CHARACTERISTICS OF POTENTIAL SUCCESSFUL AND UNSUCCESSFUL EMERGING COMMERCIAL COTTON FARMERS[1]

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ABSTRACT

This paper describes a typology of sample households in terms of their farming orientation. Data was collected in two cotton growing schemes in Mpumalanga, namely Moutse and Nkomazi. Cluster analysis was applied to generate various farmers' groupings according to their success potential. This analysis yielded 4 clusters two of which could be regarded as very successful and the other two groups as less successful. The realistic description of the various socio-economic groupings can facilitate the design of the support system based on the needs and aspiration of such groups.

1.   INTRODUCTION

Efforts over the past years to transform small-scale farmers into successful commercial operators have often seemed not successful. Current agrarian reforms, particularly LRAD, aims, *inter alia*, to create a successful black commercial farming class. Thus, information

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describing farmers' characteristics and their attributes with respect to their farming potential will promote the design, farmer selection and development, and implementation of appropriate policies. This exploratory study attempts to identify a set of factors that distinguish potentially successful farmers from unsuccessful ones. The purpose of this paper is to describe a typology of sample households in terms of their farming potential. Results could help to improve the ability of small business farming enterprises to develop and prosper in an increasingly competitive and complex world. It is based on the recognition that entrepreneurship has a critical role to play in the development of the South African agricultural economy. Success versus failure prediction research also benefits existing farmers, those who assist, train and advise them, those who provide capital for their ventures, suppliers and public policy makers. It is envisaged that the findings will help promote the trend towards emerging entrepreneurship in South Africa.

The paper begins with a literature review outlining the attributes and characteristics of a potential successful entrepreneur. The cluster analysis technique, a method applied in generating various farmer grouping according to their success potential, is introduced thereafter. This is followed by discussion of results of cluster analysis and implications thereof. The last section concludes.

2. CHARACTERISTICS AND ATTRIBUTES OF A POTENTIAL SUCCESSFUL COMMERCIAL FARMER (ENTREPRENEUR): THEORETICAL UNDERPINNINGS

In order to understand why some individuals become entrepreneurs and why some entrepreneurs are relatively more successful than others, Ray (1993:347) indicates that three key elements must be understood or addressed: the entrepreneur's personality or attributes, the entrepreneur's background and experience, and the entrepreneur's skills and knowledge. Ghosh, Kim and Meng (1993:33) group this body of literature into two broad approaches – descriptive and prescriptive.

2.1 Descriptive approach

The descriptive approach seeks to describe the characteristics or attributes entrepreneurs will presumably posses. Nicholson and

Bembridge (1991:9), Ghosh *et al* (1993:36) and Ray (1993:349), in summarising research done on this topic concluded that the most important characteristics attributed to persons exhibiting entrepreneurial behaviour and subsequently a successful business are internal locus of control, the need for achievement, creativeness, risk taking, independence and autonomy, assertive ability, initiative, innovativeness, optimism, commitment, persistence to work hard (perseverance), flexibility, leadership, a positive self image (physical appearance) and resourcefulness

2.2   Prescriptive approach

This approach seeks to prescribe factors that contribute to the success of an enterprise. Many authors (Ray, 1993:348; and Ghosh *et al*, 1993:36 citing Evans, 1986; Wood, 1989 and Flahvin, 1985) state that managerial skills and behaviour are the main determining factors that cause a business to prosper or fail. Specific competencies within the areas considered most important are maintaining financial records, budgeting, a financial reporting system, planning goals and objectives.

Steiner and Solem (1988:52) portrayed a successful entrepreneur as someone likely to have the following characteristics: access to adequate financial services and competitive advantage based on costs and quality. Gaskill and Hayland (1989:28) identified four keys to a successful business which included a study of the competition, measurement of performance, the trait of not becoming too comfortable with progress, and also market and financial intelligence. Finally, Ghosh *et al* (1993: 37) argue that the following are some of the chief factors determining the success of the business: managerial background and experience, satisfactory government support and good labour relations.

It should, however, be acknowledged that the decision to become an entrepreneur is complex and the absence of one or more variables may or may not be sufficient to deter one from becoming an entrepreneur. In reality, the decision to become an entrepreneur is probably a complex interaction between attributes and the situation faced by the individual.

3.   CLUSTER ANALYSIS TECHNIQUE

Previous studies (Nicholson & Bembridge, 1991:9 and Nel, Botha & Groenewald, 1988:47) on the identification of the attributes and characteristics of potential successful and unsuccessful farmers relied primarily on the prior knowledge of extension officers about the farmers. Insufficient knowledge about the sample farmers precluded the adoption of such an approach in this study partly because of a relatively large sample size. In addition, success means different things to different people.

