The cognitive map that emerges would thus place concern with the company as the focus, with intrinsic factors occupying a more or less definite domain within it. If concern with the company is not intrinsic, then it must be extrinsic, and the argument that lower level workers emphasize extrinsic factors receive some support. However, at the risk of obfuscating the issue, another interpretation of the finding might be ventured. It is possible that the present workers form their job-related attitudes more in terms of the *social unit* (i.e., the company) than in terms of the work (i.e., the job) itself. Thus, it may be said, not entirely

facetiously, that the problem with job-focused concepts and interpretations, such as intrinsic and extrinsic, is that they are job-focused. For the present workers at least, the company seems to be the central concern, not the job itself. Given a society undergoing transition from traditional to modern, and generally unable to provide alternative job opportunities for its labor force,⁹ mere participation in a company as a central concern of workers would be understandable.

As explained above, the present study cannot verify whether or not intrinsic factors act only as satisfiers. Neither can the other attitudinal factors delineated in the study — extrinsic rewards, relationships-people, and relationships-system — be verified to act mainly as dissatisfiers. The fact can only be stated that, using the procedures followed in this study, the latter three factors show themselves to be (a) three distinguishable patterns, in the same way that intrinsic rewards form a distinct pattern, and (b) acting as satisfiers in the same way that the intrinsic rewards factor acts as a satisfier. Extrinsic rewards, admittedly the most difficult to interpret among the four factors, might well reflect the worker's motivation to acquire more material rewards; this motivation might be more pronounced for workers at the level of the respondents. Further, to paraphrase Athanasiou when he speaks of wages (1969: 86), perhaps many executives and economists overestimate the significance of material rewards, just as many social scientists underestimate their importance.¹⁰ Relationships-people might well be a manifestation of the convergence of several Philippine values, in particular, those that Bulatao (1970) and Lynch (1970) have identified, and that Bulatao suggests (1970: 112) are held "by an ego highly in need of security and protection." The relationships-system factor seems to have no precedent in theory or empirical findings here or abroad and is presented here pro forma as part of a systematic reporting of the findings.

Job satisfaction as independent variable

For investigators of job attitudes, iden-

tifying attitudinal patterns and validating the instruments for measuring them has been only part of the problem. Determining whether these patterns are related to behavior has been an even more plaguing one. Athanasiou observes that (1969:91) "The strongest relationships have been found between job satisfaction and absences and turnover," at the same time that he notes significant measurement difficulties. Vroom (1964: 184-185) summarizes 20 studies which show correlations between job satisfaction and production varying from moderate negative (-.31) to high positive (+.86) and concludes that (1964: 187): "The absence of a marked or consistent correlation between job satisfaction and performance casts some doubt on the generality or intensity of either effects of satisfaction on performance or performance on satisfaction."¹¹ Hunt and Hill (1969: 103) make a similar observation. But it is Athanasiou's conclusion, after his review of job attitudes studies, that states the failure of current job attitude models in the sternest of terms (1969: 95):

After a consideration of the problems, inadequacies and generally low predictive capacity of attitude measurement devices, one might legitimately question why psychologists persist in attempting to "measure" attitudes. One answer is that ". . . because they are there." Another answer involves the belief that what people "say" has (or should have) some relation to what they do. Still another answer is couched in the terms, "To understand behavior we have to start somewhere and this is as good a place as any."

Actually, we attempt to study attitudes in order to verify the hypotheses that 1) they are really there, 2) that they have some relation to what people do, and 3) that knowledge of attitudes will help us to understand behavior. Certainly the data accumulated to date are disappointing in their failure to demonstrate expected level of support for any of these three hypotheses.

In the present study, an attempt was made to predict the behavioral variables production, performance, and absences from the four job satisfaction factors that were delineated. The attempt was notably unsuccessful. The result thus parallels that of similar attempts which have been made by other investigators.

The predictors of job satisfaction

Two steps taken in the present analysis take it somewhat out of the mainstream of current hypothesizing on the correlates or predictors of job attitudes and behavior. The first consisted in searching for sources or correlates of the job satisfaction factors from among a variety of variables classified as antecedents and correlates. The correlates of job satisfaction that show some significance consist variously of organizational variables, measures of dexterity, measures of household structure, and occupational and job mobility. This mixture of correlates is difficult to compare systematically with findings elsewhere. It may only be mentioned that a number of studies have successfully established connections between occupational status differentials and satisfaction; others have pointed out particular background factors as correlates of satisfaction (Robinson 1969: 66). Still others have tried to account for attitudes through organizational characteristics or otherwise through organization-focused variables.¹²

The predictors of consequent variables

The second departure from conventional analysis was made after it was found that the job satisfaction factors could not adequately predict the behavioral measures heuristically conceived as consequent variables. To explore other possible predictors, a total of 38 variables, consisting of the four job satisfaction factors, 22 heuristically categorized antecedent variables and 12 heuristically categorized correlate variables were run in a stepwise multiple regression analysis on each of the six consequent variables. The results yielded six different statistically significant equations. These had relatively large numbers of variables in each predictor set, and the variables were also relatively heterogeneous.

