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CHAPTER 9
SOCIO-ECONOMIC CHARACTERISTICS OF THE POPULATION IN NKOMAZI

9.1 Introduction

Bembridge (1986 b: 77) citing Jones & Rolls (1974) and Crough &Chamala (1981) noted that a situation analysis of the social and cultural environmental of a community is an essential prerequisite in developing strategies for successful agricultural and community development.
However, more productive farmers have more progressive attitude towards farming. Similarly, Rogers &Shoemaker (1971:187) showed that innovators and early adopters had a more favourable attitude towards change and science. The relationship between personal and environmental factors has been extensively studied and although the findings are sometimes of a divergent and contradictory nature, clear evidence of an influence relationship has been provided (Rogers 1983,pp.251-252, 307-311).The personal and economic factors investigated here include : age, gender, job experience , development of knowledge and socio-psychological factors.

9.2 Gender

In South Africa, studies found that males, fared better than females on commercial agricultural projects (Botha &Lombard, 1992). However, this is contradicted by evidence in many of DBSA's farmer support programmes (Singini &Van Rooyeen, 1995).

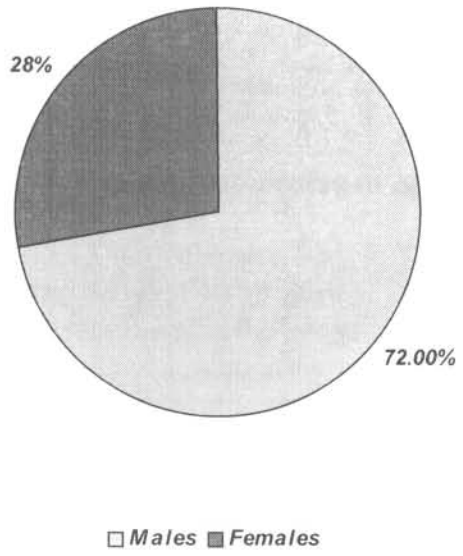

Figure 9.1 Farmers in Nkomazi according to gender (2000)

Figure 9.1 presents the gender composition in Nkomazi. According to the figure it appears that 72% of farmers are males while 28% of farmers are females which is not

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typical in the rural South African areas where there is a high labour out migration of males to the industrialized cities like Johannesburg.

9.3 Age of respondents

According to the available literature, Rogers & Schoemaker (1971 pp 185-186) concluded that there is inconsistent evidence about the relationship of age and innovativeness.In Nkomazi during the year 2000, the age of farm operators was determined and is summarised in the following figure 9.2:

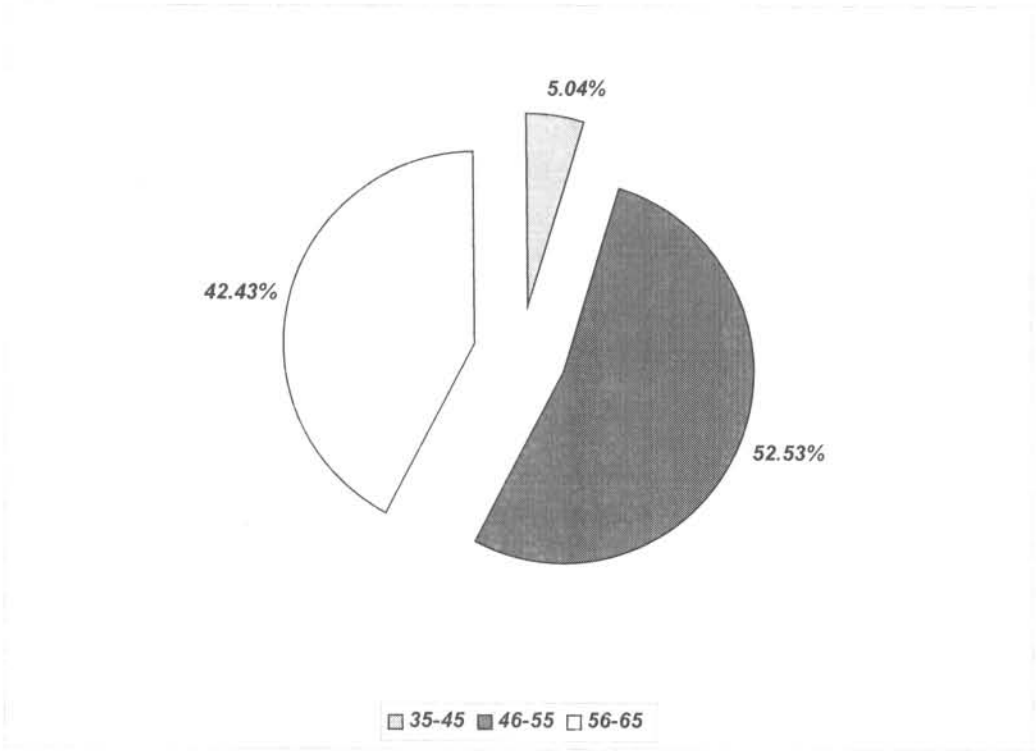

Figure 9.2 Farmers in Nkomazi according to Age (2000)

Figure 9.2. shows that 42.43 % of farmers were in 56- 65 years old age group while 52.43% had an age ranging between 46-55 years of age.
About 5.14 % of farmers were found in the age group of 35-45 years.
The conclusion is that the age of irrigation farmers is lower than in most rural areas. Furthermore, the relationship between age and other economic features such as correlation with efficiency variables, relationship with risk taking, was analysed and summarised in Table 9.1

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Table 9.1 Correlation between ages of respondents in Nkomazi with the economic variables

N=118*

	Economic variables			
Variable Age of respondents	Net farming income	Gross farming income	Yield /tons/farm	Yield /tons/ha
	0.017787 0.1702 61	0.00489 0.9581 118	**0.17209** 0.0624 118	0.04887 0.9587 118

** Significantly correlated at 6%

* There were 21 observations missing which brings the N number to 118
***78 observations missing concerning the net farming income

From the data in Table 9.1, age of respondents does not contribute significantly to the production efficiency. In the case of the total yield per farm, there is a weak relationship r=0,17209 at P< 0,06 indicating that the older farmers tend to have higher yield. And this finding is in agreement with Rogers' (1983,p251) finding that age is not closely associated with adoption behaviour.

Table 9.2 Relationship between age and willingness to take risk

Age	No comment	Low risk	Medium risk	High risk	Total
35-45-	5	1	1	0	7
46-55	4	29	33	1	73
56-65	0	35	23	7	59
	9	65	57	8	139

When tested the independent variable age against the mediating variable willingness to take risk in Nkomazi there was a superficial relationship and non-significant between these two variables as proven by the following Chi-square equation:

X^2= Df 6 Value; 59,43 at P<0.001

9.4 Years of Previous Farming Experience

The use of the previous farming experience is based on the following assumption: the previous existence of a viable black agricultural community; farm workers who have lived and worked on white farms and, through practices, have acquired some interest and knowledge of farming, and food production activities carried out by man and woman in rural areas which serve as a basis for some knowledge of farming and

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formal and /or informal training in farming practices.(Van Rooyen & Njobe-Mbuli, 1998).

Both local research (Botha &Lombard, 1992) and international experience (Kinsey & Binswanger, 1992) show that a background which includes successful farming experience and acquired skills is strongly predictive of good performance and a negative experience of farming tends to drive people in other options of economic activity.

About 18.7% of respondents that were found with a previous experience greater than 6 years while the remaining majority had a farming experience comprises 3-6 yearsas shown in Table 9.3

Table 9.3 Distribution of the current Previous farming experience of farmers in Nkomazi (2000)

N=139

Previous farming experience (years)	Frequency	Percent
<3	27	19.4%
3-6	86	61.9%
>6	26	18.7%
Total	139	100 %

In Table 9.4, the correlation between the years of previous farming experience of Nkomazi farmers with some mediating variables, there was negligible correlations between years of previous farming experience and mediating variables coupled with practices adoption as well as the physical efficiency. Only in the case of the years of farming experience comprise between 3 years to greater than 6,although with some negative which indicates the importance of previous farming.

