

연구논문

What Motivates Personnel in the U.S. Military Organizations?: Testing the Need Hierarchy Theory

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〈 Abstract 〉

The first purpose of this study is to examine the differential effects of various types of needs satisfaction on motivation. In addition, the theory proposed that the need at a higher level become salient when the need at a lower level is met. The second purpose of this study is to investigate this proposition by using moderator effect model. This study uses the data from the 2013 Federal Employee View Survey conducted by the U.S. Office of Personnel Management. The respondents from the three military departments (i.e., Army, Navy, and Airforce) were included in our sample. The results revealed that, first, esteem needs and safety need have the strongest effects on motivation. Second, motivational effects of higher level needs depend on the gratification of lower level needs, except with regard to physiological need. The findings as to moderating effect of physiological need suggest that the opposite of Maslow's gratification/activation proposition may occur. In other words, satisfaction of physiological need can have crowding-out effect.

[Key Words: Motivation, Need hierarchy, Military organization]

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I . Introduction

Steers, Mowday, and Shapiro (2004) stated that the topic of employee motivation plays a central role in all subfields of management scholarship. Indeed, both practitioners and scholars view motivation as a fundamental building block in all kinds of management practices and theories. Earliest motivation scholars posited that human beings constantly pursue to gratify their own needs, and that managers gratify these needs can motivate them to work to achieve organizational goals. Hence, for motivation, managers need to first understand what their employees' needs are.

Maslow's (1943) classic of motivation theory provides conceptual framework for understanding the types and structure of human needs. He classified human needs into five different categories: physiological, safety, love/belonging, esteem, and self-actualization. He also proposed that each of the needs emerges in sequence: the need at a higher level become influential only when the needs at lower level are satisfied. The implication of Maslow's theory is that managers need to understand what the most potent needs of their employees are and focus on attempting to satisfy the currently potent needs. Despite the need theory has a potential for providing a meaningful insight into and practical implication for motivation, the theory has not drawn much attention of management scholars. In this context, the first aim of this study is to find what types of needs among the five are the most influential for employee's motivation among the U.S. military personnel. The second purpose of this study is to test the proposition of Maslow as to hierarchical structure of needs manifestation. Empirical evidences for Maslow's proposition as to sequential manifestation of needs have not been robust (Wahba & Bridwell, 1976). This study uses moderating effect model to test the proposition.

II. Theory

1. The Need Satisfaction Model

The need satisfaction theory of motivation is grounded on a simple premise that behaviors that satisfy one's own needs continues. The further argument is that promoting the job characteristics or managerial intervention that satisfies employee's need is primary vehicle for motivating employees. Hence, according to this theory, understanding the content and structure of employees' need is the first step for designing jobs and rewards. In addition, Maslow viewed that human needs are structured in the form of hierarchy: need at lower level become salient first, and the need at the next higher level become salient when the lower level need is satisfied. Thus, managers need to know what type of need is most important for their workforce in order to provide proper incentives in accordance with the relative importance of needs (Greenberg & Baron, 2003). Therefore, in this study, it will be examined what types (i.e., levels) of need satisfaction are most influential for motivation of employees.

Maslow viewed the physiological needs as the most basic needs placed at the lowest level in the need hierarchy which should be met first. Physiological need refers to the physical requirements for human survival. For instance, food, cloth, housing are the examples of the requirement for human survival so providing this basic necessity can be an important vehicle for motivating workers. In organizational setting, satisfaction with pay is often conceived as a basic requirement for meeting physiological needs. The empirical evidences for the impact of pay satisfaction on motivation are somewhat equivocal. Lum, Kervin, Clark, Reid and Sirola (1998) found in the study of nurses that pay satisfaction is negatively related to turnover intention. Currall, Towler, Judge, and Kohn (2005) examined the impact of pay satisfaction of 6,394 public school teachers and found that it is negatively associated with turnover intention. On the contrary, in the meta-analysis of 203 studies conducted by Williams, McDaniel and Nguyen (2006), it

is found that the effects of pay satisfaction on turnover intention and absenteeism were moderate, and the effect on job performance was weak. Thus, in this study, it will be examined whether the effects of pay satisfaction on motivation is positive in the context of military organizations.