The results of the second step are just as difficult to interpret as those of the first. For, again, most investigators have generally attempted to predict the criterion variables from job attitudes. Where they have gone beyond using these predictors they have turned to the

structural properties of the organization. The results in the current analysis, on the other hand, include as predictors not only job attitude variables and organizational proportion but a mixture of other variables as well.

The more cautious interpretation of the results is that the functional relationships discovered here are, in fact, spurious. This interpretation finds added reason when the limitations of the current study are considered. One limitation is the lack of hypothesizing at the beginning of the study. Another is the crudeness of the measures used; this limitation is true of the critical job satisfaction items and of the other variables measured in the interviews as well. A third limitation is the expected instability of the behavioral variables (production, performance, absences) classified as consequents; the records for only one quarter was used. The instability of results associated with the use of small samples must also be mentioned. One final limitation has to do with the effect of the procedures used in searching for predictors. This procedure puts a premium on chance correlations and leads to exaggeration of the effects of the discovered independent variables on the dependent variables.

Yet, when the focus of examination shifts from the purely methodological to the substantive, from the precise statistical relationships among the specific variables to the *patterns* that they reflect, one finds no compelling reason at least *not* to accept the findings as valid. Competing alternative explanations, whether derived from attitudinal models or organizational models, have shown themselves to yield no more than incipient empirical validity. On the other hand, there is no inherent theoretical or commonsensical reason why such variables as satisfaction with present assignment, rating of present life, dexterity, the number of positions that the individual has held in the company, family household income, and rating of supervisor should not combine to predict, for instance, level of performance (as they do in the pertinent equation in Table 7). Dexterity should have surface plausibility since the dexterity measures were constructed precisely to predict performance. Does family

household income have the same surface plausibility? It certainly is more plausible than a measure of the structural characteristics of the Bachelorettes' Club that the respondent may nominally belong to. The answer is an oblique one, and is offered here only because there are no clear theoretical guidelines for including variables from other critical structures than the organization in predictive models of job behavior.

In a profound sense, studies testing causal hypotheses test what is predicted, because a reasonable basis for prediction has been established. Exploratory studies, on the other hand, look for what *might* be predicted and attempt to find the bases for making subsequent predictions. Assuming, therefore, that the precise statistical relationships found among the specific variables in this study continue to be considered fortuitous, the broad patterns that the relationships discovered seem to be pointing up still require explanation to complete the exploratory study.

One alternative explanation that might be mentioned in passing is provided by the approach that would begin with the classification of the more easily conceptualized independent variables into job satisfaction, dexterity, and organizational; and all others as background or situational variables.¹³ Such a conceptualization, however, invites an endless and unsystematic list at least of the latter set of variables. It relegates to an ad hoc, hit or miss method the hunt for at least one important set of determinants that warrant careful conceptualization as an integral part of a paradigm or model.

Interpreting the predictors: a multiple structures explanation

The more plausible approach suggested here for interpreting the findings just presented is probably best described in terms of a multiple-structures approach. The basic propositions underlying this approach may be stated thus: The individual's patterned attitudes and behavior in any given system or subsystem, such as an organization, is the result of the molding, conditioning, and reinforcing in-

fluence that he or she receives from three major sources. The first consists of more purely constitutional factors, such as physiological capabilities, nutritional status, state of health, and dexterity. The second consists of the social structures (or substructures) that he has participated in in the past (e.g., a school), is participating in at present (e.g., the household) and are open to his participation in the future (e.g., another company). The third consists of the interrelationships of these various structures in the individual. One indicator of these interrelationships is the movement of the individual from one structure to another, as in the case of physical and social mobility. Another, perhaps less direct, indicator is the individual's evaluation, according to a given norm or set of norms, of various structures such as different communities, companies, or departments. The propositions at this level are quite general and simply suggest an approach for viewing individual behavior and attitudes in any one structure.¹⁵ Such is the generality of this approach that it may be used as a starting point for explaining attitudes and behavior in structures as diverse as the family, voluntary associations, prisons — and more relevant to the present discussion — organizations.