Table 9.4. Correlation between Years of previous farming experience and some mediating variables, Practices adoption, yield, and farming income N=139

Years of previous farming experience	Mediating variables (needs, willingness to take risk, undergo more training, knowledge of previous practices)	Practices adoptions	Yield /farm	Farming income
<3	0.07402	-0.09720	0.04842	0.023986
3-6	0.065049*	-0.29712	-0.30016	0.05624
> 6	0.030885	0.19185	0.14342	-0.14334
	0.18198	0.18198	0.04238	-0.13344

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*=P<0.01

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9.5 Years of Previous Work Experience

Table 9.5.shows that in Nkomazi ,6 respondents (4.3%) have less than 3 years of work experience as artisan in addition to the farming activity, while the majority (88.5%) of respondents have 6 years of work experience as professional in the public and private sectors.

Table 9.5 Overview of the total years of work experience in Nkomazi (2000)

N= 139

Total years experience	Work	Frequency	Percent
<3	Artisan	6	4.3%
6	Professional	123	88.5%
>6	Others commercial farming work	10	7.2 %
Total		139	100%

Table 9.6 Correlation between Years of Previous job experience and intervening variables coupled with practices adoption, yield and farming income

N=139

Years of previous job experience	Mediating variables	Practices adoption	Yield /farm	Farming income
3	0.05779	-0.0743	-0.25900	-0.02258
6	-0.92104	0.42389*	-0.11815	0.32119
>6	0.32104	0.66089	0.51559	-0.186070
Total	-0.01478	0.6721	0.22955	-0.17068

*P<0.05

Negligible to high correlations were found between the years of previous work experience with the mediating variables, practices adoption, yield and farming income per farm and per hectare. Significantly positive correlation were found between some of the variables with extensive job experience.

9.6 Farm size in Nkomazi

It is difficult, if not impossible to determine a fixed minimum area for a farmer to supply and fulfil all family needs. Bembridge, 1984 p74) quoted Slovo to have estimated that a rural family requires 3.4 hectares of arable land in order to sustain family life. Pearse in Arnon (1981, p.449) mentioned the concept of "livelihood threshold". According to this concept, the size of the farm should enable a farmer to

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produce sufficient calories for family needs plus a further 50% which could be sold to purchase supplementary foods and others essentials. Amon (1981,p.445) is of the opinion that size "...must be considered within the context of the norm of the community, the community of the land, the effectiveness of the infrastructure, the availability of the land use, population pressure, land tenure system, access to capital and know-how, the diligence of the farmers, climatic conditions and other physical aspects of the farmers " should be taken into consideration. The size of land needed by a farmer will thus have to be determined individually for each specific farmer taking into consideration the above-mentioned aspects.
Nkomazi area comprises two distinct locations, which are: Komatipoort and Malelane and separated by 56 km from each other.

Table 9.7 The average farm size in the Survey area of Nkomazi (2000)

N=139

Scheme (Project)	Total area / ha	Average farm size/ha
A KOMATIPOORT		
Figtree A	230	15,3
Figtree C	423.1	7.8
Figtree D	370.9	4.5
Lugendedlana/Shinyokane	514.5	15.6
Mbhunu B	382.2	6.1
Mbhunu C	136.6	5.9
Mhangane	98	7.0
Mfufane	292	6.3
Madadeni	413.3	7.5
Mangweni	123.1	12.3
Spoons 7	235	9.0
Spoons 8	558	7.5
Sibange	391.2	7.5
Walda	813.2	9.7
Tonga	00	00
KOMATIPOORT SUBTOTAL	4985.3	8.7
MALELANE		
Buffelspruit	220.8	7.1
Nhlangu East	122.4	2.1
Mbongozi	215.6	6.7
Low'creek	268.1	8.4
Boshfontein	238.8	10.0
MALELANE (subtotal)	1065.7	6.8

