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SAVINGS AND SAVERS:
AN ANALYSIS OF SAVING
BEHAVIOUR AMONG
CAPE TOWN'S POOR

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CSSR Working Paper No. 59

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Southern Africa Labour and Development Research Unit

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1. Introduction

This paper analyses the characteristics of low-income savers in a working class residential area of Cape Town. It uses the Khayelitsha and Mitchell's Plain Survey that was conducted in 2000. The survey was done at both a household and individual level for all adults over 18 years old. These household and individual datasets were merged to form the dataset used in this study. There were 4984 respondents of which 2644 were adults .The KMPS data set is a good foundation for analysing the characteristics of savers in a low income area characterised by high unemployment and poverty.

Economic theory defines savings as that part of disposable income that is not consumed (McConnel Brue, 1999: 178). The microfinance literature tends to focus on the importance of the demand of the poor for credit rather than on the importance of savings per se. However there is a relationship between savings and the demand for credit. Savings builds up a lump sum of money which can be accessed in the future, whereas credit gives a person immediate access to the lump sum which is paid off by future savings (Moyo. *et al*, 2002: 6). Both savings and credit are a means by which the poor are able to access a lump of money that is greater than their average expected weekly or monthly income when the need arises. Matin *et al (*2002) argue that these needs can be grouped into three categories; life cycle needs, emergencies and opportunities (Matin *et al,* 2002: 276). For the purposes of this study, savings are understood as foregone monetary consumption. Of course the definition of savings could be expanded to include foregone consumption of food and goods. Thus the purchase of a durable good could be considered as a savings form (but only if it was not purchased on a hire purchase scheme), as would the delayed consumption of a bag of mealie meal. Such forms of savings are not considered here as the KMPS does not ask sufficient questions in this regard.

During the life cycle of most people there are many occasions that demand a capital outlay that exceeds their weekly or monthly income. Occasions such as weddings, funerals or purchasing or building a house require the poor to have access to a lump sum of money that has either been created by previous savings or is supplied through a loan. Life-cycle needs are a predictable and often

predetermined event in a person's life and may take place regardless of whether a person can or cannot afford to fund it through their own current income. If they do not have sufficient savings they will try to borrow to pay for the event or purchase.

Crises are unpredicted events which may demand a sum of money that exceeds average income. These expenditure shocks include loss of property by fire, flooding or theft or the death of the principal wage-earner in the household. Often in times of crisis, accessing a lump sum is a matter of the day-to-day survival of the poor (Matin *et al*, 2002:277). Opportunities arise when the poor, through spending a lump sum, have a chance of bettering their lot in life by expanding their business or moving to a safer area. Again the lump sum required in these times exceeds that which the poor individual would usually have at hand. Savings therefore acts as an insurance medium for the very poor in that it provides a lump sum of money when life-cycle events, emergencies or opportunities require it (Baumann, 2003: 8).

It is sometimes argued that the South African poor do not save as every increment of their income is needed for their day-to day survival (Matin *et al*, 2002, 276). Others have shown that the poor do indeed save, albeit often in small amounts (Porteous 2003, Verhoef 2002). This study comes to similar findings, but goes further than the existing literature by analysing different forms of savings.

Recently there has been some debate surrounding the banking system in South Africa. The biggest criticism has been that the South African banking system does not provide basic saving services to the poor. 17.6 million adults in South Africa do not have a bank account (Porteous.2003. 2). Within the decile of the population with the lowest standard of living only 8% had a bank account, whereas within the 10% of the population with the highest standard of living, 91% had access to a bank account (ibid).

This study explores whether these national trends are reflected in the savings patterns of the respondents in the KMPS survey. As will be seen later, although the majority of the respondents do not use the formal banking sector, the poor do save through informal means such as stokvels, gooi-goois or burial societies.