Such an approach still needs to be reduced to more precise models before it can be useful for systematic empirical research. Before the requirements for such models are discussed, some comments on two conceptual issues that are likely to arise are called for. One has to do with the matter of fitting constitutional factors into a basically social-systems framework. Tentatively, it is suggested that the more purely constitutional factors be considered as constituting a structure in themselves that is analogous to though not in kindred with social structures. The second issue has to do with the use of attitudinal measures as predictor variables. The assumption here is that attitudes are basically reflections of the structures and their relationships mentioned above. As such, they may be used concomitantly or, with appropriate adjustments made at the a priori conceptualization and at the interpretation levels, interchangeably with more direct measures of structural pheno-

mena. The only requirement is that such variables should indeed be capable of reference to corresponding structures or structural properties or their interrelationships.

Reducing this approach to more parsimonious and precise predictive models calls for an interplay of abstract theorizing, allowing previously collected data to speak for themselves, and a good deal of common sense. The process requires at least three major interrelated steps at the conceptualization level for screening the entry of predictor measures into the hypothesized predictive model.

1. *The identification and ordering of relevant structures.* To explain a given attitude or behavior in one structure, some structures will be more important than others in that some structures are more likely to yield direct predictors of the given behavior or attitude than other structures. For instance, in the findings presented above, several structures appear to be of first-order importance, depending on the criterion variable: the constitutional structure, the organization itself, and the household. The attitudinal variables that emerged as predictors may be referred back to these structures as well as others that are not as easily identified.

Lower-order structures might be important mainly in terms of their relationships with first-order structures and thus, in a parsimonious model, might even be assumed away. A note of caution is nonetheless called for. The affiliation with a parent-teachers association may have little effect on an individual's behavior in his factory job; hence the association would be classified as a lower-order structure. But the *sum-total* of all such lower-order structures that the individual participates in may have a primary impact on the individual's attitude and behavior in a given structure.

The identification and ordering of different structures that influence the individual is an important first conceptual step. For it is at this point that the investigator decides what the most parsimonious combination of structures would yield explanatory variables for a given behavior or attitude. But the excessive reduction of the number of structures to focus on runs the risk of oversimplification, or of limit-

ing the generic utility of the resulting paradigm. For instance, on the surface, it makes a great deal of sense to use variables referring to the organization or the job alone to predict job attitudes and behavior. But such organization- or job-focused models are probably too parsimonious for their own good; among other shortcomings, they are likely to work with only a limited universe of organization people. They will be inadequate in explaining, for instance, the performance of salesmen, agricultural extension workers, family planning motivators, and similar individuals whose essential functions include linking the organization with other systems. An adequate explanation of attitudes and behavior in such cases will probably require as part of the first-order structures the organization to which the individuals belong, and at least one other type of structure, namely, that to which the clients belong. The success of these organization people probably depends in part on the type and degree of integration that they achieve with client structures.

2. *The derivation of variables from ordered structures for inclusion in an explanatory model.* In the organizational structure, Porter and Lawler (1965: 47) found that:

. . . Certain structural variables seem to have stronger relationships to attitudes and behavior than other structural variables. On the basis of the evidence to date, the two properties of structure that have the strongest relationships with, or effects on, the two types of "dependent" variables are two suborganization properties: organizational levels and subunit size.

The findings from the present study also indicate that some measures of household structure are good predictors for certain criterion variables, but not for others. It is thus evident that, in the same manner that not all structures will yield measures that constitute important variables for inclusion in a predictive model, not all measures of structures, even first-order ones, will constitute important variables either. Hence, selection of variables is again necessary. The appropriate measures may vary from very specific items to more abstract indices representing patterned relationships among numerous items.

3. *The hypothesizing of means-ends relationships among the variables.* The adequate explanatory model, therefore, will consist of hypothesized variables, and their relationships, that are referable to ordered structures. An elaboration here on what the precise alternative models might be like would be pre-mature. For reasons already explained, the equations and statistical relationships discovered in this study might be adopted as models only if one were prepared to accept a high risk of error. The discussion of the suggested approach may thus be ended at this point by saying that what has been accomplished so far is the laying down of some basic conceptual steps and limiting assumptions in the construction of adequate explanatory models.