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According to the findings, it appears that the farm size in the twenty schemes ranged from as low as 2.1ha in the Nhlangu East scheme in Malelane to as high as 15.6 ha in the Lugendlana /Shinyokane scheme in Komatipoort.
While the average farm size in the two areas ranged from 6.8 ha in Malelane to 8.7 / ha in Komatipoort. The conclusion that can be drawn from the findings is that in Nkomazi region as a whole there was substantial differences in the size of farms among the farms operators. However, on the assumption that approximately four hectares of dry arable land is required for subsistence farming in medium to high potential agro-ecological areas (Bembridge, 1987:104), the present study suggests that the majority of farmers (92%) in Nkomazi have a viable farming unit. When one looks at the tremendous differences of the yield observed among the farmers, it could be concluded that the farm size should be considered as one of the possible causes in the discrepancies found in the sugar cane production.
Negligible correlations were observed between the farm size with the yield /ha r= 0.16000at P<0.0001, gross farming income/ha r= -0.16014at P<0,0835 and net farming income r= 0.16328 at P<0.02286. While a high significant correlation was found between farming size and yield/tons/farm r=0.053299 at P<0.0001, which means that the larger the farm, the higher yield /tons/farm as shown in the following Table 9.8.

Table 9.8 Correlation analysis of the farm size with the efficiency in Nkomazi

N=118♦

Variables	Farm size
Yield /tons/ farm	0.53299** 0.0001 118
Yield / tons / hectare	0.16000** 0.0835 118
Gross farming income /ha	-0.16014** 0.0835 118
Net farming income	0.16328* 0.2086 61****

♦ 21 missing data for N=118

****: 78 data missing with regard to the net farming income

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9.7 Distance to land

The distance to land is related to the geographical location of the farm in relation to the infrastructure and services. The importance of this factor is reflected in term of the influence it has on other factors, such as access to markets, access to infrastructure, access to extension services and spare parts as well. The distance to land is therefore an important aspect, but should be judged in term of available infrastructure and its accessibility. Table9.9.shows the distance to land for the majority of respondents (74.8%) ranged between 3.1km- 5km , while 19.4% of respondents have their distance to land ranging from 1.1km-3km, only one farmer (0.73%) had a distance to land over 5km.

Table 9.9 Frequency distribution of respondents in Nkomazi according to the distance to land

N=139

Code	Distance to land	Frequency	Percentage
1	<1km	7	5.03
2	1.1km-3km	27	19.42
3	3.1km-5km	104	74.83
4	>5km	1	0.73
Total		139	100

The main conclusion drawn from the finding in Table 9.9. above is that the distance to land should not present major limitation as most respondents have their farms units within an easy reachable and available infrastructure.
In general the farming activity in Nkomazi was not affected by the distance because the farmers have not to pay money for transportation as proven by the following Chi-square equation :

X^2= df 6,33 value 4,35 P<0.04

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CHAPTER 10
OVERVIEW OF BEHAVIOUR DETERMINANTS AND STATISTICAL ANALYSIS

This chapter addresses the contribution of each category of selected variables on the sugar cane farming success in Nkomazi based on the statistical analysis of data. The independent, mediating, and dependent variables were tested against farming until there was a correct fit which gave a clear indication on the contribution of each group of variables on the farming success.

10.1 Statistical Analysis

The analysis in this section was designed to:

- Determine through multiple regression analyses the independent variables that significantly contributed to the variance of farming success aspects of the small-scale farmers in Nkomazi
- Establish the degree of correspondence (if at all) via correlation analyses between one set of dependent variables on the one hand and between a set of independent variables and mediating variables on the other hand.

10.1.1 Regression analysis

Regression analysis is a technique often used in exploratory fashion to look for an empirical relationship between one variable and a set of other variables.
The relationship is often expressed in the form of:

$$Y_i = B_0 + B_j X_{ij} + E_i$$

An equation that predicts a response variable, Y_i (which is called a dependent variable) from a function of regression variables, X_{ij} (called independent, or predictor variable) and the unknown parameter: E_i

The parameter are estimated in such way that a measure of the fit is optimised, E_i is known as an error term.

10.1.2 Procedures followed to determine the significance of variables towards farming success

Preliminary lists of variables were selected according to the formulated hypothesis for statistical significance, and logical interrelation by means of Pearson correlation and chi-square analyses. The variables were grouped in four different classes namely: independent, mediating, dependent and results of behaviour (farming success) as presented in Table 10.1.

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A variable was considered when it has shown a direct relation with the next class, which also showed a relation with farming success.
Then these two groups were grouped together and tested against success. They were also tested in a correlation matrix; the variables showing lowest correlation with farming success were left out, until the best fit was selected.
The overall set of variables that interact as determining factors of behaviour are summarised in Table 10.1.

