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A STUDY OF PERCEIVED NEED SATISFACTIONS
IN BOTTOM AND MIDDLE MANAGEMENT JOBS:
A REPLICATION OF THE PORTER EXPERIMENT

By

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A.B., University of California, Berkeley, 1965

Presented in partial fulfillment of the requirements
for the degree of

Master of Business Administration

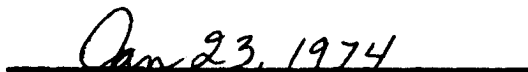
UNIVERSITY OF MONTANA

1973

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Though it would be egotistically satisfying to believe that I had completed this paper on my own, the facts must surely indicate otherwise. A person never learns or writes in a vacuum. He is influenced, guided, and sometimes cursed by many who are indispensable in producing the final product. I would like to acknowledge those who have filled this role in my educational process.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
LIST OF TABLES	iv
Chapter	
I. INTRODUCTION	1
Description of the Sample	2
II. METHODOLOGY	5
Procedure	5
Definitions	6
Questionnaires	8
Categories of Needs and Specific Items	8
Scoring	8
III. RESULTS	13
Perceived Deficiencies in Need Satisfaction	13
Importance of Needs	14
IV. ANALYSIS AND COMPARISON	17
V. SUMMARY AND CONCLUSIONS	31
APPENDIX	34
BIBLIOGRAPHY	40

LIST OF TABLES

Table	Page
1. Characteristics of Sample by Management Level	7
2. Differences Between Management Levels in Percentage of Subjects Indicating Need Fulfillment Deficiencies	9
3. Frequency Distribution for Responses Indicating Deficiency and Importance for Categories	11
4. Differences Between Management Levels in Percentage of Subjects Checking Maximum Importance of Needs	15
5. Summary of Relative Need Fulfillment Deficiency and Need Importance Within Management Levels	25

CHAPTER I

INTRODUCTION

Strict dependence upon the technical aspects of jobs is often the only means of effecting promotions in organizations. Promotion based upon technical qualifications, however, may lead to placement of individuals who are technically qualified, but not psychologically qualified. Thus, "if management and the individuals themselves knew more about the psychological aspects of jobs, and of the difference between jobs at different levels or in parts of the organization, promotional and other personnel errors might be reduced and organizational effectiveness thereby increased."¹

While much work has been done in relation to the technical aspects of management jobs "relatively few studies have been concerned with how the psychological characteristics of management jobs are perceived by the individuals in the jobs".² One of these few studies has been done by Porter.³ Porter's research was designed to provide information on need

¹Donald E. Porter, Philip B. Applewhite, and Michael Misshauk, eds. Studies in Organizational Behavior and Management, 2d ed., (Pennsylvania: Intext Educational Publishers, 1971), pp. 353-367

²Ibid., p. 354.

³Lyman W. Porter, University of California, Berkeley. Earlier studies, which were also concerned with differing potentials for achieving need satisfaction in relation to management level were carried out by Brown and Neitzel (1952). Subsequently, Porter's studies have served to stimulate like investigation by such men as Rosen (1961), and Haire and Ghiselli (1963). In fact, in addition to his initial study (1961) Porter himself has since completed a more comprehensive one involving many different management levels that has reinforced conclusions arrived at in his original study (1962).

satisfactions. The present study is a replication of his design using a military group, members of the ... Strategic Missile Wing (... SMW).

The work of some researchers, namely Argyris, suggests that the higher one moves in the management hierarchy the more potential he has for the satisfaction of self-actualizing needs. Porter's study and this replication should help to support or reject this assumption.

Description of the Sample

The ... Strategic Missile Wing is a line and staff form of organization. At the bottom of the management structure are the missile combat line crews. The combat line crew is composed of a Missile Combat Crew Commander (MCCC) and a Deputy Missile Combat Crew Commander (DMCCC). The duties of the line crews are to effectively man the launch control centers of the ... SMW. They are responsible for the continuing satisfactory operation of the missiles under their command during peacetime. In the event of war they are responsible for the launching of these missiles against enemy targets.

The flight commanders are the first level of middle management. The flight commanders have a reduced alert schedule and spend most of their working hours at squadron headquarters. Their duties include writing performance reports, overall supervision, day to day operation, and various other duties assigned by the squadron commander. The elevation of the flight commanders into a supervisory role is a relatively recent phenomenon designed to reduce total squadron personnel and to improve efficiency.

The flight commanders report directly to the Operations Branch

Officer (OBO) who evaluates their performance and oversees the general operation under his supervision. His job is also one of middle management. Both the flight commanders and the OBO's are usually selected from among the missile line crews and are thus quite familiar with the attitudes and working conditions of the line crew members.

The squadron OBO reports to the squadron commander who is responsible for the effective utilization of all the squadron resources and who serves as the immediate link to higher management levels (Deputy Operations, Wing Commander). For purposes of this study the squadron commander is the last level of middle management.

Beside the line organization (from the Wing Commander to the line crews) there are two other staff chains which will be considered; those of the Wing instructor branch (DOT) and the Wing standboard branch (DOV). The Wing instructor shop does not have as many levels of management as the squadrons. At the bottom are the instructor crews. These crews are responsible for the training of all missile crews who "pull alert duty". They have an evaluative function in that they must rate the line crew's proficiency in their monthly training. The instructor crews are directly subordinate to the senior instructor crew which coordinates the overall operation of the instructor branch. The senior crew is under the director of training. Thus, the instructor shop has a bottom level and two middle levels of management.

The standboard branch (DOV) has the responsibility of assuring that line crews are proficient in the day to day and emergency tasks associated with the operational missile system. It is organized in the same basic hierarchy as the instructor branch with the standboard crews at the bottom and ascending to the senior standboard crew and the Director of Evaluation.

Both the instructor (training) and standboard (evaluation) branches stand in a horizontal relationship to the squadron organization and are functionally separated from the squadron line crews. Members of the instructor group, however, are always selected from the squadron organization on the basis of a high degree of skill and competence as line crew members. In this regard, they may all be perceived by the line crews as belonging to a higher management level even though they are not in their direct chain of command. The members of the instructor shop and standboard may also feel themselves to exist on a somewhat higher level than the line crews. This feeling could have an effect on the perceptions of need satisfaction.