The conceptual steps outlined above were not followed in the present study. Hence it would be both difficult and inappropriate to pretend as if they had been, and proceed to interpret the equations in detail. But the results broadly suggest what measures referring to what structures need to be taken to explain a given attitude or behavior. The variables in two of the equations summarized in Table 7 will be described in this light by way of illustrations.

The first illustrative equation is that which accounts for a relatively high 57.8 percent of the variance in predicting the worker's attitude toward the company (rating of company). The first predictor variable measures the worker's attitude toward the occupant of the supervisor's role in that company. The extrinsic rewards variable measures the tangible rewards that participants in the company have access to. Pre-Jenner companies is a variable that measures on a 3-point scale the degree of similarity to Jenner of other work structures that the respondent has participated in in the past. The prediction is negative, which means that if these structures dealt in garments Jenner does not compare favorably, and vice versa. Sewing experience measures the degree to which other structures helped prepare the individual for the particular task that she now performs. This variable was measured on a 3-point scale (0 = R had no sewing experience; 1 = R learned sewing from friends, relatives, or in fashion school; 3 =

R studied sewing and sewed for pay before joining Jenner). Dexterity FF11 and Dexterity FF12 are two variables that are tentatively classified as measures of the constitutional structure of the individual. It is difficult to explain why the former measure is a negative predictor. Desire for education is a dummy variable (0 = not studying and not planning to study; 1 = studying or planning to study) which gives an estimate of other structures that the individual participates in or is likely to participate in significantly: first, the school, then perhaps other organizations later. The variable is a negative predictor, as might be expected. Age may be considered an indicator of the individual's status in the various structures she participates in, or a purely constitutional factor, or both. Occupational mobility measures the difference between the type of structure that the father participated in in his own work and the type of structure that the individual participates in in her work. With family/alone is a dummy variable indicating whether or not the individual lives with her family (0 = yes; 1 = no).

Two organization-focused measures are thus indicated as important predictors of the workers' rating of the company: the worker-supervisor relationship and the amount of material rewards that the company makes available to workers. Three constitutional measures also contribute to the prediction of this rating. The worker's current or likely participation in a school contributes a negative prediction. A measure of the relationship between the father's work structure and the worker's herself also contributes a negative prediction. A characteristic of the household that the worker lives with constitutes the final predictor.

One solution to the perennially knotty problem of predicting performance is suggested by the second illustrative equation which will be discussed. The first two predictor variables are attitudinal measures. Satisfaction with present assignment, a dummy variable representing a *yes* and *no or not certain* response to the corresponding question in the interview schedule, is obviously referable to the organization itself. The structural referents of rating of present life are more difficult to identify, but they are

likely to be numerous and not confined to the company or its characteristics alone. The *F*value in this step in the regression is not significant, hence the variable is probably not a good predictor in this case. Dexterity KM8 is a measure of constitutional structure. Positions measure the different functions that the individual has filled at various times in the production process of the organization. Family household income is a characteristic of the household structure that the individual participates in. Rating of supervisor has been described in the discussion of the previous illustrative equation. The regression coefficient for this variable is a rather puzzling negative.

At least three different structures are thus specified as yielding variables that constitute direct predictors of performance: the constitutional, the household, and the organizational. The variables, used in the regression equation as given, account for 34 percent of the variance in performance. It is a modest but respectable proportion.

But this equation as well as the other five were not previously hypothesized. Their validity must thus be always open to question, and an unmodified replication of the research behind them on other samples is probably not worthwhile. The argument made here is that it is findings from carefully constructed models, using carefully refined variables derived from conceptually ordered structures that should be cross-validated. Whether or not the specific empirical findings from the present study prove to have more general validity, the study will have served its purpose if it stimulates more reasonably adequate models for explaining and predicting behavior and attitudes of individuals in organizations.

Notes

The study was supported by small grants from the Jenner Company (here written under a fictitious name) and the Philippine Social Science Council. The authors wish to acknowledge Generoso J. Gil, Jr., who very kindly shared his competence and time in settling questions on the quantitative procedures involved in the analysis and who also read the first draft of this report and made useful suggestions; to Susan

M. Bennett, Charles W. Lindzey III, and A. Timothy Peterson who were also consulted; Lourdes R. Quisumbing and Rebecca I. Aguirre for their research assistance; the general manager and the personnel officer of Jenner who not only facilitated research at the plant, but also shared their insightful ideas.

The electronic data processing for the present analysis (not budgeted for in the original grants) was done through the Institute of Philippine Culture. Cynthia Feranil undertook the programming and related tasks for the computer work. Computer time used was part of the donation made to the IPC by the Manila Electric Company Computer Services Center.

