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ABSTRACT

A descriptive study examined the relationship between supervisory techniques and organizational outcomes among supervisors in the agricultural extension service in eight districts in eastern Uganda. Self-rating and rater forms of the Multifactor Leadership Questionnaire were sent to 220 extension agents, 8 field supervisors, and 8 deputy field supervisors. Questionnaires were completed by 164 agents and all 8 district supervisors. A wide discrepancy appeared between the supervisors' and deputy supervisors' self-ratings and the extension agents' ratings of the supervisors' leadership. The supervisors tended to give themselves higher ratings than the extension agents gave them. The extension agents perceived their supervisors' use of transformational leadership as rudimentary. The supervisors used management by exception and laissez faire to a greater extent than they thought. Female supervisors excelled in the practice of transformational leadership, whereas male supervisors tended to be more transactional. The charismatic, intellectually stimulating, and inspiring leadership style gave rise to superior organizational outcomes. Among the 17 study recommendations were the following: Uganda's new and existing extension agents and supervisors should receive inservice training in leadership techniques; supervisors should be encouraged to hold frequent meetings with subordinates; and more regular internal transfers of supervisors should be encouraged. (MN)

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Summary of Research

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AN EVALUATION OF THE RELATIONSHIP BETWEEN SUPERVISORY TECHNIQUES AND ORGANIZATIONAL OUTCOMES AMONG THE SUPERVISORS IN THE AGRICULTURAL EXTENSION SERVICE IN THE EASTERN REGION DISTRICTS OF UGANDA

Paul Padde, Wesley E. Budke, and N. L. McCaslin

The Uganda, East African populace is mainly agricultural, characterized by small-holder mixed farming. The agricultural sector employs about 80 percent of the population, accounting for about 60 percent of the Gross Domestic Product, and for 90 percent of its export earnings. Therefore, the efficiency and effectiveness of the agricultural practices are of paramount importance to the survival of the Nation.

Improved quality of extension supervision is one target for bringing about increased agricultural production, and subsequently, improvement in the national economy. Supervision is vital to the success and impact of extension. A properly managed and supervised organization creates progress--it transforms its inputs into the satisfaction of human needs (Buford and Bedeian, 1988).

Need for the Study

A number of sources have observed that Uganda's agricultural extension service agents are unmotivated, demoralized, and are not performing to the expectations of the organization (World Bank, 1987; Hedges et al., 1988; & *Africa Research Bulletin*, 1988). Indeed, Uganda's Agricultural Extension Service is not effective (Uganda Ministry of Agriculture, 1989; & Hedges et al., 1988). Bucanayandi (1990) and USAID (1987) identified supervision as one of the weaknesses in Uganda's extension system.

Purpose and Objectives of the Study

The purpose of this study was to examine the supervision techniques practiced by Ugandan exten-

sion supervisors based upon their perceptions and the extension agents' (their supervisees) perceptions. The relationship between demographic variables and the extension agents' perception of supervisory styles of the supervisors was also explored. The specific objectives of the study were to:

1. Describe the personal characteristics of the extension supervisors, deputy supervisors, and extension agents in the Uganda Extension Service.
2. Determine the supervisory style (i.e., transformational, transactional, non-leadership) of the extension supervisors in Uganda.
3. Compare the perceptions of the agricultural extension field supervisors with those of the extension agents', their supervisees, regarding leadership for effective job motivation and performance.
4. Identify specific supervisory factors which affect the performance of the extension supervisors.
5. Determine what organizational outcomes (i.e., satisfaction with the leader, individual and group effectiveness, extra effort by followers) arise from the leadership style employed by the extension supervisors.
6. Determine if there were variations in leadership styles among the extension supervisors as indicated by the ratings by the extension agents.
7. Determine the relationships between the extension agents' personal characteristics and their ratings of their supervisors.

Methodology

The study was a descriptive survey designed to gather data regarding the leadership and supervisory

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techniques of the extension supervisors in Eastern Uganda, East Africa.

Population and Sampling

The population for the study were extension agents (220)¹, field supervisors (8), and deputy field supervisors (8) in the districts of Tororo, Mbale, Kapchorwa, Kumi, Soroti, Iganga, Jinja, and Kamuli in Eastern Uganda. A census of extension supervisors, deputy supervisors, and extension agents was taken from these districts. Frame error was controlled by obtaining a complete up-to-date list of all supervisors and extension agents in the eight districts.