In relation to the line and staff management levels described above the following areas will be investigated.

1. Perceived deficiencies in psychological need fulfillment
 - a) Differences between bottom and middle management levels: Are there differences in perceived deficiencies of need fulfillment? In which specific need areas are the differences greatest?
 - b) Differences among need areas: Within each of the two management levels, which need areas produce the largest frequencies of perceived deficiency of need fulfillment?
2. Importance attached to types of psychological needs
 - a) Differences between lower and middle management levels: Are these differences in the importance attributed to various types of psychological needs? In which specific need areas are the differences greatest?
 - b) Differences among need areas: Within each of the two management levels which need areas produce the largest frequencies of attributed importance?"⁴

This study will be limited to the three branches described above.

⁴Porter, Applewhite, and Misshauk, eds. Studies in Organizational Behavior and Management, p. 355.

CHAPTER II

METHODOLOGY

Porter's methodology was adhered to as much as possible. Porter, however, was concerned only with industrial organizations; this study was concerned with a military organization. Porter studied three physically and functionally separate organizations not connected by common control. All three of the military organizations investigated here have a common ultimate control and they were not separated by great physical distance. There were interrelationships between the three organizations at all levels.

Procedure

Data collection was by questionnaire. The questionnaire was distributed by personal contact during University of Montana classes or by placing them on individual "crew boards" found in the squadrons, instructor shop or standboard shop. A self-addressed envelope was provided with each questionnaire placed on crew boards to facilitate data return. Prior coordination was accomplished with the squadron commanders and the directors of the instructor and standboard shops to assure maximum sample size and cooperation as well as to avoid obvious repercussions. Porter also collected his data by means of a questionnaire, but it was delivered by mail to individuals or it was distributed by the companies to the employees. Analysis of the collected data was accomplished in the same way using Porter's technique of P (α) values. An (α) value was given to the differences between percentages for management levels to indicate the level

of significance. Those questionnaires distributed on crew boards were filled out either at the office or at home.

Definitions

Bottom Management - For the purposes of this report line crews (exclusive of flight commanders), standboard, and instructor crews were members of "bottom management".

Middle Management - In this study flight commanders, Operations Branch Officers, senior instructor and standboard, the squadron commanders and the directors of training and evaluation were designated members of "middle management".

Needs Hierarchy - The meaning of needs as used in the investigation is in consonance with that employed by Maslow.⁵ Maslow held that needs may be divided into three major classifications; lower order (primary), middle, and higher order. Lower order needs include water, food, sleep, shelter and physical security. Middle order needs include affiliation, esteem, and nurturance. Higher order needs include those related to self-actualization; that is, the need to reach the highest possible stage of individual development.

Needs are assumed to be prepotent. Thus, when a lower order need has been satisfied it loses its motivational power and a higher order need becomes important. (This study assumed that for both lower and middle management individuals lower order needs had been, for the most part, satisfied.

Table 1 summarizes sample data supplied by respondents on page

⁵A. H. Maslow, "A Theory of Human Motivation", Psychological Review 50 (1943): 370-396.

Table 1
Characteristics of Sample by Management Level

Characteristics	<u>Management Levels</u>					
	<u>Bottom Management</u>		<u>Middle Management</u>		<u>Total</u>	
	Replication	Porter	Replication	Porter	Replication	Porter
N in obtained sample	36	64	21	75	57	139
Potential N available	302	121	32	107	324	228
% obtained N of available N	11.3	52.9	66.0	70.1	18.0	61.0
Median age (years)	27.0	43.5	34.0	43.8	30.0	43.7
Median seniority (years)	1.5	15.8	1.25	16.0	1.5	15.9
<u>Educational Level</u>						
% having a B.A. degree	100.0	N	100.0	N	100.0	N
% having or working on M.A.	97.0		67.0		86.0	
% planning to complete Ph.D.	3.0	0	0.0	0	2.0	0
<u>Rank</u>						
		T		T		T
% of Company Grade (2/Lt, 1/Lt, Capt)	100.0	A	57.0	A	84.0	A
% of Field Grade (Major, Lt/Col)	0.0		43.0		16.0	
<u>Total Years in Military</u>						
		V		V		V
% having from 0 to 4 years	50.0	A	0.0	A	32.0	A
% having from 5 to 10 years	42.0	I	14.0	I	32.0	I
% having from 11 to 20 years	8.0		81.0		35.0	
% having over 20 years	0.0	L	5.0	L	2.0	L
<u>Career Status</u>						
		A		A		A
% making the military a career	42.0	B	95.0	B	61.0	B
% not making the military a career	25.0		5.0		18.0	
% undecided	33.0	L	0.0	L	21.0	L
		E		E		E

7

of the replication questionnaire. (See Appendix B)

Questionnaire

In addition to questions related to sample characteristics the questionnaire consisted of 15 randomly arranged items related to perceived need satisfaction. The complete questionnaire appears in Appendix B.

Categories of Needs and Specific Items

The need categories and their hierarchical order are in general agreement with those used by Maslow. Two exceptions to Maslow's work were made in this study. The first exception was the assumption that managers had already satisfied their primary needs. As a result no items are concerned with collecting information related to primary need satisfaction. The second difference was the addition of an "autonomy" category. In Maslow's system these needs would have been included under the "esteem" needs category. In this study, however, these items have been put into a separate category since it seemed that they are logically distinct from other items that are more commonly associated with the term "esteem". Therefore, the autonomy items have been inserted in the hierarchical order of needs between the esteem category and the self-actualization category, to which they have some relation. Two other items are included in the questionnaire that may be relevant to two or more of the categories. These were non-specific items.