2.   Savings in the KMPS

Respondents to the KMPS were asked whether or not they had any of the following forms of savings: bank savings, stokvel savings, burial society savings and other savings. Following this question they were asked to disclose the amount of money they saved in each category. This presented a problem for data analysis because some respondents were inconsistent when answering these qualitative and quantitative questions. Twenty- two respondents indicated that they did not save money in any of the above savings categories) but then reported some sum of money that they put into that savings form each month. In the analysis, all individuals that reported having a positive amount of money saved were regarded as savers.

This analysis is focused specifically on reported savings and will attempt to see where people save and what determine why a person in the KMPS will prefer to save in one saving form as opposed to another. Some respondents may indeed have saved yet did not disclose the amount of their savings. For ease of analysis these observationS were regarded as being non-savers. A significant problem was that two hundred and thirty eight adult respondents reported having no personal income, yet they indicated that they had positive savings. This could be a problem with the data set or could reflect that some individuals saved using the earnings of others.

Two hundred and forty three respondents said that their total household savings was greater than their total reported household income. This perhaps indicates a double counting problem, where different members of a household report the same savings item. What was fascinating about this was that some respondents in the same household reported saving the same amount in savings schemes that covered the entire family. This would occur where only one contribution per household was made to a particular scheme, say a burial society, but each member of the household would report that they were making that saving. Thus the aggregated total household savings variable would be an inflated figure as it was impossible for respondents to distinguish between whether they were saving on behalf of the entire household or whether they were saving individually. When dealing with the KMPS data set there was a continuous struggle to distinguish between the savings and income of an individual and that of the entire household.

One thousand two hundred and twenty nine people disclosed that they had positive personal savings. The mean savings was R198.03 and the highest amount saved was R6400. Of these respondents, 990 reported having a positive personal income. The mean household savings of positive household savers was R301.59. One thousand nine hundred and twenty- one adults in the KMPS

reported living in a household that had at least one form of savings. The highest household saving was also R6400. 53% of the adult respondents indicated that they did not save at all. The most common savings method by far was through contributing to a burial society only, whereas the next common savings category was saving in both a bank and burial society.

Table 1: Saving forms

Variable	*Obs*	*Mean*	*Std.*	*Min*	*Max*
Burial society savings	1015	R 53.48	64.07765	1	790
Stokvel savings	236	R 200	254.7354	1	2500
Other' savings	91	R 251.16	298.9595	2	2000
Bank savings	381	R 312.46	486.4964	1.5	6000
Personal savings	1229	R 198.03	405.1869	1	6400
Household savings	1921	R 301.59	473.4145	5	6400

The banking sector had substantial penetration as 31% of savers indicated having at least some savings in a bank. Although burial societies were the most common saving category the mean contribution to burial societies was the lowest of the four savings forms. The mean burial society savings was R53.48 a month, followed by stokvels at R202, then by other saving forms at R251.16 and then as expected by banks which had a mean monthly contribution of R312.46. Fortunately the kinds of other savings were disclosed in the survey and ranged from saving money at the actual household residence, to having a postal bank savings account, to more complex financial investments like unit trusts. These other saving forms proved to be relatively unpopular with only 7.4% of respondents indicating that they had savings under this category.
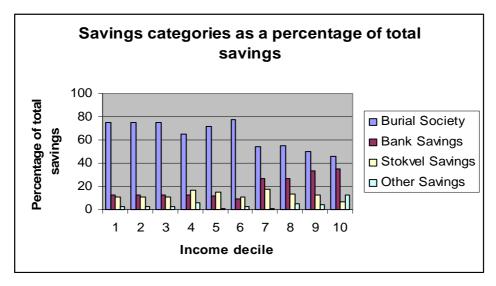

Figure 1

Figure 1 illustrates the relationship between income and the share of each saving form as a percentage of total personal savings. Burial society savings take up a larger proportion of total savings for poorer people. As income increases, the proportion of burial saving to total saving declines. Bank saving as a proportion of total saving increases with an increase in income. Stokvels take up an equal proportion of total savings regardless of the income level. The use of other saving forms seems to only become popular with people in the top two income deciles of the population. For the bottom eighty percent 'other savings forms', range from between two and five percent of total savings. However for the richest ten percent of the sample, this figure rises to almost 13 percent of total savings. This indicates that once income has gone past a certain threshold, respondents are able to expand their savings portfolio to include "other" savings products.

