MANAGERIAL ABILITY AND FARMING SUCCESS : AN ANALYSIS OF SMALL FARMERS AT THE MAKATINI SCHEME

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ABSTRACT

Most conventional analyses of farmers' managerial ability follow the work of Burger (1971). This research and analysis drew from the field of Industrial Psychology to determine and test the effects of managerial ability on farming success. A sample of small farmers producing cotton at Makatini in Northern KwaZulu-Natal was used. The main objective of the research was to develop a model of competence for potential use as criterion for selection and training of small farmers. Six important competence clusters were identified. The approach used in this research has shown that it can be used successfully to identify at least part of the dimensions which in a particular community or area will be associated with farming success. This approach is however considered ponderous, which agitates against its use as a guide for the selection of new farmers to be settled for financing.

1. INTRODUCTION

The relationship between managerial ability and farming success has been recognised ever since the emergence of Agricultural Economics and Farm Management as academic disciplines (Taylor & Taylor, 1952). This relationship should be borne in mind when efforts are made to settle new farmers on land, as is the case with some efforts and projects of the Department of Land Affairs. It is important that new farmers settled on land farm successfully and become financially independent. If this is not achieved, a land settlement policy will inevitably be a source of poverty, hardship and the waste of capital and of human dignity.

There are various conditions that have to be fulfilled to successfully settle new farmers – each condition being necessary, but none being sufficient on its own in the absence of the others: sufficient land of adequate quality, access to capital and sound financial structure within farmers' business, market access, access to inputs, marketing and production information, the necessary

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infrastructure and a favourable agri-milieu. To this has to be added managerial ability on the side of newly settled farmers.

Managerial ability is not directly measurable, and its effect on success not always readily predictable. This article reports on one approach that can potentially be used to measure ability and to predict, on the basis of observed personal characteristics, the likelihood of a new emerging farmer to be successful.

2. NATURE OF MANAGEMENT AND ITS MEASUREMENT

Many authors have described management as a process or series of actions taken by managers. Some have described the process in terms of four functions, *viz.* planning, organising, motivating (leading) and control (e.g. Newman, Summer & Warren 1967; Kazmier, 1969 and Hodgets, 1979). A similar classification comprises planning, implementation and control (Boehlje & Eidman, 1984), while management has also been described in terms of the actions of observation, analysis, decision-making, action-taking and responsibility bearing (Johnson, 1957).

It was early recognised that people, who perform these functions well, exhibit certain characteristics. Taylor (1925) mentioned the following qualities: health and strength; skill in a variety of tasks; work habit; clear vision; good judgement; knowledge; self control; ability to concentrate on the job, to work to a schedule, to control men and to co-operate with neighbours; interest in work; honesty; courage; patience. In a somewhat similar vein, Couture (1979) mentions the following qualities as those often found in successful farmers: pride in the farm, work and lifestyle; ambition; sound business judgement; good planning; possession of technical know-how; ability to think things through; a flair for opportune investment; wise use of money; initiative, managerial ability and strong entrepreneurial instinct; ability to handle fluctuating conditions. To these qualities, one should add responsibility in that the farmer has to conserve natural resources (Burger & Groenewald, 1971) and clearly also good human relationships.

Based largely on the above considerations, Burger (1971) constructed a scale of managerial aptitude, in which farmers were scored on six attributes: future image; record keeping; office; budgeting; maintenance tasks; and the organisation and control of labour. A farmer could obtain a score of between 5 and 30 on this scale, which was successfully tested for internal consistency (Burger, 1971). Using a sample of 700 commercial farmers in the Upper Orange catchment area, this scale was shown to have highly significant

(P = 0.01) positive correlations with a few indicators such as financial success, turnover, economic vitality, conservation concern and socio-economic standing (Burger, 1971). In a subsequent study of commercial farmers in some areas in the Letaba region of the Lowveld, Jansen, Swanepoel & Groenewald, (1972) found this index to have positive marginal returns and to be associated with financial success. Similar conclusions were later obtained at Vaalharts (Callow, Van Zyl, Sartorius von Bach & Groenewald, 1991) and in the Eastern Free State (Sartorius von Bach, Koch & Van Zyl, 1992).

In this article, an alternative approach, emanating from the field of Industrial Psychology, is used to determine and test the effects of managerial ability on a sample of small farmers producing cotton at Makatini in Northern KwaZulu-Natal.