Hypothesis 1. Satisfaction of physiological need (e.g., pay) is positively associated with employee motivation.

With their physical needs relatively satisfied, the individual's safety needs become most influential for his/her behavior. The safety need refers to the desire for feeling safe from all types of threats. In organizational setting, satisfaction of safety need involves protection from health and safety hazards on the job and from unfair treatments by unilateral authority. Protection from health and safety hazards is highlighted in the industries where job related risk of injury is high such as for construction workers. In the context of public organizations, protection from abuse of managerial authority is the major issue regarding safety need. Public organizations implement various human resource policies to prevent abuse of employees. The examples of these policies include prohibition of discrimination, arbitrary action, personal favoritism and coercion for partisan political purposes. Little studies investigated the effects of these policies on worker motivation. Thus, the following hypothesis will be tested.

Hypothesis 2. Satisfaction of safety need is positively associated with employee motivation.

After physiological and safety needs are fulfilled, the third level of human needs emerges which involves having friendship and intimacy among colleagues and with supervisors. Baumeister and Leary (1995) concluded based on an extensive review of the literature from multiple fields that individuals have strong desires to form and maintain deep and frequent interpersonal interactions within a stable relational bond, the lack of interpersonal attachment causes serious mental and behavioral

problems. Organizations have informal groups such as sports clubs, religious groups, and hold various social events in an attempt to help fulfill employee's relationship need. There are some empirical evidence for motivational effect of relationship need satisfaction. For instance, Yoon, Baker and Ko (1994) found that interpersonal attachments have a positive effect on organizational commitment. Hence, the following hypothesis is suggested.

Hypothesis 3. Satisfaction of relationship need is positively associated with employee motivation.

Fourth type of needs is esteem need. All humans have a desire to feel respected and to be accepted and valued by others. People want to engage in works that requires higher level of efforts or skills in organizations to gain recognition. These activities give the person a sense of contribution and empowerment. Organizations encourage the participation of employees to decision making in order to fulfill their needs for esteem. The empirical evidences for the effects of esteem need satisfaction are well established. DeCicco, Laschinger and Kerr (2006) studied the determinants of registered nurses' commitment, and found that perception of structural empowerment, psychological empowerment, and respect explained about 48% of the variance in affective commitment. Laschinger, Finegan and Shamian (2001) also found that nurses' perception of empowerment significantly increases their commitment. Boezeman and Ellemers (2007) found that among workers of voluntary organization, pride and respect are the most significant determinants of commitment. Bogler and Somech (2004) found in a study of Israeli teachers that empowerment is significantly associated with commitment and organizational citizenship behavior. Hence, the following hypothesis is suggested for this study.

Hypothesis 4. Satisfaction of esteem need is positively associated with employee motivation.

After all the other types of needs are fulfilled, individual's need for

self-actualization emerges. Self-actualization need refers to a person's desire to realize his/her full potential. Maslow describes the need at the highest level as the desire to accomplish everything that one can, to become the most that one can be. In organizational context, diverse employee development programs and job training are provided for employees in order to satisfy this self-actualization need. The empirical evidence for the motivational effect of satisfaction of self-actualization need is abundant. Benson (2006) investigated the effects of a number of employee development programs and found that on-the-training significantly increased commitment and reduced turnover intention, and that tuition reimbursement decreased turnover intention. Lee and Bruvold (2003) found in a study of nurses that perceived investment in employees' development has a direct effect on affective commitment and indirect effect on turnover intention. Tansky and Cohen (2001) found that when organizations make efforts to develop their managers, the managers become more committed to the organization and also more likely to develop their employees. Birdi, Allan and Warr (1997) found that job satisfaction and commitment among manufacturing employees were significantly related to participation in training and development activities. Hence, the following hypothesis is suggested for this study.

Hypothesis 5. Satisfaction of self-actualization need is positively associated with employee motivation.