Instrumentation

The instrument used to measure leadership behavior and effectiveness was the Multifactor Leadership Questionnaire (MLQ), developed by Bass and Avolio (1990) and published by the Consulting Psychologists Press, Palo Alto, California. The instrument has been used in over a dozen countries and in numerous settings. A panel of experts and a field test were used to ensure the MLQ was content and face valid. The panel of experts, composed of the researcher's dissertation committee members and an Assistant Commissioner in the Uganda Extension Service, recommended the omission of items 77 and 78 and addition of items in the demographic section. The field test was carried out with a representative sample of 13 extension agents, one supervisor, and one deputy supervisor in the Uganda Western Regional District of Kasese. All respondents reported that the MLQ was face and content valid, except for a few words and expressions that they did not understand, which were addressed by the researcher in the subsequent administrations of the instrument. There were two versions of the questionnaire: the self-rating form, in which the supervisor rated himself or herself as a supervisor, and the rater form, in which a supervisee (extension agent) rated the supervisor.

Data Collection

The data were collected from October through December 1992 by personal administration of the questionnaire by the researcher. The questionnaire was administered (hand delivered) on appointed days to the extension supervisors and extension agents in the selected districts by the researcher. Questionnaires were completed during the meeting. Due to a high absentee rate of extension agents, the researcher returned to each of the eight district offices numerous times to administer the questionnaire.

Analysis of Data

The analysis of data included descriptive statistics to summarize and organize the data. Measures

of association were used to determine the linear relationship between the supervisory style and supervisors effectiveness and organizational outcomes. Analysis of variance, and t-tests were used to test for differences existing between supervisory style and effectiveness among the respondents by age, academic qualification, numbers of inservice courses, and length of service in the Uganda Extension Service.

Findings

Characteristics of Respondents

The respondent characteristics studied were gender, age, education, number of years in the service, number of courses taken in leadership, number of offices held since joining the Ministry, years in the position of supervisor, and the number of meetings convened by the leader in the last year. Of the 164 extension agents responding, 87.8 percent were male. The gender of the supervisors was balanced, 50 percent male and 50 percent female; however, 87.5 percent of the deputy supervisors were male and only 12.5 percent were female. The mean age was 39.9 years for the supervisors, 36.1 years for the deputy supervisors, and 39.9 years for the extension agents.

Twenty-five percent of the supervisors had master's degrees and 75 percent held bachelor's degrees. Of the extension agents, 3.1 percent held master's degrees, while 12.8 percent held bachelor's degrees, and the majority (84.1%) had a general agriculture diploma. Of the deputy supervisors, 37.5 percent held a bachelor's degree and an equal number had a diploma in general agriculture. The majority (87.5%) of extension agents had, agricultural sciences as their major area of study, while 12.5 percent held their highest qualification in other fields, such as economics. All of the supervisors and deputy supervisors had agriculture as their primary education background.

The average number of years that the extension agents were employed in agricultural extension was 16.8 years, and 50 percent of the supervisors had worked in the Ministry for 11-15 years, but only three years as a supervisor. About two-thirds of the deputy supervisors had one to three years of experience in their current positions. Over one-third of the supervisors had not attended a workshop in leadership during the last two years and 50 percent of the supervisors had not convened a staff meeting in the last year.

Leadership Styles of the Extension Supervisors

The leadership styles of the supervisors were divided into three categories with seven leadership factors imbedded within the categories: transforma-

Leadership Factors Inhibiting the Supervisors' Performance

The leaders displayed transformational leadership behaviors, somewhere between "sometimes" and "fairly often". This group of leaders would be described as only slightly inspiring, intellectually stimulating, individually considerate, or charismatic. The overall group is skewed towards the lower part of the scale range on almost all transformational and transactional leadership items.

The leadership factor scores on transactional leadership depict individuals who do not effectively execute the basic process of exchanges of reward for high performance, which characterizes active transactional leadership. As a group, they tend towards corrective action rather than constructive exchanges. Although supervisors' self ratings are higher than the rating by supervisees, both scores are relatively low.