3. THE CONCEPT OF COMPETENCE

The main objective of this research was the development of a model of competence for potential use as criterion for selection and training of small farmers.

Competency has been defined as "an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation" (Spencer & Spencer, 1993). Competencies indicate how individuals act and think, how they generalise in accordance with situations, and how they persevere over a long period (Dunnette & Hough, 1991).

Six mutually dependent competence clusters are important (Spencer & Spencer, 1993).

a) *Achievement and action:* This cluster consists of four competencies, *viz.* a result orientation, a prediction for quality and accuracy, initiative and information gathering.

b) *Helping and human service*, in which interpersonal insight and empathy and also an orientation toward client service are important.

c) *Impact and influences* are mostly concerned with the effects that an individual has on other people. Impact consists of creating a favourable impression in order to gain support. An organisational consciousness and also the ability to develop and maintain relationships are important competencies in this regard.

d) *Management* with the aim of leading the organisation. Sub competencies in this regard are firstly, the development of others to enable them to reach set goals. A second competence is assertion and the use of positional power in order to achieve goals. Teamwork and co-operation form a third competence, while a fourth consists of leadership.

e) *Cognitive ability* functions as the intellectual version of initiative as a person has to understand a situation, problem or opportunity. Analytical thought, conceptual thought and technical/managerial competence are components of this ability. The latter involves the retention of knowledge in a usable form.

f) *Personal effectiveness* involves the person's maturity concerning his work and his interaction with other people. It also involves his ability to handle the immediate demands of the environment. Self-control, self-confidence, flexibility and the ability to direct actions, goals and priorities toward goal achievement are important competencies in this regard.

The above categories include between 80% and 95% of the competencies needed to function successfully (Spencer & Spencer, 1993). Other important competencies include choice of the right profession, communication, learning ability and writing skills.

4. RESEARCH APPROACH

4.1 Classification and sample

Data was collected from a sample of small farmers producing cotton in the Makatini Flats in Northern KwaZulu-Natal. The first step was to lay down criteria of success. Discussions were held with extension officers and other employees of firms serving farmers in order to subdivide farmers in three groups, labelled A, B and C.

Farmers labelled A exhibit the following characteristics:

- They have regular contacts with the officers and also regularly attend extension meetings.

- In general, they have a high standing in the community, development agencies and among fellow farmers.

- They follow extension officers' advice concerning planting time and cultivation methods.

- The senior author of this article observed that these farmers' fields had better plant populations and were tidier than those of other farmers.

- Their production loans, water levies and land rent were mostly paid.

- Some of them also lease additional plots.

- They possess more movable assets – e.g. vehicles, implements and tools than the other farmers.

B and C farmers differ from each other in the following aspects:

- There are differences in plant population and production practices.

- C farmers could not qualify for financing.

- C farmers fare worse than B farmers in most characteristics in which A farmers differ from both.

The sample consisted of a random sample of 10 farmers from each category (A, B and C). Personal interviews were conducted with a predetermined schedule. The schedules consisted of part of the ICS (Identifying Criteria for Success) computer-based job analysis and included behaviour oriented questions concerning 24 dimensions/competencies. Extension officers were involved with evaluations.

Each correspondent had to report on the importance and also frequency of a particular dimension.

A Zulu interpreter was utilised where necessary.

4.2 Statistical analysis

Descriptive statistics was used to simplify data and because of its usefulness in setting up observation to facilitate deductions (Du Bois, 1965). The arithmetic mean, median and mode were used.

The Kolmogorov-Smirnov two sample test (KS-II) (Lutz, 1983) was used to test for significance of differences between groups A, B and C. A significance level of 95% (P = 0.05) was chosen as criterion of difference.

5. RESULTS : QUESTIONNAIRE ANALYSIS

5.1 Biographical details and linguistic proficiency of sample farmers

Table 1 gives details of the respondents' biographical details, and their linguistic proficiency appears in Table 2.