2. Testing the Hierarchical Structure

Maslow proposed that the five types of needs emerges and become salient in sequence: the higher the satisfaction with a given need, the higher the motivational importance of the need at the next level. The practical implication of this proposition is that managers need to know what type of need is already satisfied and hence no longer influence motivation, and what type of need is most salient and hence most influential for motivation.

Wahba and Bridwell (1976) reviewed the studies testing Maslow's proposition as

to hierarchical structure of needs, and found that although many studies used various methodological techniques such as experimental, quasi-experimental, and longitudinal studies, none of these methods are appropriate to test Maslow's proposition, and concluded that empirical support for the proposition was not established.

In this study, Maslow's proposition of need hierarchy will be tested using moderator effect model. The independent variables of this study will be needs satisfaction, namely, the extent to which individuals satisfied with regard to needs at each level. The effects of these independent variables influence the degree of motivation measured by extent to which individual put an effort to do their job better. In order to test the gratification-activation proposition, the moderating effects of each lower level need will be tested on the relation between a higher level need and motivation. The logic underlying these moderator effects is that, if Maslow's proposition is correct, the effects of a higher level need (i.e., the effects of independent variable on dependent variable) will be moderated by the extent to which the need at lower level is satisfied. In other words, effects of a higher level need will be greater when a lower level need are satisfied because the proposition stated that higher level needs become potent only when the lower level need is satisfied. If a lower level need is not satisfied (i.e., for a low value of moderator variable), the effects of a higher level need will not be potent and hence not significant, since higher level needs are not salient until a lower level need are satisfied. Using moderator effect model will allow testing the theory from a different angle.

Hypothesis 6. The relation between satisfaction of a higher level need and employee motivation is moderated by satisfaction of the lower level needs.

III . Methods

This study utilized the data from 2013 Federal Employee Viewpoint Survey (FEVS)

conducted by the U.S. Office of Personnel Management (OPM). This is a large dataset with 376,577 respondents from across 57 federal agencies. From the FEVS dataset, the respondents from the three military departments – the Department of the Air-force, Army, and Navy – were selected and used for analysis. The sample sizes for each department were, 12,129(Air-force), 22,130(Army), and 19,518(Navy), respectively. Respondents with missing data were deleted from the sample using the listwise deletion function in SPSS.

Among the respondents, 73.5% were non-supervisor or team leader, while 18.2% were supervisor/manager/executives. As for gender, 46.7% were male, 43.9% were female. 30% were minority as to racial group and 58% were non-minority. The 19.6% were under the age of 40, 25.1% were 40-49, 32.5% were 50-59, 12.3% were 60 or older.

Dependent variable in this study is the degree of motivation. Motivation can be defined as individuals' desire to make efforts to achieve goals. To measure the degree of motivation, two questionnaire items from the FEVS are selected: "when needed I am willing to put in the extra effort to get a job done," "I am constantly looking for ways to do my job better." The Cronbach's alpha was .765.

Five different types of needs that are explained in the above section are included for independent variables: physiological, safety, love/belonging, esteem, and self-actualization need. Physiological need refers to what are basically needed to maintain one's existence, and is measured by a single question: "considering everything, how satisfied are you with your pay?" The safety need refer to the need for protection from threats and measured by three questions: "employees are protected from health and safety hazards on the job," "arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated," "prohibited Personnel Practices (for example, illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating veterans' preference requirements) are not tolerated." The Cronbach's alpha for this variable was .791. The need for relationship refers to the need satisfied when individuals have a caring relationship with their colleagues, and

is measured by the following three questions: “the people I work with cooperate to get the job done,” “my supervisor/team leader listens to what I have to say,” “I have trust and confidence in my supervisor.” The Cronbach’s alpha for this variable was .790. The need for esteem refers to the need to feel respected and valued by others, and is measured by the following three questions: “employees have a feeling of personal empowerment with respect to work processes,” “my supervisor/team leader treats me with respect,” “How satisfied are you with your involvement in decisions that affect your work?” The Cronbach’s alpha for this variable was .774. The need