Scoring

The data presented in Table 2 indicate the differences between the amount of perceived need fulfillment actually associated with the respondents

Table 2
Differences Between Management Levels in Percentages
of Subjects Indicating Need Fulfillment Deficiencies

(COLUMN)	1	2	3	4	5	6	7	8	9	10
		Quest. No.	Lower Man. %	Middle Man. %	Difference	P VALUES (α)		TOTAL POP.		
(SECURITY)	Item I	II	41.7	76.2	- 34.5	Item .012	Cat. .012	Lower Mgt. Cat. 41.7	Middle Avg. 76.2	Difference - 34.5
(SOCIAL)	IIa	10	66.7	71.4	- 04.7	.716				
	b	13	44.4	47.6	- 03.2	.816	.764	55.6	59.5	- 04.0
(ESTEEM)	IIIa	12	83.3	66.7	16.6	.153				
	b	15	80.6	71.4	09.2	.429				
	c	9	66.7	81.0	- 14.3	.250	.779	76.9	73.0	03.8
(AUTONOMY)	IVa	8	86.1	71.4	14.7	.177				
	b	14	91.7	90.5	01.2	.876				
	c	3	94.4	90.5	03.9	.578				
	d	6	94.4	90.5	03.9	.578	.616	91.7	85.7	6.0
(SELF-ACTUALIZATION)	Va	1	91.7	76.2	15.5	.105				
	b	2	91.7	90.5	01.2	.878				
	c	4	91.7	90.5	01.2	.878	.575	91.7	85.7	6.0
(NON-SPECIFIC PAY)	VI	7	30.6	33.3	- 02.7	.834	.834	30.6	33.3	02.7
(NON-SPECIFIC BEING-IN-THE-KNOW)	VII	5	83.3	95.2	- 11.9	.204	.204	83.3	95.2	- 11.9

present management position and the amount that he perceives there should be. These data were developed by noting each case where the respondent circled part a, ("How much of the characteristic is there now associated with your management position?") on a lower scale than part b, (How much of the characteristic do you think should be connected with your management position?). Whenever this occurred the respondent was assumed to have indicated a deficiency in perceived need satisfaction for that particular characteristic. After the results were tabulated the number showing a deficiency for each characteristic was converted to a percentage of the total sample size. Thus, for (1) 15 out of 36 reported a perceived deficiency. This converts to 41.7%. The differences between the percentages of those perceiving a deficiency in need fulfillment in lower and middle management were then computed. For example, 41.7% of lower management indicated a deficiency for item (1) and 76.2% of middle management indicated a deficiency for the same item. The difference between the two was then entered in column 5. A negative quantity in column 5 indicates a higher perceived deficiency in the middle management group for that particular item than in the lower management group.

The data in column 6 were derived by utilizing the formula for ascertaining the significance levels for the differences in proportions.⁶ This study, for the most part, retained Porter's method of data development. One exception to this is the inclusion of α values for all items whether they were statistically significant or not. In both studies an α of .10 was considered as the maximum acceptable value for statistical significance.

$$\hat{P} = \frac{X_1 + X_2}{n_1 + n_2} \quad \hat{\sigma}_{\hat{P}} = \sqrt{\hat{P}(1 - \hat{P}) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)} \quad Z = \frac{\hat{P}_1 - \hat{P}_2}{\hat{\sigma}_{\hat{P}_1 - \hat{P}_2}}$$

Categories were tested using the following method. First, each sample respondent was given a score based on the number of deficiencies he indicated for any particular category. For example, in the area of self-actualization (Category V) the highest possible score was 3. Each sample respondent was given such a score for each category. A frequency distribution was then drawn up with the number of respondents for each numerical value located on the scale. (See Table 3) After the distribution was drawn a weighted average was determined. By multiplying the frequency by the appropriate value, all of the respondents, who at least equalled the weighted average, were considered in the group indicating little or no deficiency. The number exceeding the weighted average was considered as indicating considerable deficiency. Weighted averages were rounded off to the nearest whole number. The number indicating a considerable deficiency was then expressed as a percentage of the total sample. This percentage was then used in the formula that was used for determining the significance of differences between the individual items. For example, in the area of self-actualization the combined weighted average was:

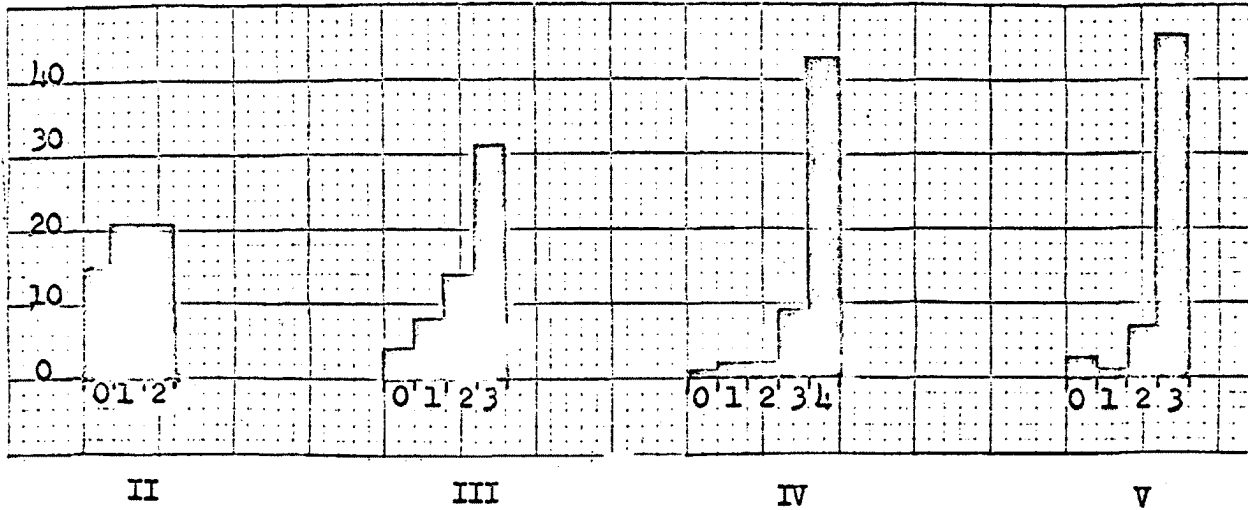
$$(3) (0) + (1) (1) + (7) (2) + 46(3) = 138; \quad 138 \div 57 = 2.68$$

As there were 46 out of 57 subjects who indicated deficiencies above the 2.68 level a considerable deficiency percentage of 81 was indicated.