Table 1: Biographical information of farmers in sample (1994) (N = 30)

Variable	Arithmetic mean			Median			Mode		
	A	B	C	A	B	C	A	B	C
Age	48.2	49.3	48	46	48	50.5	50	60	52
Years school training	2.7	2.8	2	2	1.5	0.5	0	0	0
Farming experience (years)	6	5.6	2	5	2.5	1.5	5	2	2
	n= 10	n=10	n=10	n=10	n=10	n=10	n=10	n=10	n=10

Table 2: Linguistic proficiency of respondents (1994) (N = 30)

Variable	A-farmers		B-farmers		C-farmers	
	Yes	No	Yes	No	Yes	No
Zulu						
Talk	10	0	10	0	10	0
Read	8	2	8	2	8	2
Write	8	2	7	3	7	3
English						
Talk	6	4	1	9	1	9
Read	6	4	1	9	1	9
Write	2	8	1	9	1	9

Whereas there are no appreciable differences in the age distributions of the three groups of farmers, the C group has had less formal education with the largest group (the mode) having had none. They also had had the least farming experience. Half of the A group of farmers (see the median) had 5 years or more, whilst the median values of B and C farmers was 2.5 and 2 years respectively.

All farmers speak Zulu, and there is little if any difference in their Zulu literacy. However, six of the ten A farmers can speak and read English – the language in which, for example most label communication is done – as compared with only one out of ten for the other two groups.

5.2 Importance of farming facets

Thirty-eight questions were put to respondents to determine the degree of importance they attached to different factors. The respondents had to respond as follows:

1 : Important
2 : Very important or
3 : Not important

For purposes of brevity, only the questions, on which a considerable degree of differences was encountered, will be dealt with here. The responses appear in Table 3.

Table 3: Frequency distributions : Importance of factors involving competence (1994) (N = 30)

Question (number and context)		I	A	B	C
Verbal communication					
1.	How important is it for you to give verbal instructions or information to labourers?	1 2 3	4 6 0	3 7 0	1 9 0
2.	How important is it for you to give oral information to extension officers and various institutions?	1 2 3	7 3 0	7 3 0	2 8 0
Maximisation of achievement					
3.	How important is it for you to communicate the importance of high yield levels to your labourers?	1 2 3	0 10 0	5 5 0	3 7 0
4.	How important is it for you to provide feedback on labourers' work performance?	1 2 3	7 3 0	3 7 0	9 1 0
5.	How important is it for you to teach labourers to be successful in the job?	1 2 3	1 9 0	5 5 0	1 8 1
Initiative					
6.	How important is it for you to plan/supplement new (more effective) ways of managing your farming business?	1 2 3	1 9 0	1 9 0	4 6 0

Question (number and context)		I	A	B	C
Individual leadership					
No intergroup differences apparant		-	-	-	-
Analysis					
7.	How important is it for you to identify strengths and weaknesses of products from suppliers or vendors?	1 2 3	0 10 0	4 6 0	2 8 0
8.	How important is it for you to analyse customer's needs, issues or concerns?	1 2 3	3 7 0	6 4 0	10 0 0
Judgement					
9.	How important is it for you to make decisions about customer's complaints?	1 2 3	4 6 0	4 6 0	9 1 0
10.	How important is it for you to make decisions about capital expenditures	1 2 3	1 9 0	4 6 0	1 9 0
Planning and organisation					
No intergroup differences apparent		-	-	-	-
Motivation					
11.	How important is it for you to work at a fast pace?	1 2 3	4 6 0	1 8 1	2 8 0
12.	How important is if to you to adapt to rapid changes in your work schedule?	1 2 3	0 10 0	5 5 0	2 8 0
13.	How important is it for you to spend weekends at work?	1 2 3	0 10 0	1 8 1	3 6 1
14.	How important is it for you to be held accountable for decisions?	1 2 3	1 9 0	7 3 0	4 5 1
15.	How important is it for you to share decision-making responsibilities with labourers?	1 2 3	1 8 1	5 4 1	3 7 0
16.	How important is it for you to use a variety of one's skills?	1 2 3	1 9 0	3 7 0	1 9 0

I = Importance; 1 = Important; 2 = Very important; 3 = Not important

In two categories, no apparent differences were discernible among the three groups: individual leadership and planning and organisation. In terms of individual leadership, all three groups regarded it important to get co-operation from labourers, for labourers to understand their jobs, to recognise

symptoms of serious problems, and to analyse market trends. All three groups regarded planning and organisation as important to plan the use of their own time to accomplish a variety of tasks, to schedule employees to specific tasks and to adjust work assignments to changing priorities.

However, differences among the three groups are more important than similarities, and these will now receive attention.