Table 1. Survey Items and Reliability

Variable	Survey Items	Reliability
Motivation	When needed I am willing to put in the extra effort to get a job done.	.765
	I am constantly looking for ways to do my job better.	
Physiological Need	Considering everything, how satisfied are you with your pay?	N/A
Safety Need	Employees are protected from health and safety hazards on the job.	.791
	Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.	
	Prohibited Personnel Practices (for example, illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating veterans' preference requirements) are not tolerated.	
Relationship Need	The people I work with cooperate to get the job done.	.790
	My supervisor/team leader listens to what I have to say.	
	I have trust and confidence in my supervisor.	
Esteem Need	Employees have a feeling of personal empowerment with respect to work processes.	.774
	My supervisor/team leader treats me with respect.	
	How satisfied are you with your involvement in decisions that affect your work?	
Self-actualization Need	I am given a real opportunity to improve my skills in my organization.	.788
	My supervisor/team leader provides me with opportunities to demonstrate my leadership skills.	
	How satisfied are you with the training you receive for your present job?	

for self-actualization refers to the need to realize individual's full potential and described as growth needs by Maslow. This variable is measured by the following three questions: "I am given a real opportunity to improve my skills in my organization," "my supervisor/team leader provides me with opportunities to demonstrate my leadership skills," "How satisfied are you with the training you receive for your present job?" The Cronbach's alpha for this variable is .788. The survey items and reliability scores for each variable is presented in the table 1. All the questions are measured using the five-point Likert scale.

A number of control variables are included in the model: supervisory status, gender, minority status, age, and tenure. To measure supervisory status, non-supervisor and team leader is coded as 0 and supervisor, manager, and executive is coded as 1. To measure gender, male was coded as 0, female as 1. To measure race, minority was coded as 1, non-minority as 0. To measure age, respondents with age of under 40 were coded as 1, 40-49 as 2, 50-59 as 3, and 60 or older as 4. To measure tenure, service of 5 or fewer years was coded as 1, 6-14 years as 2, 15 or more years as 3.

IV. Results

The table 2 presents the descriptive statistics and correlations matrix. The mean values for the independent variables in this study were 3.269 (physiological need), 3.679 (safety need), 3.839 (relationship need), 3.540 (esteem need), and 3.477 (self-actualization need), respectively. The mean value for dependent variable, motivation, was 4.449, with standard deviation of 0.619. The correlations among variables were mostly less than 0.7. However, the correlation among relationship need, safety need, and self-actualization need were relatively high. I suspected that this high value of correlation can cause the problem of multi-collinearity. For a further investigation, I examined the VIF (Variation Inflation Factor) values for the two inter-correlated variables. The VIFs for the three variables were 3.701

(relationship need), 4.380 (esteem need) and 3.069 (self-actualization need), respectively. Hair, Anderson, Tatham, and Black (1995) suggested that the VIF value of higher than 10 indicates the problem of multi-collinearity. Since the VIFs for all three variables are less than five, I concluded that the multi-collinearity problem in the model of this study is not severe.

Table 2. Descriptive Statistics and Correlation Matrix

	Mean	Std. Dev.	Motivation	Supervisor	Gender	Age	Minority	Tenure	Physiological	Safety	Relationship	Esteem
Motivation	4.449	.619										
Supervisor	.211	.408	.076**									
Gender	.346	.476	.046**	-.095**								
Age	2.546	.925	-.001	.114**	-.070**							
Minority	.312	.463	.041	-.044**	.104**	-.029**						
Tenure	2.103	.820	-.063**	.128**	.118**	.423**	-.002					
Physiological	3.269	1.186	.149**	.069**	-.006	.012*	-.019**	-.024**				
Safety	3.679	.898	.300**	.153**	-.073**	.021**	-.065**	-.063**	.325**			
Relationship	3.839	.900	.299**	.085**	-.063**	.024**	-.030**	-.052**	.290**	.620**		
Esteem	3.540	.884	.335**	.104**	-.052**	.037**	.017**	-.051**	.349**	.678**	.802**	
Self-actualization	3.477	.950	.316**	.123**	-.037**	.019**	.006	-.046**	.369**	.629**	.713**	.779**

* p<.05

** p<.01

Table 3 summarizes the OLS regression analysis on motivation. Aiken and West (1991) pointed out that since moderator variables are usually correlated to the independent variables, centering the variables is necessary. In order to center the variables, first I transformed independent variables into the standardized scores, and created the moderator variables using the standardized scores. In this case, unstandardized coefficients are interpreted as standardized coefficients (beta).