3. The Determinants of Savings

Before making a formal statistical analysis of South African savers, a general hypothesis was made about what characteristics of an individual would increase the likelihood of them saving. The KMPS provided a wealth of information that needed to be whittled down to a savings-specific focus. The three categories of characteristics that were thought to influence savings were income and savings effects, demographic characteristics and types of formal employment.
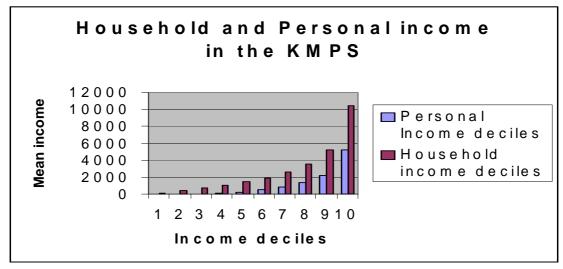

Figure 2

3.1 Income and savings of households and individuals

Savings are obviously expected to be a positive function of income. Yet the key question that must be addressed is whether savings is a function of individual income or of household income. This problem will become clearer in the analysis that follows. It is a variant of the problem which concerns all users of household income data in South Africa: i.e. to what extent income is shared and to what extent is it not. This applies directly to the way we conceptualise savings. In the KMPS, total household income could be measured in two ways. The first was to use the household survey question Q16 'How much income comes to the household from all sources in a typical month?' Alternatively one could aggregate all the individual level data pertaining to income in order to construct a household income variable. Skordis and Welch (2002) have shown that the aggregated variable is a better proxy for overall household income. Skordis and Welch constructed a *gross* personal income variable. For the purposes of this study it was deemed more appropriate to use net income as a determinant of savings. Thus a personal *net* income variable was created from the KMPS data. This and other STATA do files are shown in appendix A.

Respondents of the KMPS were asked to disclose various income sources. The amount of income that each adult received from these sources was summed to form an estimated individual income level. The first step was to determine the income levels of those people who participated in the labour force. Nattrass' labour market status definitions (which followed international labour force statistical standards) were used (Nattrass 2002: 14-16). Sources of income from earnings were categorised as follows, wage income, self-employment profit and casual work income. Two categories were created for the other forms of income: grant income and income from other sources.

Respondents who recorded a missing answer for any of the above categories were regarded as not receiving any income from that particular category. This was a key decision in constructing the personal income variable as it necessarily meant that only disclosed income was included. People may very well have had income from these sources but unless they disclosed the amount they received it was not considered for the analysis. The alternative would have been to drop all people who had recorded a missing answer for any income variable. This however would have resulted in a severe reduction in the sample size.

Table 2: Sources of Income

Variable	Obs	Mean	Std.	Min	Max
Wage income	848	2476	2452.686	25	24500
Profit from Self Employment	164	579.9951	1219.195	5	12000
Casual pay	167	592.1617	583.7912	7	3900
Grant income	327	490.1198	457.7609	1	5400
Gift income	506	335.3577	526.9495	5	6000
Investment income	43	243.807	292.0275	1	1000
Personal income	2630	1001.377	1841.983	0	24500
Positive personal Income	1726	1525.853	2090.512	1	24500

Wage income was measured as the total monthly income a respondent received through his or her wage employment. If the respondent had a second job this was also taken into account. This variable included total basic wages, productivity pay, profit share, bonus payments, piece rate payments and if received, a 13th cheque divided by twelve. If a respondent received a daily, weekly or fortnightly wage, this was converted into an estimated monthly wage. Eight hundred and forty eight people reported earning a positive wage income. The lowest monthly wage was R25 while the highest wage income was a definite outlier; a cleaner whose monthly wage was R800, yet who earned R108 000 a month working overtime at an hourly wage of R1200! After being checked out, nine outliers whose reported hourly overtime wage was greater than their total monthly wage were dropped from the sample. The mean positive wage income was R2 476 whereas the highest monthly wage income was R24 500.

