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THE RELATIONSHIP BETWEEN COMPANY LEADERSHIP CLIMATE AND OBJECTIVE MEASURES OF PERSONNEL READINESS (U)

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Many military leadership studies have related subordinates' perceptions of leader behavior to subjective (i.e., paper and pencil) measures of subordinate satisfaction and/or group effectiveness e.g., Halpin, 1954 (1); Reaser, Vaughan, and Kriner, 1974 (2); Bleda, Gitter, and D'Agostino, 1977 (3); O'Reilly and Roberts, 1978 (4). However, few studies have assessed the relationship between subordinates' perceptions of military leader behavior and objective measures of group effectiveness such as unit disciplinary rates, e.g., Affourtit, 1977 (5); Omara, In Press (6).

Also, only one level of leadership is often the focus of military leadership studies, such as Lange, 1960 (7); Olmstead, Christie, and Jacobs, 1975 (8), while research suggests that different leadership behavior may be required at different levels; e.g., Nealy and Blood, 1968 (9).

→ The purpose of the present research is to examine the relationship between perceptions of company leadership climate (by both leaders and lower enlisted) and objective measures of personnel readiness. However, before such a relationship can be explored, an instrument for examining overall company leadership climate must be constructed. Therefore, a secondary purpose of the research was to construct a valid measure of company leadership climate for both leaders and lower enlisted.

Method

Subjects

Subjects were 237 leaders (team leaders, squad leaders, platoon sergeants and platoon leaders) and 513 lower ranking enlisted (E1 to E4 in nonleadership positions) in a USAREUR infantry brigade. Most soldiers had spent about 12 months in the brigade. Sixty percent were in line units and 20% each were from combat support and headquarters units.

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Instruments

Construction of the company leadership climate instruments began with interviews using lower enlisted and leaders concerning what constitutes effective leadership at company level and below. A draft instrument based on these interviews was pilot tested via administration to a sample of 75 leaders and 150 lower ranking enlisted. Items which were answered substantially the same by soldiers from all five companies (and thus were low in between unit variance) were eliminated. Remaining items were revised, reorganized and administered to a small sample of soldiers to ensure appropriate reading level. Final instruments contained 108 items and 67 items for leader and lower enlisted surveys, respectively. Each item was answered on a one to five scale. A typical item was "How fairly are small punishments, such as extra duty, given out in your company?"

Objective measures of personnel readiness (described in Appendix A) were collected from battalion records kept in the Personnel and Administration Center (PAC) for a six month period immediately preceding the survey. The number of occurrences of each measure was divided by unit strength figures to give ratios of occurrences in the past six months per number of soldiers for each of the 15 companies surveyed.

Procedure

Surveys were administered to the 15 companies over a period of about four months. However, each unit took the survey during an identical part of their activity cycle to minimize differences in responses due to differences in recent missions. Surveys were administered to personnel during regular duty hours. An hour block was allotted but average administration time was about thirty minutes plus ten minutes for instruction. Eleven of the 15 companies were surveyed separately. Leaders and lower enlisted were always surveyed separately. Subjects were assured that responses would be reported in group form only and that the results would not serve as an official evaluation of the unit in general or any person in particular.

Results

Internal Validity

Factor analyses of the leader and lower enlisted instruments yielded four scales for leaders and seven for lower enlisted members (details are given in Appendix B). Resulting scales for leaders and lower enlisted are reported below.



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Leader data: The leader structure scale had a Cronbach alpha¹ of .92 and contained 15 items measuring leaders' ability as trainers, effectiveness in maintaining standards among soldiers, agreement over use of punishment and supervision of subordinates.

The company level concern scale contained seven items (Cronbach alpha of .85) measuring the company commander's understanding of leaders' duties in training, troop handling and garrison tasks, as well as the fairness of punishment administered in the company and company leaders' (e.g., company commander or first sergeant) effectiveness in maintaining good morale, rewarding good performance, and showing concern.

The planning of training scale (Cronbach alpha of .80) contained eight items relating to the degree of involvement of various levels of leadership in planning training, the frequency with which training meetings are held, the reliability of the training schedule and the degree of realism in training.

The feedback scale (Cronbach alpha of .83) contained six items measuring leaders' agreement with use of both positive feedback mechanisms need as rewards and neutral to negative feedback mechanisms, such as inspections and counseling.

Intercorrelations between scale scores ranged from .52 to .65 with a median of .60, suggesting that, on average, scales shared about 36% of their variance.

Lower enlisted data: The squad level concern scale (Cronbach alpha of .89) contained eight items measuring the extent to which team and squad leaders helped soldiers in job-related areas and personal matters, maintained morale and showed concern.

The rewards scale (Cronbach alpha of .86) contained six items which tapped the extent to which soldiers agreed with the frequency of rewards such as awards, time off and promotion.

The training satisfaction scale (Cronbach alpha of .86) contained three items related to soldiers' satisfaction with time training as a squad, platoon and company.