Organizational (Performance) Outcomes Resulting from the Different Leadership Styles

In Table 2, norms or averages are presented for each organizational outcome: "amount of extra effort," "relations to higher-ups," "unit effectiveness," "job effectiveness," "organizational effectiveness," and "satisfaction." The general pattern of ratings produced by extension agents depicts supervisors who are not very effective across the respective outcome (performance) factors. Scores produced by subordinates ranged from 2.1 to 2.8, with the majority being at or below 2.2 which is on the low side. Shifting all ratings to above 3.0 would be the reasonable target goal for effective leaders. The tendency for the leaders to see themselves as more effective than do their subordinates (as evidenced by their ratings) might be cause for concern. The overall satisfaction rating for this group of leaders (mean = 2.8) demonstrates that subordinates' general feelings about their leaders were not all positive.

Table 3 displays the product-moment correlation between each leadership factor and each outcome (performance) measure for the supervisors, the correlations are produced using supervisee ratings. For this organization, transformational leadership, to the extent that it exists among these leaders, is positively related to each of the six outcome measures. "Contingent reward" leadership is also positively related to the outcome measures, although to a lesser degree.

Differences Among the District Extension Supervisors

ANOVA was used to determine if there were differences among the extension supervisors as rated by the extension agents. Significant differences were

found in the extension agents' ratings of the supervisors on all leadership factors, except "management-by-exception."

The leaders who were the most charismatic, inspiring, and intellectually stimulating, in relative terms, were female. Age did not seem to be related to the MLQ scores. The leaders with higher educational qualifications (master's) seemed to score higher on the transformational leadership scores.

Relationship Between Extension Agents' Perception and Their Demographic Characteristics

Pearson product-moment correlation coefficients were calculated to describe the relationship between the extension agents' perceptions of the outcome factors: "amount of extra effort," "relations to higher-ups," "unit effectiveness," "job effectiveness," "organizational effectiveness," and "satisfaction with the supervisors;" and the extension agents' age, length of service in the agricultural ministry, number of inservice courses they attended, number of meetings they attended, and the length of service under current supervisor. Kendall's Tau C coefficients were calculated to describe relationships between outcome factors and the extension agents' highest level of formal education. Point biserial correlation coefficients were calculated to describe the relationships between the outcome factors and the extension agents' gender and marital status. Measures of relationships were not reported for the supervisors and deputy supervisors since there were only eight of each, hence, too few respondents in these categories. See Table 4.

The females tended to exert more effort and were more satisfied with their leaders; except they were perceived as having poorer relationships with higher authorities than their male counterparts. The relationships between age and perception were positive, but negligible for relations to "higher-ups," "unit effectiveness," and "job effectiveness," but negative and negligible for the "amount of extra effort."

The relationship between marital status and extension agents' perception of outcome factors was generally positive and ranged from "negligible" to "low". The relationship between duration of service and extension agents' perception of outcome factors ranged from negligible to low. The longer the extension agents tenure, the less extra effort they exerted, and the less satisfied they tended to be with their leaders.

The more courses the extension agent had attended, the more critical they seem to be of their supervisors' capability in organizational effectiveness. The strength of the relationship between extension agents' perception of outcome factors and

their frequency of meetings with their supervisors were all positive and moderate. The more meetings, the closer the perceptions of the extension agents are to those of their supervisors. The more the extension agents had served under a given supervisor, the lower they appeared to have rated him or her on outcome factors; also, the less satisfied they were with the leaders; and the less extra effort they tended to exert.

Conclusions

The review of literature and the findings of this study support the following conclusions:

1. A large discrepancy existed between how the supervisors believe they lead and how they are perceived to lead by the extension agents.
2. The extension agents' perceived their supervisors' use of transformational leadership as rudimentary.
3. Supervisors used management-by-exception and laissez-faire to a greater extent (mean score = 1.2) than they thought. They should work towards reducing the rating to below 1.0 (Bass and Avolio, 1990).
4. Female supervisors excelled in the practice of transformational leadership. Male supervisors tended to be more transactional.
5. The educational qualification affected the choice of leadership style. Supervisors who held higher educational qualifications tended to use more inspirational, charismatic, intellectually stimulating, and individually considerate styles than those who tended to use transactional methods.
6. The married extension agents tended to exert less extra effort, but tended to be more satisfied with their supervisors. They rated their supervisors higher on relations to "higher-ups," "unit effectiveness," and "job effectiveness."
7. Laissez-faire leaders generated less outcomes for the organization and also less satisfaction from subordinates.
8. The correlation between leadership styles and organizational (performance outcomes) indicated that the charismatic, intellectually stimulating, and inspiring leadership style gave rise to superior outcomes for the organization.