5.2.1 Facets in which A farmers differed substantially from both other groups

All the farmers of group A regarded the necessity or as very important the workers to be aware of the importance of high yields (Question 3) – a factor which, in conjunction with others, lead to higher levels of motivation. B category farmers appeared to regard this as less important compared to both A and C farmers.

A farmers also appeared to regard it more important to identify strengths and weaknesses of products bought (Question 7), with B farmers once again regarding this less important than the other two groups.

It is however mostly motivational aspects to which A farmers attached more importance than the other two groups (Questions 12-15). The A group regarded it less important to work fast, but rather more important to adapt to rapid changes in work schedule, to spend weekends at work, to be held accountable for decisions and share decision-making responsibilities with their workers. B farmers did not regard the use of a variety of skills as important as the other two groups did.

5.2.2 Facets in which C farmers differed substantially from both other groups

The C farmers were classified, *ex ante*, as the least successful group. A review of aspects in which their perception of importance differed from those of the other groups may therefore also be enlightening.

These farmers regarded verbal communication (Questions 1 & 2) in the sense of verbal instructions to workers and oral information to other institutions as more important than the other two groups of farmers – not surprising in view of their lower level of schooling.

In terms of achievement realisation, the C group also regarded feedback of work performance less important than the other two groups (Question 4). Neither did these farmers regard new ways of managing the business groups

(Question 6) or analysing customers' needs (Question 8) as important as the other groups.

The C farmers were also less concerned about customers' complaints (Question 9).

5.2.3 Facets in which B farmers differed substantially from both other groups

Two such factors became evident: These farmers regarded it less important to teach labourers to be successful in the job (Question 5) and to make decisions regarding capital expenditure (Question 10).

5.3 Frequency of competence behaviour

There were also 38 questions to determine the frequency at which respondents did certain actions or made certain decisions, ranging from more than once per day to an annual action. Once again only results of questions on which a considerable degree of difference was encountered among the three groups of farmers will be presented. Results appear in Table 4.

Table 4: Frequency distribution of the frequence of competence behaviour (1994) (N = 30)

Question (number and context)		f	A	B	C
Verbal communication					
1.	How often do you ask clear questions about work related aspect for labourers, extension officers etc.?	1 2 3 4 5	5 2 3 0 0	4 4 2 0 0	2 5 2 1 0
Maximisation of achievement					
2.	How often do you teach labourers to be successful in the job?	1 2 3 4 5	4 4 2 0 0	4 1 4 1 0	1 5 4 0 0
Initiative					
No distinguishable differences among groups		-	-	-	-
Individual leadership					
3.	How often do you get co-operation from labourers?	1 2 3 4 5	9 1 0 0 0	2 5 1 0 2	3 5 2 0 0

Question (number and context)		f	A	B	C
Analysis					
4.	How often do you identify strengths and weaknesses of products from suppliers or vendors?	1 2 3 4 5	0 9 0 0 1	0 8 2 0 0	0 4 6 0 0
5.	How often do you analyse customer's needs, issues or concerns?	1 2 3 4 5	1 6 1 1 1	0 2 7 0 1	3 2 1 4 0
6.	How often do you identify causes of customer dissatisfaction?	1 2 3 4 5	3 6 1 0 0	0 4 5 1 0	1 1 7 1 0
Judgement					
7.	How often do you consider the impacts of decisions on other areas of your business (farming)?	1 2 3 4 5	0 2 8 0 0	1 1 0 3 5	0 2 4 1 3
8.	How often do you plan the use of your own time to accomplish a variety of tasks?	1 2 3 4 5	0 8 1 0 1	1 1 2 6 0	1 3 5 1 0
9.	How often do you adjust work assignments or schedules to meet changing work priorities?	1 2 3 4 5	0 10 0 0 0	1 6 2 1 0	1 6 2 1 0
Motivation					
10.	How often do you work at a fast pace?	1 2 3 4 5	0 10 0 0 0	1 4 3 0 2	4 3 3 0 0
11.	How often do you adapt to rapid changes in your work schedule?	1 2 3 4 5	0 10 0 0 0	1 5 3 1 0	2 3 4 0 1

f = Frequency of action; 1 = More than once per day; 2 = Daily; 3 = Weekly; 4 = Monthly; 5 = Annually

5.3.1 Facets in which A farmers differed substantially from either or both other groups

A and B farmers tend to ask work-related questions more frequently than C farmers (Question 1) and thereby appear to fare better in communication.