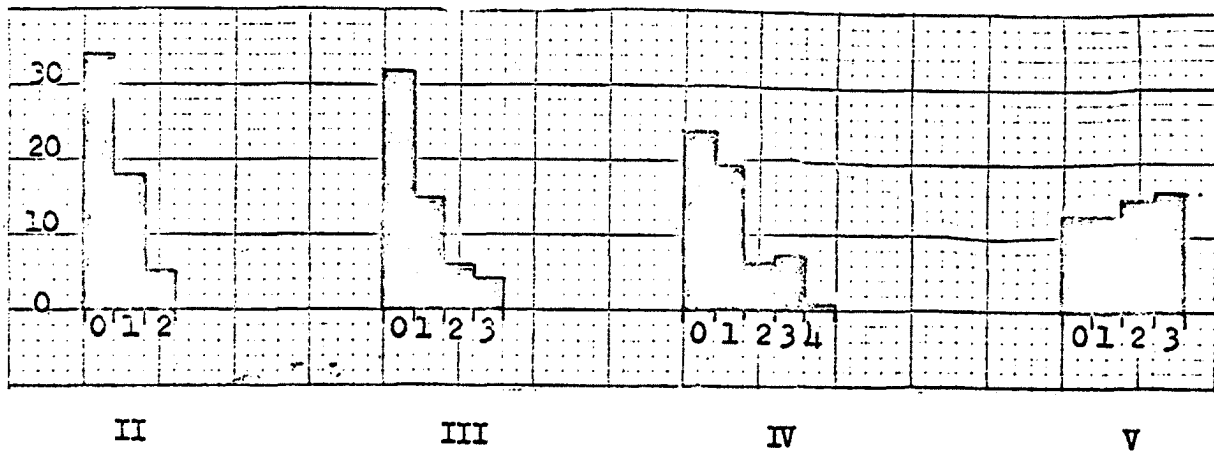
Table 3

Frequency Distribution for Responses Indicating
Deficiency and Importance for Categories

Deficiency Responses



Importance Responses



Scale: 1 Square = 2 Responses

CHAPTER III

RESULTS

Perceived Deficiencies In Need Satisfaction

Table 2 shows that for nine of the fifteen items lower management had a greater deficiency in perceived need satisfaction (evidenced by positive values in column 5). Of the fifteen items only security showed a statistically significant ($\alpha \leq .10$) difference between percentages. Three items approached statistical significance ($\alpha \leq .20$): the feeling of self-esteem (.153); the feeling of opportunity for growth and development (.105); and the feeling of authority (.177).

Table 2 also allows for a comparison by category. For three of the five specific categories lower management expressed a greater degree of deficiency than did middle management. Unlike the comparison of individual items, with the exception of security, there were no statistically significant ($\alpha \leq .10$) differences between lower and middle management considered by category. However, in spite of this fact, other results of importance to this study were noted: (1) Comparison by specific category indicated that lower management generally showed an increasing level of deficiency as respondents moved to items higher on Maslow's scale of needs. Middle management also followed this pattern with the exception of the security category; (2) The level of deficiency was very large ($\geq 70\%$) in three out of the five specific categories for lower management and four out of five for middle management. Indicated differences were large ($50\% > 69\%$) for one of the five specific categories for both levels of

management. Only the security category for lower management showed a moderate indicated deficiency; (3) Non-specific categories VI and VII are somewhat unique in that they are influenced by more than one, if not all, of the other five specific categories. In other words, they are composite categories. Since they do not exist as individual categories they are discussed apart from the others throughout the study. Item VI (deficiency in pay) did not show any statistically significant difference between lower and middle management. The perceived deficiency for this item was, however, the smallest indicated for any of the items or categories for both management levels. Item VII (being-in-the-know) showed a difference between management levels that approached statistical significance ($\alpha \leq .20$). Middle management perceived the greatest deficiency (95.2%) of all categories for this item.

Importance of Needs

Table 4 presents data relating to the importance of the various types of needs to both lower and middle management. The construction of Table 4 is similar to that of Table 2. The data used to prepare this table were based on item (c) of the questionnaire, ("How important is this characteristic to you?").

For nine of the fifteen items lower management indicated a greater perceived need importance than middle management. There were no statistically significant differences between categories. In spite of this lack of significant differences relevant information can be gleaned from the data. In the case of lower management, with the exception of the self-esteem category, needs are perceived as more important as one proceeds up the hierarchy. It was also noted that for lower management the

Table 4
Differences Between Management Levels in Percentage of
Subjects Checking Maximum Importance of Needs

(COLUMN)	1	2	3	4	5	6	7	8	9	10
						P VALUES (∞)		TOTAL POP.		
	Item	Quest. No.	Lower Man. %	Middle Man. %	Difference	Item	Cat.	Lower Mgt. Cat.	Middle Avg.	Difference
(SECURITY)	I	11	16.7	09.5	07.2	44.7	44.7	16.7	09.5	07.2
(SOCIAL)	IIa	10	16.7	52.4	- 35.7	00.5				
	b	13	25.0	14.3	10.7	34.0	35.0	20.9	33.4	- 12.5
(ESTEEM)	IIIa	12	36.1	28.6	07.5	56.9				
	b	15	25.0	23.8	01.2	92.0				
	c	9	13.9	04.8	09.1	28.5	66.0	25.0	19.1	05.9
(AUTONOMY)	IVa	8	16.7	23.8	- 07.1	51.6				
	b	14	36.1	47.6	- 11.5	39.6				
	c	3	16.1	28.6	- 11.9	28.9				
	d	6	16.7	19.0	- 02.3	82.6	54.8	21.6	29.8	- 08.2
(SELF-ACTUALIZATION)	Va	1	50.0	47.6	02.4	86.0				
	b	2	55.6	57.1	- 01.5	91.2				
	c	4	50.0	62.0	- 12.0	38.0	78.4	51.9	55.6	- 03.7
(NON-SPECIFIC PAY)	VI	7	25.0	33.3	- 08.3	50.3	50.3	25.0	33.3	- 08.3
(NON-SPECIFIC BEING-IN-THE-KNOW)	VII	5	27.8	38.1	- 10.3	41.6	41.6	27.8	38.1	- 10.3

three higher order need categories showed the highest importance levels. Middle management, with the exception of the social category, also showed a progressive nature of perceived need importance as one moved up the need hierarchy. In the case of middle management, in contrast to lower management, the three higher order needs were not the most important. For both management levels, however, the category of self-actualization, a higher order need, was perceived by far as the most important. This was also the area showing the highest need deficiency. Finally, security was the category of least importance.