Table 2

SUPERVISORS' MEAN SELF-RATINGS AND THE EXTENSION AGENTS' MEAN RATINGS OF THE SUPERVISORS ON ORGANIZATIONAL (PERFORMANCE) OUTCOMES

	Respondent	Mean Score	S-R
<i>Outcomes for the Organization</i>			
Amount of Extra Effort ^a	S	3.1	0.9
	R	2.2	
Relations to Higher-ups ^b	S	2.8	0.4
	R	2.4	
Unit Effectiveness ^b	S	2.4	0.3
	R	2.1	
Job Effectiveness ^b	S	2.6	0.4
	R	2.2	
Satisfaction with the Leader ^c	S	3.3	0.5
	R	2.8	
Key: S = All self-ratings by the population of district supervisors (n = 8) R = All extension agents' ratings of the supervisors (n = 164)			
^a Amount of Extra Effort	^b Relations to Higher-ups and Effectiveness		^c Satisfaction
0 = Not at all	0 = Not effective		0 = Very dissatisfied
1 = Once in a while	1 = Only slightly effective		1 = Somewhat dissatisfied
2 = Sometimes	2 = Effective		2 = Neither satisfied nor dissatisfied
3 = Fairly often	3 = Very effective		3 = Fairly satisfied
4 = Frequently, if not always	4 = Extremely effective		4 = Very satisfied

Recommendations

Recommendations for both the supervisors and administrators in the Uganda Agricultural Extension Service and for further study are:

Recommendations for the Agricultural Extension Service

1. Multifactor Leadership Questionnaire scores should be used to help identify candidates for training programs, promotions, and transfers to leadership positions.
2. The extension administrators and trainers should include sessions on leadership techniques and skills into their routine inservice programs, with specific attention to the transformational leadership approach.
3. District extension supervisors should examine their leadership style and adjust their leadership behavior so as to meet the needs and obligations of their jobs and subordinates.
4. All new extension supervisors and deputy supervisors should participate in an orientation session that includes leadership skill training.
5. An annual short national seminar or conference on leadership, management, and human relations should be organized by the extension service and held at a central location.
6. Leadership and management courses should be included as a major component of the university level program in extension and adult education.
7. District supervisors should be appraised annu-

Outcomes for the Organization						
Leadership Factor	Amount Extra Effort	Relations to Higher-ups	Unit Effectiveness	Job Effectiveness	Organizational Effectiveness	Satisfaction
<i>Transformational Leadership</i>						
Charismatic	0.70**	0.63**	0.59**	0.62**	0.64**	0.79**
Inspirational	0.72**	0.55**	0.52**	0.56**	0.57**	0.70**
Intellectual Stimulating	0.69**	0.59**	0.56**	0.63**	0.58**	0.66**
Individual Consideration	0.71**	0.59**	0.56**	0.63**	0.56**	0.76**
<i>Transactional Leadership</i>						
Contingent Reward	0.60**	0.50**	0.49**	0.55**	0.53**	0.62**
Management by Exception	0.22*	0.05	0.22	0.06	0.11	0.12
<i>Non-leadership</i>						
Laissez-Faire	-0.45**	-0.43**	-0.44**	-0.50**	-0.47**	-0.64*
Note:	* p < .05					
	** p < .01					
This table shows the correlation of leadership factors scores with outcomes for the organization assigned by the all raters (extension agents) to all the eight field supervisors in the sample						
Correlations range between:						
<p style="text-align: center;">-1.00 —————> 0.00 —————> 1.00</p> <p style="text-align: center;">A perfect negative Relationship No Relationship A perfect positive Relationship</p>						

- ally to determine their compliance with minimum standards of performance and general worthiness and provide feedback needed for improvements and general administrative decisions at the higher level.
8. A systematic human resource/manpower development program should be started or developed to upgrade the educational qualifications of district supervisors, preferably to a M.S. degree level.
9. More females should be appointed to leadership positions.
10. Supervisors should be encouraged by the administration to hold frequent meetings, e.g., monthly, with subordinates, to enhance interaction and participative management.
11. More regular internal transfers of supervisors should be encouraged to avoid extension personnel from getting bogged down by a supervisor who overstays in one duty station, building an empire and losing focus.