It appears that A farmers underwent in-job training more frequently than B farmers did, and who in turn do this more frequently than C farmers (Question 2). One should therefore conclude that A farmers' workers should be expected to be the best achievers, while workers with C farmers can be expected to fare the worst. This is probably related to leadership – A farmers reported co-operation from co-workers to occur all the time, and certainly more frequently than B and C farmers (Question 3).

A farmers also appeared to be more analytical: They analyse customers' needs, and identify causes of customer dissatisfaction more frequently than the other two groups (Questions 5 & 6). It also appeared that A and B farmers are more frequently engaged in identifying the strengths and weaknesses of products from suppliers and vendors (Question 4).

Judgement is another facet in which A farmers' routines appeared to differ from those of the other farmers. They considered impacts of decisions more often – mostly weekly – than the others (Question 7), plan the use of their own time more frequently (Question 8) and adjust their work assignments or schedules to meet changing priorities on a daily basis, more frequently than the other farmers (Question 9).

A farmers also appeared to be more industrious and motivated than the others. They appeared to work at a fast pace practically every day and also adapt daily to changed work schedules (Question 10 & 11).

5.3.2 Facets in which C farmers differed substantially from the other groups

C farmers did not ask work-related questions as frequently as A and B farmers (Question 1) and were also less frequent in their evaluation of products from suppliers (Question 4).

In general, the differences between Group B and Group C appeared to be somewhat trivial, whilst Group A appeared to differ more substantially from Groups B and C.

6. FUNCTIONAL FACTOR DIFFERENTIATION

The previous analyses (Tables 3 and 4) indicated respondents' perceptions regarding generic aspects as identified in ICS (Identifying Criteria for Success). The generic questions can be reduced into functional management areas. Every question asked concerning managerial aspects (including those in Tables 3 and 4) is classified into one of four managerial areas. It is compared to the norm as identified for measuring a successful farmer (as set out in 4.1 above), and expressed as a percentage of the norm. Results appear in Table 5.

Table 5: Functional management areas (1994) (N = 30)

Management area	A Farmers (%)	B Farmers (%)	C Farmers (%)
Labour management	63.73	59.72	63.78
Financial management	59.52	47.32	53.08
Marketing Management	62.03	49.69	52.96
Physical farming activities	61.50	56.64	60.34

Reduction of questions into management areas yielded significant differences only in financial management and marketing management. A farmers were superior to the others regarding these two aspects.

A similar exercise was done in terms of generic management dimensions, and a quantitative score, measuring the relative importance of each dimension, was calculated. Results appear in Table 6.

Table 6: Quantitative dimension scores : Generic management dimensions (1994) (N= 30)

Dimension	A (%)	B (%)	C (%)	Weight
Communication	63.3	59.1	61	7
Maximisation of achievement	67.3	63.5	59	6
Initiative	58.1	63.46	64.4	6
Individual leadership	71.2	59.43	67.53	5
Analysis	58.43	50.43	51.89	5
Judgement	64.3	45.1	45.8	4
Planning and organising	62.18	53.70	46	4
Motivation	60.46	57.36	61.1	3
Mean	63.16	56.51	57.09	

Dimension score = $\Sigma X_1 \times \Sigma X_2 / EN_v \times 100/1$
when ΣX_1 = Sum of importance counts
ΣX_2 = Sum of frequency counts
EN_v = Sum of norms

The results showed that communication is the most important generic dimension, followed by maximisation of achievement and initiative. Motivation appeared to be the least important.

7. CONCLUSION

The research has shown that the approach used in this analysis can be used successfully to identify at least part of the dimensions which in a particular community or in a particular area will be associated with farming success.

One should not generalise too much from the empirical findings in this study. Many more studies will be needed before one can arrive at anything approaching generality.

Another question concerns the potential of the approach used in this research to be used as a guide for the selection of new farmers to be settled or for financing purposes. The reply is likely to be negative. This approach will certainly be too ponderous, especially for *ex ante* evaluation of the potential abilities of a large number of applicants to farm successfully with a certain range of products, or within a certain region or environment.

However, certain elements of this approach can be useful within a differently devised scheme. It appears that adaptations to the scale of Burger (1971) can be done and tailored for use of settler selection. Inclusion of marketing management criteria and strengthening of financial management aspects appears to be strong candidates, based on findings in this paper.

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