When both need deficiency data and need importance data are considered together a tendency toward a relationship between the level of need deficiency and the importance of needs appears to exist. In lower management the lower order needs showed the lowest percentages of need deficiency and also the lowest percentages of importance. For middle management the pattern is far less clear. For example, security needs showed a high deficiency, but were the least important of all needs. Social needs, which had the least deficiency, were second highest in importance. Thus, lower management followed an expected pattern while middle management did not. That is, those needs of greatest deficiency were also of greatest importance. The apparent importance of the social needs is a direct result of the very large relative percentage of middle management subjects expressing maximum importance in the "opportunity to help other people".

CHAPTER IV

ANALYSIS AND COMPARISON

Porter noted that "the results show that for the sample of individuals and companies studied, lower level management positions were more likely to produce deficiencies in fulfillment of psychological needs than were middle level positions. This suggests that there exists a differential opportunity within management to satisfy various motivational needs."⁷ The results of the present research indicated a far less obvious trend in this regard. For nine of the fifteen items lower management evidenced a greater deficiency than did middle management, while in Porter's study lower managers expressed a greater deficiency than did middle management in thirteen of the fifteen items. Thus, while this replication does show a tendency toward greater deficiency perception in lower management, this trend was not as evident or pervasive as in Porter's case.

Independent observations of the study population suggest probable reasons for the smaller numbers of deficiencies in the present study: (1) the organizational form employed by the Strategic Missile Wing, (2) the backgrounds of the individuals concerned, and (3) the treatment accorded both management levels by their superiors. The middle management level of the ... SMW has only recently been expanded to include flight commanders. Thus, it is possible that the flight commanders have continued to identify with the line crews and have not developed separate identities as middle managers. Additionally, the treatment accorded the flight

⁷Porter, Applewhite, and Misshauk, eds. Studies in Organizational Behavior and Management, p. 363

commanders and squadron commanders by higher management levels also does not do much to foster middle management differentiation. In fact, squadron commanders are often subjected to considerably more criticism than are the lower management level members. Such treatment serves to drive the middle manager closer to an identification with his subordinates and this also could account to some extent for the small differences in perceived deficiencies.

In the case of Porter's results the middle management levels had probably established a distinct identity which had long established mores and patterns of conduct quite distinct from lower level management. Thus, his results indicated more differentiation between the two levels.

The organization investigated in the present study was considerably smaller than any of those studied by Porter. As the organization is small its members at both levels are in fairly close contact and have, more or less, free access to one another. No doubt this interchange also contributes to the homogeneity of responses.

In Porter's study the greatest deficiency differences between the two management levels occurred in a lower order need area (security), and in two of the higher order areas (esteem and autonomy). This replication showed the greatest differences between management levels to be in the area of security, self-actualization and autonomy. Middle management personnel showed a very considerable deficiency in the security area while a considerably smaller number of lower management individuals showed this response. In Porter's study lower management indicated the highest deficiency in the security area. It is perhaps important that in both the Porter study and this replication the percentages of lower management indicating a deficiency in the security area were almost identical. It was

the middle management percentage that changed (almost 50 percentage points).

Independent observations of the study population again suggest several possible reasons for the above difference. First, the military promotion system affects the way middle management people feel in regard to job security. Through the first ten years of his military career promotion is virtually automatic and is only withheld if an officer departs to a substantial degree from the patterns of accepted conduct. At the ten year point the senior captain begins to worry about whether the officer will be allowed to progress or eventually be separated from the Air Force. Most of the flight commanders, who comprise a majority of the middle management level, are senior captains who are at, or near, the critical 10 year point. Promotion is not certain and in recent years has become less and less certain. Thus, these individuals usually feel quite insecure and this feeling is strongly reflected in their responses.

Insecurity may also have been the result of the authoritarian management policies generally employed by higher management levels of the ... SMW. Positions are extremely tenuous. Only one small infraction may be the grounds for instant removal and replacement. The feeling of insecurity is magnified by the tremendous number of possibilities to make mistakes. The crew force at all levels is being examined constantly both from without and from within its own ranks. These constant inspections have proven to be the downfall of many lower and middle managers due to the concept of "blanket responsibility". The concept of responsibility is carried to such an extreme that even slight errors or accidents over which a commander has no control become grounds for removal or censure and decreased chance for promotion. On the other hand, a lower management individual

can go down no further in the hierarchy without being removed from the military and, as he is responsible for very few individuals, he experiences less insecurity.

In civilian organizations middle management people feel more sure of their positions. They are not subject to the arbitrary time periods of the "up or out" doctrine. Also, many middle managers in civilian organizations have built up a considerable expertise and seniority in their job area. This characteristic is not shared by middle management people in the ... SMW. (See Table 1, Sample Characteristics, page 7). All of these influences tend to lessen the feelings of insecurity in the civilian industry.

On the other hand, this replication found the category of least difference was that of esteem. Porter found this to be the area of greatest difference. The lesser difference in this replication might be explained as the result of an identification middle managers have with lower managers and the similar treatment they both receive from higher management as discussed earlier.

Porter found that "contrary to expectation, middle management was almost as dissatisfied as bottom management in the higher order need area, self-actualization. In this area only a relatively small difference was found between the two management levels. The differential opportunity within management to satisfy psychological needs appears to be much more prominent in areas other than self-actualization."⁸ The present study tended to support Porter's findings in this regard. The area of self-actualization did not indicate a large differential overall. In fact,

⁸Ibid., p. 364.

the average differential for the category was somewhat less than Porter's. It should be noted, however, that for this replication the difference indicated (6.0%) was second in relative size behind security. Thus, the differential opportunity within management to satisfy psychological needs in other areas (with the exception of security) does not exist to the degree it did in Porter's study.

The autonomy needs area in this replication also showed a very small difference as opposed to Porter's study which found a statistically significant difference in the area of autonomy needs. This would indicate a relatively more homogeneous deficiency in the two highest order need areas for the ... SMW than for Porter's organizations. The social need area was fifth in regard to difference between deficiencies in this replication indicating a very low differential for need satisfaction between management levels.