Table 10.1 The interrelation between different variables.

Human (psychological)		Economical-Technical	
Independent variables	Mediating variables	Dependent variables	
		Behaviour	Consequence of behaviour
Personal and Environmental	Knowledge Needs Perceptions	Adoption of practices P1 . : : . . Px	Efficiency : Yield/tons/(farm and hectare) + Farming income

From this set of variables that interact as determining behaviour, a final list of variables that showed a continuous influence or relationship with farming success were selected through this process.
The interrelation between these variables was eliminated by means of correlation matrix.The final step was to group all the variables together to test the relations and to determine their partial R^2 that is square of the multiple correlations coefficient towards farming success.

The screening instrument is therefore scientifically and statistically founded and is based on conventional extension theory. The instrument therefore not only confirmed the current theory but also consistet of a unique combination of quantifiable variables which include: personal, mediating and dependents.

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Table10.2 Interrelations between 3 quantifiable variables and farming success

Independent variables	Mediating variables	Dependent variables	Results of behaviour
Personal and Environmental factors	Knowledge Needs Perceptions	Behaviour	
$F(a) + B_{IV}$	$+ C_{MV}$ +	$D_{DV} =$	Y_{FS} (farming Success)

The Zero intercept was applied:

The following regression equation $Y_i = Bo + B_j Xij + Ei$

was altered to: $Y_{FS} = B_1 X + B_2 X + E_i$

In which case B_0 is removed from the equation in order to avoid rounding error and in such situation the line is likely to go through X= 0 and Y = 0, which implies that the line has got a zero intercept.
This procedure was applied in order to determine the best fit whereby the statistical values or low R^2 values obtained were left out and thus considered as meaningless.
The statistical regression equation was hypothesised according to the following functional relation:

To $Y_{FS} = f(a) + B_{IV} + C_{MV} + D_{DV} + E_i$

Where:

Y_{FS}= farming success (result of behaviour)

a= X/Y =0 (zero intercept)

B_{IV}= Independent variable (personal & environmental)

C_{MV} =Mediating variables (Knowledge, Needs, Aspirations)

D_{DV} = Dependent variables (Behaviour)

E_i = Unknown parameter (very difficult to discover since it changes for each observation Y)

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10.2 Results

10.2.1 Independents variables

It was proven by Duvel (1975) and by subsequent studies by Botha (1985), that the independent variables: personal and environmental factors appears to have a mere limited influence on behaviour.
However, in strategies of change, and farming efficiency these independent variables need to be considered but do not feature as forces of change (Duvel, 1975; Botha, 1985).
In the present study, independent variables as a group tested against farming success, have shown little direct influence on farming success, only two variables were selected from a list of 8 variables by means of regression analysis:

$$Y_{FS} = f\,(a + B_{IV})$$

Y_{FS} = farming success
a = x / y intercept =0
B_{IV} = independent variables

The two selected variables were:

-Years of previous farming experience
-Years of previous work experience

Table 10.3 Results of the fit: $Y_{FS} = f\,(a + B_{IV})$

Independent variables	Total R^2	P- values
Years of previous farming experience	0.5003	0.0001
Years of previous work experience		0.0573
Total F and P	53.22	0.0001

The two variables only explained 50.03% of the variation intervening in farming success when tested as a group against success.

10.2.2 Mediating variables

The 12 mediating variables were initially selected and tested against farming success but also in combination of independent variables.

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Those variables that were picked in the fit are as follows:

-Willingness to take moderate risk
-Previous knowledge of recommended agricultural practices
-The need to undergo more training

Table 10.4 Results of the Fit: $Y_{FS} = f(a + C_{MV})$

Mediating variables	Total R^2	P-values
Previous knowledge of recommended agricultural practices	0.8713	0.0001
Need to undergo more training		0.0001
Willingness to take moderate risk		0.0001
Total F and P	52.6	0.0001

The results show that 3 mediating variables were selected by the fit.
The three variables explained the contribution to the farming success by 87.13% as group alone.