Self-employment profit was measured as the net monthly non-wage income earnings of a respondent. Although 218 respondents classified themselves as being self-employed only 164 recorded a positive self-employment income. The mean self-employment income was R579.99 and the highest monthly self-employment income was R12 000. Interestingly there was not one observation among the self-employed who reported negative net earnings in the KMPS.

Casual work income was measured as the income a respondent earned from all casual work during the past month. Although there was no other alternative one should be cautious in using this casual work variable, as it is not a foolproof proxy for average monthly income over a longer period. Casual work is likely to vary from month to month and may have a strong seasonal component (e.g. most construction work occurs outside of the rainy season.)The earnings from casual work a respondent made in October of 2000 thus cannot be assured to be a standard measure of average casual monthly income. The mean casual wage

was R592 a month with the highest income earned from casual employment being R3 900.

The following types of grants were included in the grant income category: state old age pension; disability pension; veteran's pension; employer's pension; worker's compensation; state child support grant; private child maintenance grant; foster care grant and alimony from a divorced spouse. Income from the Unemployment Insurance Fund (UIF) was included in the grant income category, even though such income is available for a limited duration. Other income sources suffer from similar limitations. i.e. casual income and gift income could also be temporary.

The state pension was the most common form of state grant with 108 recipients. Eighty- six respondents reported receiving R540, the full value state pension at the time. The smallest reported state pension was R203 and the largest was R1000.

The most common form of private grant was reported from the recipients of private child maintenance income. The smallest sum under this category was R40 and the highest R1800. Interestingly, the state grant for child maintenance was the only source of reported income for almost 74% of the 230 people who reported getting grant income.

Income derived from financial investments or rents and gifts from friends or relatives were included under the category other incomes sources. Five hundred and six adults out of the sample indicated that they received some form of gift income and of these 383 said that they did not have any labour earnings. This is an important outcome as it shows that some money is transferred from those who are working to those who do not earn any money. Almost two thirds of the adult respondents who said they received gift income indicated that it was their only income source.

The five categories above; wage income, self -employment income, casual pay, grant income and other income were summed to form a total income variable (personalincome). One thousand seven hundred and twenty-six reported receiving a positive total income. The smallest total monthly income reported was R5 and the highest was R24 500. This personal income variable was then aggregated to form a household income variable (hhincome). A third variable was created to indicate the level of income of other people in the household (otherhhincome).

An interesting result arose when constructing the household income variable. Ninety-four respondents indicated that their personal savings was greater than

the aggregated household income variable. It must be remembered that the aggregated household income variable was created as an alternative to the household level question, 'How much income comes to the household from all sources in a typical month?', which was asked of one "knowledgeable adult". The alternative measure aggregated the disclosed personal incomes of household members. However this method is not without problems of its own. If individuals do not fully disclose their personal income, the aggregated household income may be smaller than the household income reported in the household questionnaire. Respondents tend either to overstate or understate their savings and incomes for a host of reasons. These may include fear of being seen as destitute or understating income for fear of the taxman (Wright & Mutesesira, 2001: 4-5). This incorrect disclosure of income and savings is a constant issue in survey analysis.

For the purposes of this study respondents were only dropped from the sample if their reported personal savings was greater than both the aggregated household income variable and their reported household income to the household questionnaire. The reported household income variable was used if the aggregated household savings was greater than aggregated household income, but less than the reported household income. Under these criteria 15 observations were dropped from the analysis.

3.2 Personal characteristics

Age, gender, race, education and household size fall under this category.

Age was expected to have a significant influence on whether or not an individual saved. life-cycle theory would suggest that people save in middle age in order to prepare for old age when they do not have an income source. This may not be the pattern in poor South African communities where there is substantial unemployment and the old-age pension provides a significant income source for the elderly.

Older people in such areas would have had more exposure to expenditure shocks over their life cycle, and thus would be better informed and have more of an incentive to save for the future. Age also reduces a person's future income generating lifespan and as such provides an incentive to save for the nearer future when one does not have an income source. Similarly as will be seen later, the cost of a burial is the biggest life-cycle shock for most poor households. As such, older people may have an incentive to save in order to reduce the cost to their household for their own burial when they die.