Porter stated:

"It is essential to consider differences among need areas within management levels as well as the differences between management levels for given need areas. When this is done the largest frequencies of perceived need fulfillment deficiency in both levels of management were found to occur in the higher order need areas; those of esteem, autonomy and self-actualization. These are the same need areas that various writers have indicated are the least satisfied in non-management production positions. Thus, from the very bottom of organization up through at least two thirds of management the higher order needs are not being as well satisfied as the lower order needs."⁹

Porter's statement is, in most respects, valid (especially for lower management) for this replication also. There are, however, some differences. For middle management security need deficiencies were slightly greater than were esteem need deficiencies.

⁹Ibid., p. 364.

Another area of difference exists in the degree to which individuals of both groups indicated a deficiency in all areas. Porter's subjects in lower management positions indicated an overall average deficiency of 50.54% as opposed to 71.32% for this study; middle management in Porter's study had an overall deficiency of 39.06% as opposed to 76% for this study.

There are several possible reasons for the high degree of deficiency indicated in this study, especially in the higher order need areas. One is the extremely regimented nature of the missile operations field. There is almost no room for the exercise of individual initiative and, in fact, initiative is often discouraged. Almost all actions of lower and middle management are controlled. Such control is held to be necessary to avoid "deviationism" or "nonstandard" performance. The fact that it has an effect on how needs are satisfied is important; for this extreme lack of need satisfaction can definitely create problems in the area of morale and even control. Often frustration is severe and the only method of avoidance is hostility, non-compliance with regulations while not under observation, or ultimately, resignation. For those who are just beginning their military career (50% of lower management in this study) the resignation option does not exist and their frustrations must be vented in other ways. Another reason may be the high level of education indicated for all subjects in this study. It is quite possible that the restrictive nature of the work combined with a knowledge of more moderate "behavioral" theories of management fostered, in many cases, by University of Montana courses produces the evidenced high degree of need deficiency in both levels. Another interpretation of this high level of perceived deficiency, especially for higher order needs, could be a direct result of the fact

that the more basic needs are well satisfied in the military. This results in more emphasis being placed by the individual on higher order needs.

According to Porter:

"To assess the impact of need fulfillment deficiencies, not only the size or amount of the deficiency must be taken into account, but also the importance of the particular need area to the individual involved."¹⁰

Porter found that there were "no consistent overall differences between the personnel in the two levels of management in how important they regarded fulfillment of various types of psychological needs."¹¹ His finding in this regard contrasted with that for need fulfillment deficiencies, where definite patterns of bottom-middle management differences were found. The results of the present study were in agreement with Porter in that no overall consistent pattern was observed between the two management levels in regard to how important they perceived the various needs to be.

Specifically, in contrast to Porter's study, security needs were the least important to both levels of military management. The logical reason for this difference lies in the nature of the military system which provides free medical care, dental care, housing, and other benefits either free of charge or at a nominal fee. As might be expected, since these desires are satisfied, for the most part, their importance is minimal. This result appears to be in conflict with the data for middle management for perceived need deficiencies. As middle management indicated a high

¹⁰Ibid., p. 364.

¹¹Ibid., p. 364.

deficiency in the security area one would expect a parallel response in the form of greater importance. This type of parallel is clearly evident for lower level management. Why is it then absent for middle management? One possibility is that the word "security" took on a split meaning for middle managers. The need deficiency was thought of in terms of job position or promotion potential while the importance concept was related to physical security. Another possibility could be a result of sublimation of the deficiency. Even though a substantial deficiency exists it is hidden or blocked out in the middle manager's mind by his forcing himself to believe it is unimportant. This allows him to reduce the apparent conflict between deficiency and satisfaction. The extremely low number of affirmative respondents would tend to support the sublimation possibility as it suggests a deliberate effort to reduce the importance of the security need. Such a behavior pattern is often seen in the middle managers who are near the promotion phase point. Some hide their doubts about promotion by flip-pantly stating that they wouldn't mind being RIF'ed (forced to leave active duty due to non-promotion) so they could receive severance pay. Others claim that they already had other job offers or careers they had planned to assume upon separation and thus promotion wasn't really important to them.

The results of both the Porter study and this replication show that for both management levels the three highest need areas were also generally the most important. In addition, of the three higher order needs self-actualization was, by far, the most important category in both studies for both levels. Thus, for both studies, especially in lower management levels, there is an apparent relationship between the degree of perceived deficiency and degree of importance. The only notable exceptions

to this relationship were indicated by middle management responses to perceived security need deficiencies and the importance of social needs.

Porter combined the results for deficiency with those of importance. The terms used represented the approximate relative degrees of deficiency and importance for the five need categories within each management level. Porter did not give the parameters used to distinguish between the three degrees used in his summary table, but from an examination of his data it is probable that the following separation points were used: (20-40%) small; (40-50%) moderate; and (50% and above) large. Table 5 differs from Porter's in that two additional degrees were added: a very small category (0-20%); and a very large category (70% and above). This was done to accommodate the greater range of deficiency percentages found in this replication.

This replication found, as Porter's did, that the most critical (greatest deficiency and greatest importance) area for both management levels was that of self-actualization. This conclusion was a result of the fact that for both groups this need showed the greatest deficiency and the greatest importance. Agreement in this regard tends to indicate that for both the civilian industries and the missile officers of the SMW the need actualization has been barely satisfied, if at all. Such a finding also indicates that both civilian and military organizations studied have not taken any effective steps to remedy the situation.