As a result of the aforementioned limitation, cluster analysis technique was adopted to achieve the objective of this study. This technique was applied on data collected from 177 respondents situated in two cotton growing schemes in Mpumalanga, namely Moutse and Nkomazi. Its main advantage is that it can suggest, based on complex input, groupings that would not otherwise be apparent. SPSS South Africa (2001: 25) argues that cluster analysis is an exploratory data method and expecting a definitive solution is therefore a sure recipe for disappointment. Thus, there are no priori reasons for expecting sample households to be arranged in distinct clusters or groupings with particular sets of homogenous characteristics. It does not provide a perfect, seamless and timeless solution. But cluster analysis can still suggest useful ways of grouping the data. This technique is based on distances derived from the measures taken on the observation and these measures are typically interval scale.

There are two types of clustering methods, hierarchical and non-hierarchical (SPSS-SA, 2001:22). The hierarchical method calculates the distance between the starting points, combines the closest points into a group and continues to allocate points to the nearest group. The non-hierarchical method, in contrast, assigns objects on the basis of a specified number of clusters to generate the best cluster solution. When clustering many observations, non-hierarchical analysis is usually the method of choice. However, the choice is typically governed by the type of data one is working with and what makes the most conceptual sense for the clusters one is trying to form. Furthermore, the typology must not generate an unmanageable number of types. The non-hierarchical clustering method was therefore applied in this study.

4.   EMPIRICAL FINDINGS AND RESULTS

The first step was to lay down criteria for success. Although these criteria are certainly necessary, these are not sufficient for success as commercial farmers/entrepreneurs, but these methods can be used to predict farmers' likelihood of success.

There is no generally accepted list of variables for use in forecasting business success or failure (Lussier, 1995:17). The basic premise of the literature analysed in the previous section is that entrepreneurial personality is important in determining success or failure of the business, but according to Ray (1993:344) there is no ideal-type personality or marginal set of attributes that guarantees success for a business.

The theoretical framework outlined in the introduction suggests that variables that depict the entrepreneurial skills of the households are likely to provide the best basis for a classification that captures various households' entrepreneurial and behavioural patterns. Five main variables were selected for the generation of clusters, namely leadership, creativity, motivation, need for achievement of goals and attitude to risk. With the exception of the variable 'attitude to risk', other variables were finally used to generate clusters. This variable had a zero degree of importance, hence its exclusion. With the exception of the variable 'motivation', other variables had two sub-variables (proxies).

Cluster analysis yielded six clusters and these clusters were rearranged to form four clusters. Clusters were classified according to success potential and are the following:

4.1   High Success Potential Households (HSPH)

This cluster consists of 38 households. The main distinguishing feature of this cluster is that it possesses the highest level of entrepreneurial skill as depicted by the variables used to generate clusters. This cluster has the lowest mean age of respondents (48) compared to the other clusters as shown in Table 1. A striking observation is that this cluster has the highest percentage of respondents who do not think that keeping production costs low is important for a long-term success of the

Table 1:   **Household characteristics by cluster groups**

	HSPH	MSPH	LSPH	VLSPH
Household characteristics/assets				
Number of households	38	87	34	18
Mean Age	48	54	61	53
Mean land size (ha)	7	7	9	5
Mean farming experience (in years)	7	8	7	8
Financial				
Mean Gross Income (R)	13 558	26 998	20 604	28 014
HCI	0.92	0.96	0.95	0.89
Gender (%)				
Male	50	56	79	67
Female	50	44	21	33
Educational status (%)				
No Schooling	21	44	44	55
Primary education	42	25	28	28
Secondary education	34	23	28	11
Tertiary education	3	8	-	6
Farming motive (%)				
Commercial motive (yes)	76	45	77	89
Farming as a principal occupation (yes)	87	92	79	89
Risk (%)				
Risk taker	13	7	3	-
Risk neutral	55	84	47	56
Risk averse	32	9	50	44
Credit (%)				
Access to credit (yes)	63	88	53	72
Management (%)				
Farmers keep records (yes)	66	92	77	94
Keep production costs low				
Not important	32	9	9	6
Important	24	8	12	22
Very important	44	83	79	72
To have sole land rights				
Not important	-	-	8	-
Important	16	10	55	50
Very important	84	90	37	50

	HSPH	MSPH	LSPH	VLSPH
Financial management training important before farming				
Not important	-	5	27	11
Important	16	9	41	44
Very important	84	86	32	44
Social capital (%)				
Co-operation with white commercial farmers (yes)	16	10	18	22
Farmers' organisation member (yes)	74	76	82	61
Region (%)				
Nkomazi	31	48	12	9
Moutse	14	21	40	25

business. These are likely to be Moutse farmers who use mechanical planting despite extension officers' advice to use manual planting which is relatively cheap. But it is also worth noting that this cluster regards having sole land rights and financial training before farming as a very important factor for success as revealed by a significant number of respondents (89%).