Table 4

RELATIONSHIPS BETWEEN THE EXTENSION AGENTS' DEMOGRAPHIC CHARACTERISTICS AND THEIR PERCEPTIONS OF THE SUPERVISOR'S EFFECTIVENESS AND THEIR OWN PERFORMANCE

Outcomes for the Organization						
	Amount of Extra Effort	Relations to Higher-Ups	Unit Effectiveness	Job Effectiveness	Organizational Effectiveness	Satisfaction
Demographic Characteristics						
Gender ^a	.05 (.56)	-.05 (.54)	.06 (.46)	.01 (.09)	-.05 (.054)	.02 (.81)
Age	-.09 (.24)	.04 (.62)	.07 (.38)	.00 (.96)	-.09 (.23)	-.03 (.66)
Marital Status ^b	-.03 (.73)	.03 (.71)	.07 (.35)	.11 (.17)	-.01 (.95)	.06 (.46)
Length of Service in Ministry	-.05 (.49)	.06 (.45)	.04 (.63)	.02 (.79)	-.10 (.21)	-.03 (.74)
Highest Qualification ^c	.00 (.96)	.01 (.85)	.05 (.49)	.04 (.61)	.08 (.29)	-.02 (.75)
Number of Courses Attended	.17* (.04)	.03 (.72)	.07 (.41)	.07 (.44)	-.01 (.95)	.12 (.16)
Number of Meetings Attended	.37* (.00)	.23* (.01)	.35* (.00)	.46* (.00)	.32* (.00)	.47* (.00)
Length of Service Under Current Supervision	-.23* (.00)	-.23* (.00)	-.28* (.00)	-.27* (.00)	-.25* (.00)	-.38* (.00)

^aGender is coded as: 1 = Male; 2 = Female

^bMarital Status is coded as: 1 = Married; 2 = Not married category

Coefficients reported are point biserial correlation coefficients

^cCoefficients reported as Kendall's Tau C Correlation Coefficients

Rest of coefficients reported as Pearson Product Moment Correlation Coefficients

* p < .05

Recommendations for Further Study

1. This study should be replicated in the other 30 districts of the Uganda Extension Service with a larger number of supervisors in order to make it a national study.
2. It is recommended that a qualitative component be incorporated into future studies to provide additional insight into the relationships.
3. It is recommended that this study be replicated using the top extension administrators in the Headquarters (Entebbe) and the Assistant Commissioner of Agriculture as the supervisors and their assistants and district supervisors respectively as subordinates.
4. Replicate the study with other specialized project leaders in extension.
5. It is recommended that the administrators in the headquarters rate each other using the MLQ instrument.
6. Further investigations into the influence of age, marital status, sex, and length of service in the leadership position on preferred leadership style would provide additional criteria that might be used to select transformational leaders.

¹One hundred sixty four extension agents participated in the study.

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SUMMARY OF RESEARCH SERIES

It is a basic point of departure for agricultural extension supervisors to understand how their leadership style impacts on their own performance and subsequently, their subordinates' performance. This study reports research that examines the supervision techniques practiced by Ugandan extension supervisors based upon their perceptions and the extension agents' (their supervisees) perceptions. The relationship between demographic variables and the extension agents' perception of supervisory styles of the supervisors was also explored. It should be of interest to extension managers worldwide.

This summary is based on a dissertation by Paul Padde under the direction of Wesley E. Budke and N. L. McCaslin. Paul Padde was a graduate student in the Department of Agricultural Education at The Ohio State University. Drs. Wesley E. Budke and N. L. McCaslin are Associate Professors in the Department of Agricultural Education, The Ohio State University and Paul Padde is in the Ministry of Agriculture, Animal Industry, and Fisheries, Entebbe, Uganda, East Africa. Special appreciation is due to Michael E. Newman, Mississippi State University and John D. Rohrer, The Ohio State University for their critical review of the manuscript prior to publication.

Research has been an important function of the Department of Agricultural Education since it was established in 1917. Research conducted by the Department has generally been in the form of graduate theses, staff studies, and funded research. It is the purpose of this series to make useful knowledge from such research available to practitioners in the profession. Individuals desiring additional information on this topic should examine the references cited.

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