¹Cronbach alpha is a measure of the extent to which scale items tend to measure the same vs different concepts. It ranges from 0 to + 1, with scores over .60 generally accepted as showing reasonable scale internal validity.

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The platoon level concern scale (Cronbach alpha of .90) consisted of nine items measuring the extent to which platoon sergeants and platoon leaders helped soldiers in job related and personal matters, maintained morale, rewarded good performance and showed concern.

The fairness and concern scale (Cronbach alpha of .88) contained ten items of a wider variety than other scales. Items on this scale measured fairness of rewards and punishments, the extent to which various leaders maintained morale, treated soldiers with respect, showed concern, were available to give job related help and evaluated job progress. This scale seemed to overlap squad level and platoon level concern to some extents.

The training instruction scale (Cronbach alpha of .80) contained five items measuring the extent to which leaders are enthusiastic about training, can answer questions on training, critique training and set the example.

The company level concern scale (Cronbach alpha of .80) contained three items relating to how helpful the company commander and first sergeant were in personal matters.

Intercorrelations between the scales ranged from .19 to .72 with a median of about .40, suggesting that an average scales had about 16% variance in common.

External Validity

For each objective measure, mean scale scores of soldiers from units above vs below the median on the objective measure were compared by t-tests. Results of these tests are discussed below, first for leader data then for lower enlisted data.

Leader data: The relationship personnel readiness measures and scale scores for leader data are summarized in Figure 1. This figure reveals that for all four scales, higher leadership ratings are related to relatively higher rates of IG complaints and field grade Article 15s. For all but the planning of training scale, higher leadership ratings are also related to lower sick call rates. Serious incident reports and requests for transfer show a mixed pattern. Higher scores on leader structure relate to higher rates of serious incident reports/requests for transfer, while higher scores on planning of training relate to lower rates of serious incident reports/requests for transfer. Concerning awards, leaders' ratings of company level concern are higher in units above the median in rates of certificates of achievement.

Lower enlisted data: The relationship between personnel readiness measures and scale scores for lower enlisted are summarized in Figure 2. Squad level concern, fairness and concern and training instruction all

	Action Line Complaints		IG Complaints		Company Grade Article 15s		Field Grade Article 15s		Total Article 15s		MSMs	ARCOMs	COAs	Total Awards	Sick Calls	SIBs	Requests for Transfer
Leader Structure			+				+		+						-	+	+
Company Level Concern			+				+						+		-		
Planning of Training			+		+		+		+								-
Feedback			+				+								-		

NOTE: + = scale mean of units above median on criterion measure is greater than ($p < .05$) scale mean of units below median on criterion measure.

- = scale mean of units above median on criterion measure is less than ($p < .05$) scale mean of units below median on criterion measure.

Figure 1

RELATIONSHIP BETWEEN CRITERION MEASURES AND

SCALE SCORES: LEADER DATA

Action Line	Complaints	IG Complaints	Company Grade Article		Total Article 15s	MSMs	ARCOMs	COAs	Total Awards	Sick Calls	SIRs	Requests for Transfer
			15s	15s								
Squad Level Concern	+	+	+	+	+					-		
Rewards		+								-		
Training Satisfaction									+			
Platoon Level Concern		+								-		
Fairness and Concern		+	+	+	+					-		
Training Instruction		+	+	+						-		
Company Level Concern	-					+	+		+			

NOTE: + = mean of units above median on measure greater ($p < .05$) than mean of units below median on measure.
 - = mean of units below median on measure greater ($p < .05$) than mean of units above median on measure.

Figure 2
 RELATIONSHIP BETWEEN CRITERION MEASURES AND
 SCALE SCORES: TROOP DATA

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show a similar pattern. Higher ratings on these scales relate to higher rates of IG complaints, field grade Article 15s and total Article 15s as well as lower rates of sick calls. Concerning awards, soldiers' ratings of training satisfaction are higher in units earning relatively more total awards, and soldiers' rating of company level concern are higher in units earning relatively more meritorious service medals, army commendation medals and total awards. Higher ratings of company level concern also relate to lower rates of action line complaints and lower sick call rates.

Discussion

Concerning the first purpose of this research, the relationship between leadership climate and measures of personnel readiness, there appear to be consistent relationships between climate and readiness for both leaders and lower enlisted members. For both groups, more positive perceptions on a wide variety of leadership skills are associated with a relatively higher level of complaints, punishments and awards, as well as lower levels of sick calls. While these results may seem surprising at first, when one considered the maximum ratio of complaints (less than 2% per person per month) and punishments (less than 5% per person per month) it appears that good leadership is associated with moderate levels of complaints and punishments. This presents a picture of the effective leader as active leader, responding to subordinates' behavior appropriately, whether good or bad. Punishing those few who disrupt unit effectiveness rather than ignoring such behavior may earn the wrath of those few soldiers who do not want firm leadership (as evidenced by the relatively high complaint rate), but it satisfies the majority of soldiers as reflected by higher leadership ratings and lower levels of sick calls (absenteeism) a traditional measure of job satisfaction in the civilian literature.