4.2   Moderate Success Potential Households (MSPH)

This group is almost similar to the aforementioned group with respect to their entrepreneurial skill. It is by far the largest group with 87 respondents. The majority of these respondents (48%) are in Nkomazi. In the light of Nkomazi's relatively isolated geographical situation, it is not surprising to find that 92% of the respondents in this cluster regard farming as their principal occupation. A considerable number of respondents (86%) in this group regard financial management training before farming as a very important factor for the long-term success of the farm. This group is second highest with regard to respondents regarded as risk takers, but a significant number of them are risk neutral. Like the first group, it has a mean land size of 7 hectares.

4.3   Low Success Potential Households (LSPH)

This is the second smallest group and consists of 34 households. The majority of respondents (40%) in this group are located in Moutse. Males dominate this group by far (79%). Despite having the largest

mean land size, it has the second highest commercialisation index of 0.95. The mean age of respondents (61) is highest of all groups and as such the majority of them (50%) are risk averse. These farmers do not regard having sole land rights as important for the long-term success of the farm as done by the other groups. It is also the only group without any respondents with a post-matric formal education qualification.

4.4   Very Low Success Potential Households (VLSPH)

Cluster analysis reveals this group with the smallest number of households (18) as a group with a very low level of entrepreneurial skills. It has the smallest number of hectares (5 on average) and the lowest commercialisation index of 0.89. It consists of a relatively young group of farmers as shown by a mean age of 53 years. None of respondents in this cluster prefer taking risk. The majority of respondents (25%) in this group are situated in Moutse. An equal number of respondents (89%) in this group engage in farming for commercial purposes and farming is a principal occupation for them. Encouraging to note in this group is that it is the group with the highest number of respondents with a co-operation agreement or relationship with their white commercial farmers counterpart.

5   DISCUSSION OF RESULTS AND IMPLICATIONS

Cluster analysis provided a way of classifying households into four groups. It also provided insight into the characteristics of each group. As previously indicated, cluster analysis do not yield clearly identifiable groups that are entirely heterogeneous from each other. The four groups generated do share some similar characteristics and attributes. However, from the preceding analysis of various clusters one could argue that the first two groups (HSPH and MSPH) could be referred to as very successful (VS), while the latter two (LSPH and VLSPH) could be referred to as less successful (LS).

A general and an apparent observation is that the VS group seems to be dominated by sample farmers in the Nkomazi region while Moutse sample farmers dominate the latter two groups. Furthermore, a noticeable observation is that the LS group has a relatively low percentage of risk takers. The VS group is dominated by a group of

relatively young farmers and this possibly influences farmers' attitude to risk.

These results have an important implication for the implementation of the South African cotton sector strategic plan. One of the challenges facing the South African cotton industry is the revitalisation of the existing cotton irrigation schemes as well as the acquisition of additional land and identification of a group of potential new commercial farmers to be settled thereon. R51 million has been earmarked to kick start this project in Mpumalanga. With a limited budget to be spent in the province, the results of the study at least gives an indication of the attributes associated with potential successful farmers and the region where the majority are likely to be found. While this study might be path breaking, 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, necessary infrastructure and agri-milieu (Nel, Botha & Groenewald, 1998:59).

Typology analysis allows the definition of recommendation domains for technical advice, training and technology transfer purposes. The analysis shows that small-scale farmers are not a homogenous group. Thus the realistic description of the various socio-economic grouping can facilitate the design of the support system based on the needs and aspiration of such groups. For instance, extension officers can identify various modes of delivery to suit each particular group. With these groupings, therefore, extension officers are in an opportune position to lend valuable guidance and education to farmers, planners, etc. so that they make the best decision.

6   CONCLUDING REMARKS

The purpose of this study was to classify and describe sample farmers in terms of their farming potential. The theoretical background provided in the first part of this paper provided a framework in which this objective could be achieved. The enormous variability that exists amongst small scale farming communities demonstrates the difficulties of trying to classify rural farming households. The results of the cluster analysis technique yielded six clusters which were then rearranged to form 4 clusters, namely HSPH, MSPH, LSPH and VLSPH. These

clusters could be grouped further into two main clusters known as VS and LS.

A conclusion that could be drawn especially from the VS group is that there are a group of relatively small-scale, commercially oriented farmers who have the necessary entrepreneurial attributes to make a success of possibly larger more viable farming enterprises. By providing opportunities, incentives and using some of the criteria suggested in this study for farmer selection, it will undoubtedly be possible over time to increase the number of successful black commercial farmers in South Africa. However, it needs to be acknowledged that the results of this study do not represent the story of the vast number of small-scale agriculture in South Africa. This may be a rich area for further research.

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11

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