The adjusted R square values for the model is .155, indicating that the model explained only 11.5% of the total variance on motivation. To examine the effects of individual variables, satisfaction of physiological need does not have a significant effect on motivation, whereas all the other independent variables were significant and positive influences on motivation. Comparing relative strength of the effects of these variables, it was revealed that esteem need satisfaction showed the strongest

Table 3. The Influence of Needs Satisfaction on Motivation

Variable		Standardized Coefficient (Beta)	Standard Error
Constant		-0.062**	0.016
Control Variables	Supervisory Status	0.097**	0.011
	Gender	0.148**	0.010
	Age	0.017**	0.005
	Minority	0.073**	0.010
	Tenure	-0.072**	0.006
Independent Variables	Physiological Need	0.006	0.005
	Safety Need	0.102**	0.007
	Relationship Need	0.095**	0.009
	Esteem Need	0.158**	0.010
	Self-actualization Need	0.108**	0.008
Moderator Variables	Self-actualization * Physiological	0.015	0.008
	Self-actualization * Safety	0.000	0.009
	Self-actualization * Relationship	0.024*	0.010
	Self-actualization * Esteem	0.047**	0.011
	Esteem * Physiological	-0.022*	0.010
	Esteem * Safety	0.003	0.011
	Esteem * Relationship	0.061**	0.009
	Relationship * Physiological	-0.028**	0.008
	Relationship * Safety	-0.018	0.009
	Safety * Physiological	0.004	0.008
Adjusted R Square		0.155	
F		379.984**	

* p<.05

** p<.01

impact on motivation (beta=.158), while relationship need satisfaction showed the weakest impact (beta=.095). As for the moderator effects, several moderator effects were significant. The impact of self-actualization need satisfaction on motivation is positively moderated by relationship need satisfaction and esteem need satisfaction. The effect of esteem need satisfaction on motivation is positively moderated by relationship need satisfaction, and negatively moderated by physiological need satisfaction. The effect of relationship need satisfaction on motivation is negatively moderated by physiological need satisfaction.

To probe these significant moderator effects in this study, we used the method suggested by Aiken & West (1991). In this method, the regression coefficients per each level of moderator variables (low, medium, and high) are calculated and compared to each other. Low value for moderator variable is calculated as the mean minus one standard deviation, the medium value is calculated as the mean value of moderator variables, and the high value is calculated as the mean value plus one standard deviation.

Figure 1. Moderator Effects of Relationship Need Satisfaction

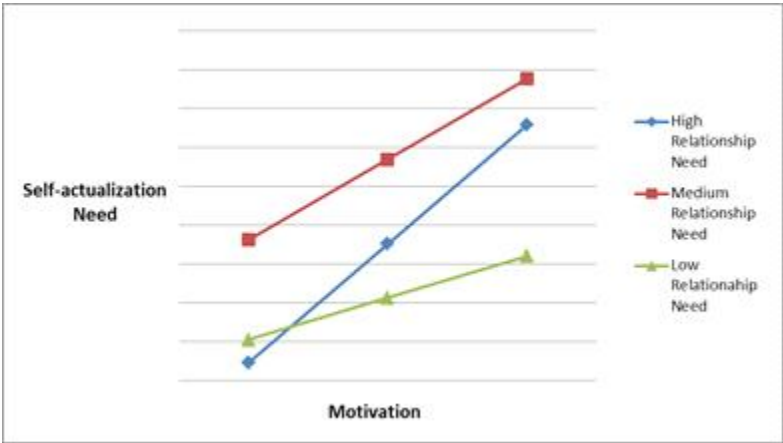


Figure 1 presents the moderating effect of relationship need satisfaction on the relation between self-actualization need satisfaction and motivation. The regression coefficient for high degree of relationship need satisfaction was .31 and was significant at .01 ($t=41.840$). When the degree of relationship need satisfaction was medium, the coefficient was .21 and significant ($t=34.151$). When the degree of relationship need satisfaction was low, the coefficient was .11 and significant ($t=15.320$). This result indicates that motivational effect of self-actualization need satisfaction increases as individual's relationship need satisfaction level increases.