In Porter's study "the next most critical areas for bottom management were security which was considered of major importance and to have relatively moderate deficiency in fulfillment and autonomy which had a relatively large deficiency was seen as of moderate importance. Esteem and social needs appeared to be the least critical need areas for persons

Table 5

Summary of Relative Need-Fulfillment Deficiency and
Need Importance Within Management Levels

<u>Need Categories</u>	<u>Bottom Management</u>			
	<u>Relative Deficiency</u>		<u>Relative Importance</u>	
	<u>Current Study</u>	<u>Porter</u>	<u>Current Study</u>	<u>Porter</u>
Security	Moderate	Moderate	Very Small	Large
Social	Large	Small	Small	Moderate
Esteem	Very Large	Large	Small	Small
Autonomy	Very Large	Large	Small	Moderate
Self-Actualization	Very Large	Large	Large	Large

<u>Need Categories</u>	<u>Middle Management</u>			
	<u>Relative Deficiency</u>		<u>Relative Importance</u>	
	<u>Current Study</u>	<u>Porter</u>	<u>Current Study</u>	<u>Porter</u>
Security	Very Large	Small	Very Small	Large
Social	Large	Small	Small	Moderate
Esteem	Very Large	Small	Small	Small
Autonomy	Very Large	Moderate	Small	Small
Self-Actualization	Very Large	Large	Large	Large

in bottom management positions."¹²

In the present study the combined deficiency-importance table indicates a progression from security which was the least critical to self-actualization which was most critical. This uniform progression follows the theory of Maslow closely. Thus, in contrast to Porter's results security was the least critical of all need areas followed by social, esteem, autonomy and self-actualization in ascending order.

Porter stated that:

"the pattern for the combined deficiency and importance results in middle management was somewhat similar to patterns in bottom management. Security ranked below self-actualization as a critical area for middle management because although the size of the perceived deficiency was relatively small for positions at that level, the importance was relatively large. Even in middle management, however, security ranked above the autonomy, esteem, and social areas in the combined effect produced by deficiency and importance."¹³

The results of this replication differed considerably from Porter's in relation to the combined table of perceived deficiency and importance for middle management. Whereas Porter found security to be the second most critical combined area, the present study indicated that security was, as in lower management, the least critical of the five need areas with social and esteem being virtually identical and autonomy and self-actualization being the most critical. Overall, the pattern followed the pattern for lower management. This suggests that lower and middle management perceived their situation in much the same way. Porter's results, on the other hand, as indicated above, showed considerably less regularity of pattern for middle management. The more regular pattern

¹²Ibid., p. 365.

¹³Ibid., p. 365.

found in this replication could be a result of the fact that in the SMW lower and middle managers may see little difference in their positions in regard to their ability to achieve need satisfaction and in their perceived need importance.

Two of the questionnaire items (VI and VII) have not yet been mentioned. The reason for this is that they do not fit readily into any of the five need categories dealt with in either study. They are concerned with pay and with a feeling of being informed. Each of them tends to overlap into two or more of the need categories.

"The amount of pay one receives in his work would seem to satisfy both security and esteem needs and is also a means of satisfying primary physiological needs that could not be appropriately studied in this investigation. Likewise, the need to be informed would seem to satisfy social, esteem, and, perhaps, autonomy needs. Even though neither of these items could be related to only one specific need fulfillment category, each is obviously important to consider since they are so intimately a part of a person's thoughts and feelings about the job and since they provide multiple satisfaction."¹⁴

Porter found that the pay item had the highest percentage of deficiency for both management groups. He found that it had large importance for lower management and moderate importance for middle management. As a result of the fact that pay did appear to satisfy several types of needs, it was judged to be a "crucial" item by Porter for both lower and middle management. In the present study the results indicate that contrary to Porter's data, pay was the least important of all items investigated for both lower and middle management. In fact, in several cases, lower management respondents felt they were overpaid. The extreme difference for this item is probably a result of several factors. Pay plays a significantly

¹⁴Ibid., p. 365.

different role in civilian organizations than it does in military ones. Military pay is set by statute and is almost completely predictable for every rank and time in service. There is little mystery attached to a man's salary. If you know his rank (a fact usually easy to discover through a myriad of external symbols) and time in service (which again, can be guessed to a fair degree of accuracy from rank) you know within a few dollars how much he makes. As a result, pay does not serve to differentiate between individuals as it does in civilian groups. In other words, it has little status or self-esteem value as it does for civilian positions. Another significant point is that pay is, for almost all lower and middle managers, entirely adequate to satisfy basic physiological needs and provide additional amount for selective spending. In addition, many of the needs which must be paid for out of salaries in civilian organizations are given free to the military manager. These benefits also help lower the importance and perceived deficiency of pay. Pay will probably be a significant motivation for commercial organizations, but will not influence to any great degree the motivation of military groups.

In the Porter study item VII (the need to be informed) produced, overall, the second most frequent indication of need fulfillment deficiency in both lower and middle management positions. In contrast, in this replication the level of deficiency for item VII was fairly high for lower management (the third most important area) and had the highest deficiency of all seven categories for middle management. A possible cause of the higher deficiency indicated by middle management is that military directives are a result of higher headquarters decisions and lower and middle managers are often not quickly informed of actions. In the present study this item was the second most important of all categories investigated.

In Porter's study item VII was fourth in importance for both lower management and middle management.

As a result of its deficiency level and importance Porter held that the combined effect of being "in" on company information indicated that it was a key area in need fulfillment for lower management and a moderately crucial area for middle management. The combined results for item VII in this replication indicate that it is a critical area for lower management and a crucial area for middle management.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study served as both a replication and comparison of Porter's experiment dealing with perceptions of lower and middle management. It used, however, a military unit rather than civilian ones. Of specific interest were the areas of perceptions of need fulfillment deficiencies and need importance. Five need categories were singled out for investigation and comparison: security; social; esteem; autonomy and self-actualization. In both studies these five needs were chosen due to their "relevance to the concept of a hierarchy of prepotency of needs and their relevance to management positions."¹⁵

In tabular form the following are the major conclusions of the Porter study and the comparable conclusions arrived at in the present study.

Porter

1) "The vertical location of management positions appears to be an important variable in determining the extent to which psychological needs are fulfilled."¹⁶

2) "The greatest differences in the frequency of need fulfillment deficiencies between bottom and middle management

Replication

1) In the ...SMW the vertical location had little influence on the extent to which psychological needs are fulfilled. Only in the case of security (where middle management increased the degree of deficiency) was a significant difference noted.

2) The greatest difference in the frequency of need fulfillment deficiencies between lower and middle management in this

¹⁵Ibid., p. 366

¹⁶Ibid., p. 366.