Concerning the second purpose of this research, the documentation of perceptions of overall unit leadership climate, results appear promising. Leaders seem to define leadership climate in terms of leader structure, company level concern, planning of training and feedback. Also, lower enlisted members define leadership climate in terms of how well various levels fulfill their role responsibilities, as seen by soldiers (e.g., squad level concern, platoon level concern, company level concern), how well training is done (e.g., training satisfaction, training instruction) and use of rewards plus general fairness and concern of the overall leadership structure. Also, these scales all appear to be internally valid and each measure discrete aspects of company leadership climate.

In summary, two main conclusions can be drawn from this research. First, the effective leader may be more than a "nice guy" (person). The effective leader appears to be active, both punishing and rewarding behavior appropriately, and irritating a few people by doing so. A second

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conclusion logically following from this is that the traditional interpretation of official complaints and Article 15s as indicators of poor morale or discipline may not be correct. There may well be a curvilinear relationship between such measures and unit climate, with very low levels reflecting a "milquetoast" and very high levels reflecting a "martinet."

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Appendix A: Objective Performance Measures

Action Line Complaints

A type of local complaint whereby soldiers could directly call a number at brigade headquarters. The complaint was then given to their company commander, who had 24 hours to reply in writing to the brigade commander.

IG Complaints

Complaints filed with the inspector general (IG).

Company Grade Article 15s

A form of nonjudicial punishment (could be fines, confinement to quarters, etc.) given by the company commander.

Field Grade Article 15s

Similar to the company grade Article 15, but given by battalion commander. Maximum punishments are substantially larger.

Total Article 15s

Sum of company and field grade Article 15s.

MSMs

Meritorious Service Medals: A formal peacetime award given to service members to reward outstanding service over a period of time or an outstanding single achievement.

ARCOMs

Army Commendation Medal: A formal war or peacetime award given to reward service over a period of time or short term achievement. It is a lesser award than the MSM.

COAs

Certificates of Achievement: Informal recognition given generally to reward a single outstanding achievement (e.g., SQT score of 90 or over). Is a lesser reward (i.e., not an award) than the two above, but can be worth promotion points to lower enlisted.

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Total Awards

Sum of above three.

Sick Calls

Total incidents of people going on sick call (e.g., if one person sent on sick call on three different days, that represented three incidents of sick call).

SIRs

Serious Incident Reports: Military Police arrests for serious offenses (e.g., rape, robbery, etc.).

Requests for Transfer

Formal written requests for transfer submitted through the chain of command.

Appendix B: Creation of Scales for Leader and Lower Enlisted Data

Since these surveys were rather long, a method of reducing the number of items for further analysis was devised. Twelve t-tests (one for each objective measure) were performed. The difference in means between soldier units above vs below the median on each objective measure was calculated for each item. Items which showed statistically significant differences in means on at least two objective measures were selected for further analysis. With an alpha of .05, an item has a probability of .46 of relating to at least one of the twelve measures by chance but a probability of roughly .12 of relating to at least two measures just by chance. This method reduced the number of items in the leader survey to about 45% of the original total and reduced the troop survey to about 74% of the original total items.

Only about 69% of the leaders and 61% of the troops responded to all remaining items in their surveys. However, 92% of the leaders and 87% of the troops answered at least 90% of the remaining survey items. To gain more of the sample for factor analysis, the sample mean for a missing item was used to replace the missing data for subjects missing 1 to 5 items. This method does not substantially change the results of the factor analysis. All factor analyses used SPSS version seven (Norusis, Hull, Jenkins, Steinbrenner, & Bent, 1975 (10)).

Solutions

Leader data. Data for both leaders and lower enlisted were analyzed using a principal components analysis. The unrotated factor matrix (principal factoring with iteration) for leader data showed that the eigenvalue dropped below one after six factors. Thus, a six factor solution was generated using varimax rotation. However, examination of the factor loadings .40 or greater on each of the six rotated factors suggested that several factors seemed to overlap in content, while other items which were similar loaded on separate factors. Thus, a five factor solution was generated. This factor eliminated most, but not all, overlap between factors. A four factor solution appeared to be completely correct for factor analysis and gave the solution making the most intuitive sense. Percentage of total variance among items accounted for by each rotated factor was: structure (14%), company level concern (9%), planning of training and feedback (7%).

Scales scores for each factor were generated by adding together a subject's scores on all items loading .40 or greater on the factor.

Lower enlisted data. The initial unrotated factor matrix (principal factoring with iteration) showed that the eigenvalue dropped below one after the seventh factor. Thus, the seven factor solution was retained.

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for varimax rotation. This rotation seemed to make good intuitive sense, and thus no further analyses were explored. The percentage of total item variance accounted for by each rotated factor is as follows: squad level concern (8%), rewards (7%), training satisfaction (5%), platoon level concern (8%), fairness and concern (9%), training instruction (6%), and company level concern (6%).

Scale scores for each factor were again created by adding together a subject's scores on all items loading .40 or more on the factor.