Figure 2. Moderator Effects of Esteem Need Satisfaction

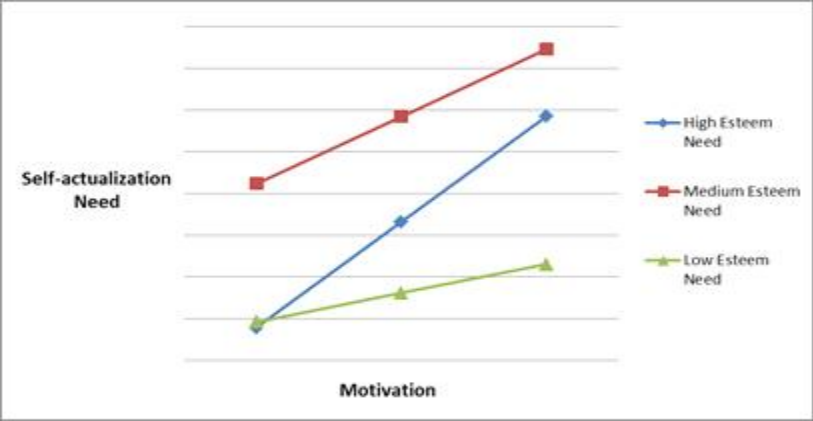


Figure 2 present the moderating effect of esteem need satisfaction on the relation between self-actualization need satisfaction and motivation. The regression coefficient for high degree of esteem need satisfaction was .25 and was significant at .01 ($t=31.341$). When the degree of esteem need satisfaction was medium, the coefficient was .16 and significant ($t=23.618$). When the degree of esteem need satisfaction was low, the coefficient was .07 and significant ($t=9.210$). This result indicates that motivational effect of self-actualization need satisfaction increases as individual's esteem need satisfaction level increases.

Figure 3. Moderator Effects of Relationship Need Satisfaction

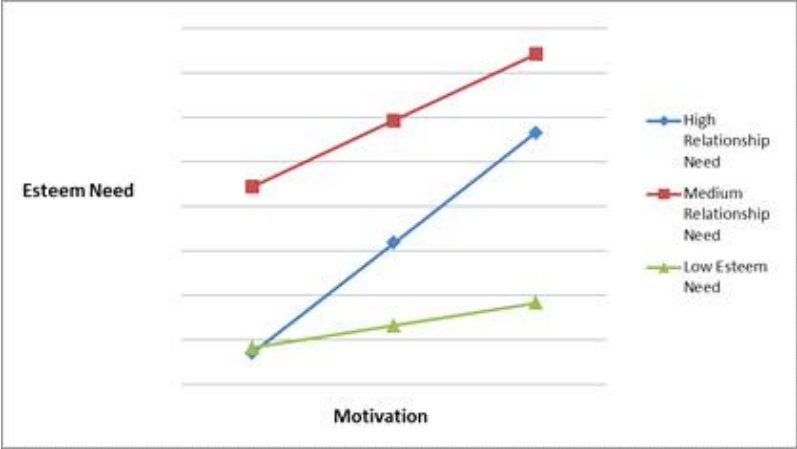


Figure 3 presents the moderating effect of relationship need satisfaction on the relation between esteem need satisfaction and motivation. The regression coefficient for high degree of relationship need satisfaction was .25 and was significant at .01 ($t=29.929$). When the degree of relationship need satisfaction was medium, the coefficient was .15 and significant ($t=20.451$). When the degree of relationship need satisfaction was low, the coefficient was .05 and significant ($t=6.197$). This result indicates that motivational effect of esteem need satisfaction increases as individual's relationship need satisfaction level increases.