Porter

positions occur in the esteem, security, and autonomy need areas. Those needs are significantly more often satisfied in middle than in bottom management."¹⁷

3) "Higher order psychological needs are relatively the least satisfied needs in both bottom and middle management."¹⁸

4) "Self-actualization and security are seen as more important areas of need satisfaction than the areas of social, esteem, and autonomy by individuals in both bottom and middle management."¹⁹

5) "The highest order need of self-actualization is the most critical need area of those studied, in terms of both perceived deficiency in fulfillment and perceived importance to the individual in both bottom and middle management. This need is not perceived as significantly more satisfied at the middle management level than at the bottom management level."²⁰

Replication

replication occurred in the areas of security, self-actualization, and autonomy. The last two areas showed very minimal differences in comparison to those shown in Porter's experiment.

3) The findings of the present study were in complete agreement with the results of Porter in this area. The degree of deficiency in this replication was, however, considerably greater than in the Porter study.

4) Self-actualization in this replication was also found to be the most important of all areas for both management levels, while security was of the lowest importance for both groups. Social, esteem and autonomy were mixed with some areas seen as more important by middle management and some by lower management.

5) The results of the present study were in complete agreement with Porter's for this item.

¹⁷Ibid., p. 366.

¹⁸Ibid., p. 366.

¹⁹Ibid., p. 366.

²⁰Ibid., p. 366.

Replication

6) Pay, while the most crucial item of all in Porter's study, was the least significant of all in this replication.

7) The need to be informed in Porter's study was the second most crucial area for lower management and the third most important for middle management. In this replication it was the second most critical area for both management levels.

Appendix A

Categories and Items of the Questionnaire (from Porter)

- I. Security Needs
 - a. The feeling of security in my management position
- II. Social Needs
 - a. The opportunity, in my management position, to give help to other people.
 - b. The opportunity to develop close friendships in my management position.
- III. Esteem Needs
 - a. The feeling of self-esteem a person gets from being in my management position.
 - b. The prestige of my management position inside the unit, (that is, the regard received from others in the company).
 - c. The prestige of my management position outside the unit, (that is, the regard received from others not in the unit; standboard, instructor shop, squadron).
- IV. Autonomy Needs
 - a. The authority connected with my management position.
 - b. The opportunity for independent thought and action in my management position.
 - c. The opportunity, in my management position, for the participation in the determination of methods and procedures.
 - d. The opportunity, in my management position, for the participation in the setting of goals.
- V. Self-Actualization Needs
 - a. The opportunity for personal growth and development in my management position.
 - b. The feeling of self-fulfillment a person gets from being in my management position, (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities.)
 - c. The feeling of worthwhile accomplishment in my management

Appendix A (cont.)

position.

Items Specific to Two or More Need Categories

- VI. The pay for my management position.
- VII. The feeling of being-in-the-know in my management position.

Appendix B

Please read the instructions carefully. You will be allotted 15 minutes to complete the questionnaire. (Please do not go over the time limit especially if you are completing the questionnaire at home or in the office rather than in class.)

Please circle or fill in the appropriate response

- A. Age _____
- B. Seniority (number of years and or months in your present position (Circle One) (ie. instructor, line, standboard) yrs. _____ mos. _____)
- C. Educational level (If degree not completed give approximate time of completion.)
1. B.A. _____
2. M.A. _____ Est. time of completion _____
3. Ph.D. _____ Est. time of completion _____
- D. Present Position
- Are you presently in Group A, B, or C (Circle One Capital Letter)
- | <u>Group A</u> | <u>Group B</u> | <u>Group C</u> |
|---|------------------------|----------------|
| Line Crew (excluding flight commanders) | Flight Commander | Other |
| Instructor (excluding senior instructor crew) | Senior Instructor Crew | |
| Standboard (excluding senior standboard) | Senior Standboard Crew | |
| | Squadron Commander | |
| | Chief DOT | |
| | Chief DOV | |
| | Chief OBO | |
- E. Rank (Circle One)
- Company Grade Field Grade
- F. Total Number of Years in the Military (Circle One)
- 1 to 4 5 to 10 10 to 20 over 20
- G. Are you planning to make or have you already made the military a career? (Circle One)
- Yes No Undecided

Below are listed several characteristics or qualities connected with management positions. For each such characteristic, you will be asked to give three ratings:

- A. How much of the characteristic is there now connected with your management position?
- B. How much of the characteristic do you think should be connected with your management position?
- C. How important is the position characteristic to you?

Please answer the above three questions for each item by circling a number on a rating scale from 1 to 7, where "low numbers represent low or minimum amounts, and high numbers represent high or maximum amounts."

For example:

The feeling of self-esteem a person gets from being in my management position

- | | |
|---------------------------------|---------------------------|
| a) How much is there now? | (min) 1 ② 3 4 5 6 7 (max) |
| b) How much should there be? | (min) 1 2 3 4 5 ⑥ 7 (max) |
| c) How important is this to me? | (min) 1 2 3 4 5 6 ⑦ (max) |

In this example the person felt (1) that there was a relatively small amount of self-esteem associated with his present management position; (2) not nearly as much as he thought there should be. In addition this response indicated that self-esteem is very important to this individual.

1. The opportunity for personal growth and development in my management position.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

2. The feeling of self-fulfillment a person gets from being in my management position (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities).
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

3. The opportunity, in my management position, for participation in the setting of goals.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

4. The feeling of worthwhile accomplishment in my management position.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

5. The feeling of being-in-the-know in my management position.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

6. The opportunity in my management position, for participation in the determination of methods and procedures.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

7. The pay for my management position.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

8. The authority connected with my management position.
 - a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 - b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 - c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

9. The prestige of my management position outside the company (that is, the regard received from others not in the company).
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)
10. The opportunity, in my management position, to give help to other people.
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)
11. The feeling of security in my management position.
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)
12. The feeling of self-esteem a person gets from being in my management position.
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)
13. The opportunity to develop close friendships in my management position.
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)
14. The opportunity for independent thought and action in my management position.
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)
15. The prestige of my management position inside the company (that is, the regard received from others in the company).
- a) How much is there now? (min) 1 2 3 4 5 6 7 (max)
 b) How much should there be? (min) 1 2 3 4 5 6 7 (max)
 c) How important is this to me? (min) 1 2 3 4 5 6 7 (max)

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