The authors are grateful for the assistance of these institutions and individuals, and for the cooperation of the respondents in the study.

At the time they submitted this paper, Wilfredo Arce was with the Department of Sociology and Anthropology, Ateneo de Manila University and Emma E. Porio was research associate at the Institute of Philippine Culture.

For an earlier formal report on the data, see Arce with Porio (1974).

1. For published studies, see for instance, Lynch (1967), Duñigo (1969), Kassarian and Stringer (1971), and Bennett (1971). A quick check of the graduate theses produced in the Ateneo de Manila University in recent years showed two relevant studies, namely, Sanchez (1973) and Lorredo (1973).

2. Vroom (1964); Porter and Lawler (1965); and Robinson, Athanasiou and Head (1969) give excellent reviews of the findings to the time of the writing of these works.

3. This information, furnished by the general manager, initiated the investigators' interest in the company. The question that it provoked was: Given a specific production process developed in the West, what adaptations are made when it is transported to another culture like the Philippines? Needless to say, that initial question is not explored in this report.

4. The classification of occupations and the measurement of occupational mobility are based on Bacol (1973). The Jenner respondents are classified as lower skilled workers (No. 8 in Bacol's classification). The 85 percent of respondents' fathers who occupy lower skilled urban jobs or who are in rural occupations are those fathers who were coded No. 7 through No. 14 in Bacol's occupational classification scheme (1971: 195-196).

5. Each variable is described only as it becomes important to the discussion. A fuller description of all the variables used in this study and their measurement will be furnished the interested reader upon request.

6. The investigators had access only to photocopies of the pertinent sections of the manual on these texts. The source is supposed to be *Guide to the Use*

of the *General Aptitude Test Battery*; Section III: Development (Washington: Government Printing Office, 1952-1958).

7. The respondent was asked to cite all the qualities of a good supervisor that she could think of. Then she was shown a drawing of a ladder with 11 (0-10) steps, and was asked to imagine the worst possible supervisor as being located at step 0 and the best possible supervisor at step 10. Finally, she was asked where on the ladder she would place the supervisors at Jenner.

This variation of the Cantril self-anchoring scale instrument was also used, with appropriate modifications in wording, in obtaining ratings of the respondent's job, the company, and her present life (see text).

8. Factor analysis as a data-reduction procedure was rejected for various reasons, a critical one being the small size of the sample.

9. In March and Simon's framework for analyzing employee motivations the "decision to participate in the organization" is a major focus (1958: chapt. 4). These authors also note the fundamental importance of alternative employment opportunities in the making of this decision (1958: 53; 100-106).

10. On the role of salary (or wage) per se in job satisfaction, Athanasiou finds that (1969: 86): "Much of the evidence attempting to relate wage levels to satisfaction is conflicting and confusing. Higher wage levels are frequently associated with factors such as experience, job level, productivity, etc., which may also have an effect on satisfaction."

11. In the same volume, Vroom offers another motivational model which he believes handles the prediction problems more adequately than existing models (1964: chapt. 2, 7). The model is reported to have been used successfully in a number of studies (Hunt and Hill 1969: 105-107).

12. The review by Porter and Lawler (1965) is suggestive of this point. More recent attempts in the same direction are indicated by Hilgendorf and Irving (1969), and Dawis *et al.* (1974).

13. This alternative is suggested by the reading of two articles. Baumgartell and Sobol (1959) conceptualize age, seniority, wage level, and job classification as background variables; and location size of the organization as an organizational factor. These variables are then tested as explainers of absenteeism. Katzell, Barrett and Parker (1961) classify, quantity, quality, profitability, and product-value of output; and turnover of work force as performance variables. Size of work force, city size in which organization is located, wage rate, unionization, and percentage of male in work force are considered situational variables. Both sets of variables are then correlated with job satisfaction items.

This conceptualization procedure has not been used in job behavior and attitude analyses alone. For instance, in a laboratory study, Acock and DeFleur

(1972) used as combination attitude analyses alone. For instance, in a laboratory study, Acock and DeFleur (1972) used a combination of attitudinal and situational ("the psychological, social, and cultural influences in the situation of action" [1972: 715]) variables to predict voting patterns on the legalization of marijuana.

14. The propositions are not new either. The influence (at least) of biological factors and social systems on the individual is so universally accepted in the social sciences that the idea needs no attribution to specific theorists. The concepts of reinforcing and conditioning must be traced ultimately to the works of B. F. Skinner and his predecessors.

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