Figure 4. Moderator Effects of Physiological Need Satisfaction

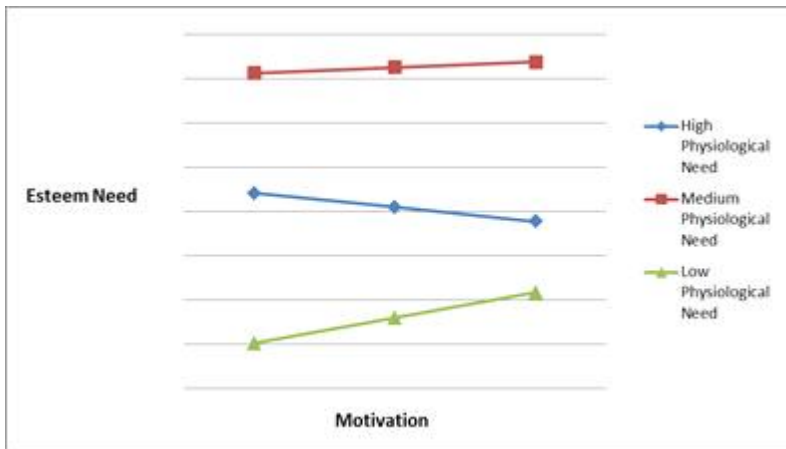


Figure 4 presents the moderating effect of physiological need satisfaction on the relation between esteem need satisfaction and motivation. The regression coefficient for high degree of physiological need satisfaction was -.02 and was not significant ($t=-2.410$). When the degree of physiological need satisfaction was medium, the coefficient was .01 and not significant ($t=1.360$). When the degree of physiological need satisfaction was low, the coefficient was .03 and significant ($t=4.849$). This result indicates that motivational effect of esteem need satisfaction decreases as individual's physiological need satisfaction level increases.

Figure 5. Moderator Effects of Physiological Need Satisfaction

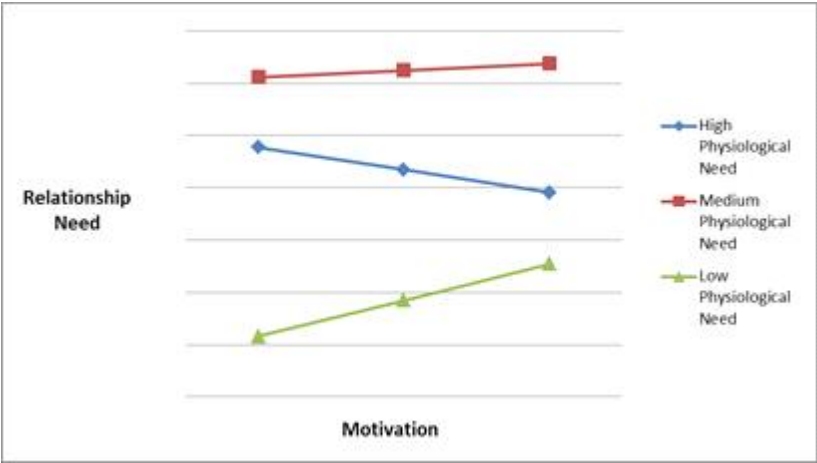


Figure 5 presents the moderating effect of physiological need satisfaction on the relation between relationship need satisfaction and motivation. The regression coefficient for high degree of physiological need satisfaction was $-.02$ and was significant ($t=-3.227$). When the degree of physiological need satisfaction was medium, the coefficient was $.01$ and not significant ($t=1.382$). When the degree of physiological need satisfaction was low, the coefficient was $.03$ and significant ($t=6.185$). This result indicates that motivational effect of relationship need satisfaction decreases as individual's physiological need satisfaction level increases.

V. Discussions

Public organizations today are implementing various human resource management policies and training programs for managers to satisfy diverse types of needs of their employees. However, there is little research investigating the effects of these policies and practices on employee motivation. The results of this study is meaningful for public managers who wants to motivate their employees by providing the knowledge on what types of need they need to aim to satisfy in order to enhance their employees' motivation.