10.2.3 The Dependent variables

Two dependent variables were selected by the fit and the results are presented in Table 10.5

Table 10.5 Result of the fit: $Y_{FS} = f(a + D_{DV})$

Dependent variables	Total R^2	P-values
Adoption of adequate fertilisation	0.6520	0.0001
Adoption of modern marketing		0.0001
Total F and P	50.20	0.0001

The fit does explain 65.20% of farming success when tested as group alone.

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Table 10.6 Summary: R^2 values of different fits

Type of variables	Fit equations	R^2
Independent	$Y_{FS} = f(a + B_{IV})$	0.5003
Mediating (alone)	$Y_{FS} = f(a + C_{MV})$	0.8713
Dependent (alone)	$Y_{FS} = f(a + D_{DV})$	0.6520
Dependent, mediating & Independent	$Y_{FS} = f(a + B_{IV} + C_{MV} + D_{DV})$	0.8897

Independent, mediating and dependent variables selected by the fit:

$$Y_{FS} = f(a + B_{IV} + C_{MV} + D_{DV} + E_i)$$

In this regression analysis, all three groups of variables were tested against success, the number of initial independent variables were 8, the mediating variables were 20, and 18 dependent variables.
Through this procedure the farming success in Nkomazi sugar-cane production can be predicted by the use of the following prediction equation:

Y_{FS}= {f (0.1800 x Willingness to take moderate risk) + (0.3142 x willingness to undergo more training) + (0.2488 x Previous knowledge of recommended practices) + (-0.8402 x Years of previous farming experience)+
(0.1104 x Years of previous work experience) + (- 0.6250 x Adoption of modern marketing) +(0.2067 x Adoption of adequate fertilisation)= 88.97 percent (+Ei) ($P < 0.0001$)}

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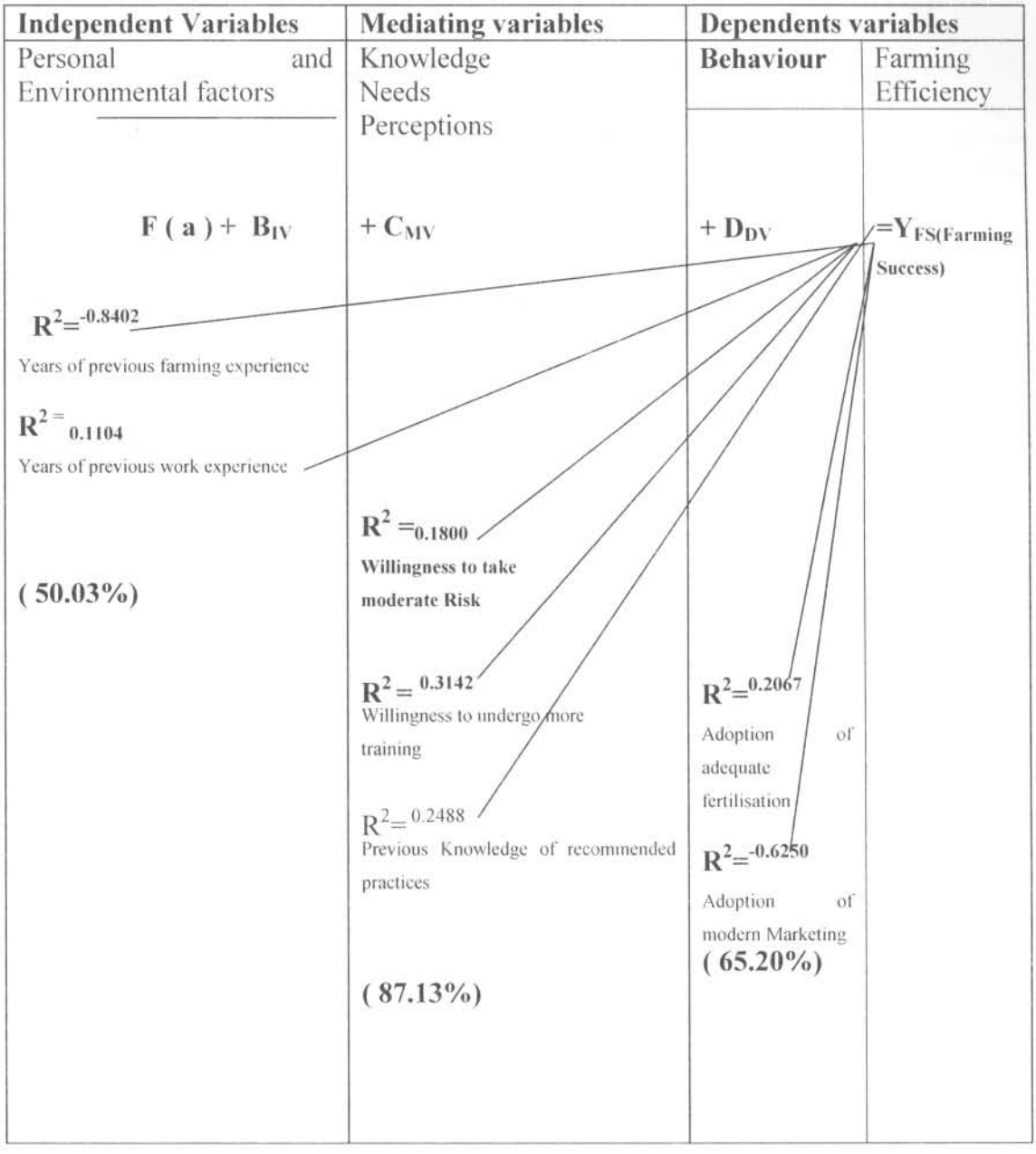
Table 10.7 Behaviour determinant's contribution to farming success in Nkomazi (2000)