Some noteworthy findings are listed as follows. First, satisfaction of physiological need (i.e., pay satisfaction) did not significantly increase employee's motivation. There are two possible explanations for this result. One is that, unlike private sector employees, public employees are more intrinsically motivated than extrinsically, as suggested in the literature on Public Service Motivation (Perry & Wise, 1990). The other explanation is that this result is consistent with the dual factor theory of motivation (Herzberg, Mausner, & Snyderman, 1959). Herzberg and his colleagues suggested that some conditions that are not related to the work itself such as pay may increase dissatisfaction when it is deficient, but satisfaction of these conditions does not increase motivation. Findings of extant research also support this idea. Many scholars (e.g., Lum et al., 1998; Currall et al., 2005) found that pay satisfaction significantly suppressed turnover intention, a major consequence of dissatisfaction, while a meta-analysis done by Williams, et al. (2006) revealed that the positive effect of pay satisfaction was weak.

Second, esteem need satisfaction has the strongest effect on motivation. This may reflect the fact that, in a military culture in which authoritative top-down decision making is a norm, the effects of empowerment and participation were more significant than in an organizational culture in which participatory decision-making is more general. Maslow proposed that the need that is deprived or deficient becomes the strongest drive for behavior and hence the most important need for motivation. In the authoritative organizational culture of military organizations, the need for empowerment is likely to be deprived, and thus, become most important need for motivation. For similar reason, safety need satisfaction, need at the second lowest level, has a stronger effect on motivation, than relationship need satisfaction. Since work environment for military personnel involve high-risk of mortality and injury, this need for safety is likely to be the most important need that they desire to satisfy. These results suggest that in order to promote motivation, leaders of military organization need to pay attention to encouraging employee participation when making decision, and to the policies protecting employees from safety hazards or from abuse of authority.

Third, the test of the gratification/activation proposition received partial supports. The relation between self-actualization need satisfaction on motivation was moderated by the degree of relationship need satisfaction and esteem need satisfaction, and the effect of esteem need satisfaction on motivation was moderated by the extent to which one is satisfied with regard to relationship need. These results provide partial support for the proposition that the motivational strength of higher level need satisfaction depends on the extent to which one is satisfied with regard to the need at a lower level. These results suggest that the HR practices aiming to satisfy esteem needs, relationship needs, and self-actualization needs are most effective when they are used together. In other words, the motivational effect of training and employee development programs are maximized when the leaders of the military organizations ensure that employees have positive relationship among colleagues and supervisor and that they are able to make voices when making decision that are related to themselves.

Fourth, with regard to physiological need (i.e., pay) satisfaction, the moderator effects were negative as shown in figure 4 and 5. This indicates that, as for those who are highly satisfied with their pay, the effects of esteem need satisfaction and relationship need satisfaction on motivation were minimal. In addition, those who are dissatisfied with pay are better motivated when they are given the opportunities to participate to decision-making (i.e., esteem need) or to have trusting relationship with coworkers than those who are satisfied with their pay. This is an interesting finding since it provides an evidence for the opposite of Maslow's proposition. One possible interpretation of this negative moderating effect is that the pay satisfaction has a "crowding out" effect. In other words, although pay satisfaction does not directly influence motivation as shown in our main effect results, the degree to which one is satisfied with pay undermines the effects of higher level needs (i.e., esteem needs and relationship needs) on motivation. This may be because those who are highly satisfied with pay less seek to satisfy higher level needs than those dissatisfied with pay. To the contrary, people who are dissatisfied with their pay seek to satisfy their other needs in order to compensate for their low satisfaction

with pay. This result implies that managers need to provide those of low pay grade with more opportunities to participate and to have a good relationship with coworkers to compensate for their dissatisfaction with pay.

In sum, the purposes of organizational policies and human resource management techniques are to maintain employee motivation and morale by fulfilling their needs. The results of this study showed that most of needs satisfaction, except with regard to physiological need, are significantly related to motivation. This result indicates that these policies and management techniques satisfying employee's needs are generally important for motivating them to work better. Furthermore, the results of moderator effects indicates that the HR practices aiming to satisfy esteem needs, relationship needs, and self-actualization needs are most effective when they are used together, with the exception of physiological need satisfaction. Admittedly, since the sample used in this study is constrained to the three military departments within the U.S. federal government, further studies is needed to examine the motivational effects of diverse types of needs in diverse agencies and other types of public organizations.

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