The results of step-wise regression analyses in Figure 10.1 reveal tremendous differences in the influence that have the three group of variables: independent, mediating, and dependent on the farming success or farming efficiency.

The independent variables alone accounted for 50.03% of the total contribution to the variance of farming success, while the mediating variables accounted for 87.13% of the contribution to the variance and finally the dependent variables have accounted for 65.20% of the contribution to the variance of the farming success,

These results seem to single out the mediating variables as the best indicator and most important group of variables both in terms of variation accounted for as well as because it is the direct precursor of decision making, adoption behaviour and the resulting production efficiency.

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Finally, in Table 10.8 the overall R^2 of the different variables: (independent, mediating, and dependent) that were selected by the fits and thus giving the percentage of prediction of farming success should this scale is used in the future selection of potential successful farm operators.

Table 10.8 Results of the fits YFS $= f(a + B_{IV} + C_{MV} + D_{DV} + E_i)$

Variables	Total R^2	Partial R^2	P-values
Willingness to take risk	0.18001771	0.0131	0.0115
Willingness to undergo more training	0.31427675	0.2005	0.0460
Previous knowledge of recommended practices	0.24884493	0.0042	0.1003
Years of previous farming experience	-0.84028226	0.0063	0.0215
Years of previous work experience	0.11047956	0.0058	0.0925
Adoption of modern marketing	-0.62504817	0.0041	0.0232
Adoption of adequate fertilisation	0.20673253	0.0035	0.0178
Total P			0.0001
Total F			52.41
Total R^2			0.8897

Given the above findings Table 10.8, one can thus with 88.97% of accuracy ($P<0.01$) predict whether a given farmer or selected farmer will be successful should he participates in a land allocation project. The scale can be used on existing farmers to determine what kind of intervention or attention that should be brought in for future implementation.

In Table 10.8, there is a scale for the selection of potentially successful small-scale irrigation farmers; this scale comprises seven variables that explain 88.97 percent of the total variation in farming success. There is another 11.03 percent that can be used to apply certain discretion or preferences in the selection procedure of farmers.
However these 11.03% of preferences are less likely to affect the scientific or statistical significance of the outcomes of the present scale.

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CHAPTER 11
SUMMARY AND RECOMMENDATIONS

South Africa is a land with history of water shortage, which is one the major problems facing the South African Government particularly in view of the increasing population and expansion of the industry. In the field of agriculture, this increases the need for more rational water utilisation and efficient agricultural production. However, the settlement of small-scale farmers is a priority of the country. Therefore, for success in terms of sound management and production efficiency is of major importance.
Irrigation settlements in Nkomazi area of Mpumalanga are characterised by sugar cane yields that vary tremendously between small-scale producers. Some farmers are successful while others fail dismally. Identifying successful farmers and selecting the factors that have the potential on the efficient production is likely to have a socio-economic benefit in the less developed areas and for future farmers settlements schemes.

Based on theoretical exposition and literature survey it was hypothesized that:

- Managerial and farming success is dependent or function of certain personal and environmental factors (**1.1**)
- Behaviour determinants vary in terms of their contribution to the variance of farming success(**1.2**)

A total sample of 139 respondents of whom 104 farmers from Komatipoort and 35 from Malelane representing 10% sample of the overall farming population participated in the study.
Data collected in this study were processed by computer using Statistical Analysis System package (SAS) to determine frequencies, percentages, arithmetical and weighted means, chi-square values, correlations and step wise regression analysis. Several indicators were used namely: How do the characteristics of Nkomazi farmers and their farming operations affect their efficiency?, based on previous studies of irrigation farmer's behaviour and characteristics, total sugar production and average yield, annual gross farming income, risk index, level of solvency, farm operator age, gender, farm size, previous farming and previous work experience, land accessibility were taken into consideration and assessed in the study .

Generally, age of the farmers was lower than in the most rural South African areas, the majority of farmers in Nkomazi(52.43%) was in the 46-55years group and moreover the age of farmers does not contribute significantly to the farming efficiency because of a weak relationship ($r= 0.17209$ $P<0.06$).
These farmers have a previous farming experience comprises between 3-6 years coupled with some negligible to significant correlation between previous farming experience and farming success.
The independent variables as a group tested against the farming success has shown little direct influence on the farming success, they accounted only for 50.03% of the total contribution to the variance of farming success as stated in ***Hypothesis 1.1***
Meanwhile it was found that mediating variables accounted for 87.13% of the contribution to the farming success and therefore is the best indicator and most important group of variables both in term of variation accounted for as well as

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because it is the direct precursor of decision making, adoption behaviour and the resulting production efficiency.
The finding justifies the conclusion that "behaviour determinants vary in terms of their contribution to the variance of farming success ***Hypothesis 2.2.***

Based on the overall findings and observations from the present study, it can be concluded that identifying successful entrepreneur farmers and selecting those with the potential to produce more efficiently and thus to emerge as commercial farmers is likely to have a beneficial socio-economic impact in the less developed areas and future farmers settlement schemes.
Amongst other things, it should provide for increased production of food and fibre, and local employment instead of having many people trying to seek a subsistence out on small holding at low rate of efficiency
The present study has shown that there is certainly a slight minority of small-scale sugar-cane farmers commercially oriented, farmers who have the necessary entrepreneurial and innovators / early adopters characteristics to make a success of large more viable farming enterprise.
By providing opportunities and incentives and using some of the criteria suggested in this study for farmer selection, it will undoubtedly be possible overtime to increase the number of successful and efficient black farmers in Nkomazi in particular and in South Africa in general.

Recommendations:

Considering the findings and conclusions drawn from the study as well as the observations made during the investigation in Nkomazi, the following recommendations are made:

1. It is recommended that formal liaison structures be established between all role players in Nkomazi, traditional leaders, farmers associations, Mpumalanga department of agriculture, the financial services providers, research and extension institutions, irrigation board and other stakeholders and contractors.

2. It is recommended that formal harmonisation be established between different institutions in order to avoid conflicting or contradictory extension messages.

3. Based on appropriate research recommendations, extension services should inform farmers of the availability and accessibility of services, guide them to make applicable decisions.

4. The general low agricultural development indices established in this study suggests much scope for improvement and calls for concerted effort to up-lift farmer's conditions, in this context rural leaders and institutional support need to play a key role.

University of Pretoria etd – Muleba, J L I N (2006)

5. Training is required to facilitate the development of managerial and technical skills needed both on-farm and at the project level.

6. A sound policy framework to provide an environmental conducive for productive, equitable and sustainable agricultural development.

7. It is recommended that there is a need to strengthen the local farmers associations and thus to have a farmer lobby system which allows the promotion of their interest in the political market.

8. The findings of this study should be made available to the head offices of both local and national departments of agriculture for their references in developing agricultural development strategies.