A female dummy variable was constructed to determine the influence of gender. In her 1998 study Buijs (1998; 62) argues that in an area with high unemployment, women are the primary care givers for their families and are forced to be more financially responsible as it is more difficult for them to escape their debt obligations. Men on the other hand do not have such strong familial ties and can move to other areas if their debts become too great. It would thus be expected that women are more likely to save than men.

There were two dominant racial groups in the KMPS; Coloured and African. Of the total sample 3483 people were African and 1462 were classified as being coloured. Thirty- three people fell under other racial categories. One might expect the cultural differences between different race groups to be reflected in their savings rates. Thus a dummy variable 'Africans' was constructed (African=1, non African =0).

Educated people are expected to be better informed about the merits of saving and the danger of getting into debt. Literacy and arithmetic skills would also provide basic 'money knowledge'. The KMPS asked what the highest level of education was that a respondent had passed. This data was then put into a new dummy variable, with 0 for those who had no education, 1 for those who had had a year of schooling, 2 for those who had had two years and so on until grade12. Another dummy variable for grade12 was created. It was of further interest to see whether there was a significant difference in the level of savings between those who had completed their high schooling and those who had not. A dummy variable gr12 was thus constructed.

Household size was expected to have a negative relationship with whether or not a person saved. Saving is defined as foregone consumption. Levels of consumption are likely to be greater as the number of dependants in a household increases thus reducing the accumulation of savings.

3.3 Types of formal employment

Wage employment, self-employment or casual employment provides a source of income of which a portion can be saved. Nattrass' broad labour market status variable was used in the analysis. (Nattrass, 2002, 14-18).The sample of the population that indicated that they had constant wage employment, casual employment in the last six months or were self-employed were considered income earners. Three dummy variables indicating whether respondents had positive income from any of these sources were constructed. The aim of creating these variables was to see whether or not those that had a relatively stable source of source of income were predicted to have higher savings levels than those who did not have such an income source.

4. Modelling Savings and the Characteristics of Savers

4.1 OLS regression

An OLS regression was run with the level of personal savings as the dependant variable and the various variables listed above as the independent variables. As expected the level of personal income had a strongly significant relationship with the level of savings. The broad model predicted a marginal propensity to save of 0.03369 for the KMPS respondents.

The Adjusted R^2 for the broad model was 0.1472. As expected, household size proved to have a negative yet insignificant relationship with the level of savings (co-efficient: -3.6187) whereas people who were self employed (co-efficient: 41.9184) or who had wage employment (co-efficient: 75.559) were predicted to save more than those who were unemployed. The model predicted that gender had an insignificant relationship with the level of personal savings, even though it was deemed significant when regressed against personal savings in a model that only included race, gender, household size and education. Age proved to be significant in the broad model. This indicates that the influence of personal income and the savings and income of other household members dominates that of gender in determining the level of savings. Race proved significant in the broad model, which predicted that Africans were expected to save R59.4153 more than non-Africans.

The model predicted that the level of savings of other household members (co-efficient = 0.124453) had a significant relationship with the level of personal savings. The high co-efficient for the savings supports the hypothesis that a savings culture exists within households that do save.

However there is a problem with this OLS regression. It was suspected that the goodness of fit was inflated because of "reflection effects" present in the household variables[1]. This meant that household size and the savings and income of other household members were similar for members of the same household. In any particular household, the household members would share these same household variables.

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[1] Martin Wittenberg must be thanked for identifying this problem in dealing with household data.

Imagine a household with five household members: X, Y, Q, R, & S. The savings and income of other household members for person X would prove to be closely connected to that of person Y as they would both include persons Q, R and S's income and savings. Therefore these aggregated variables would have a substantial degree of overlap. This causes a continuous loop in the regression and inflates the predicted influence that these household variables have on the dependent variable (level of personal savings).

Table 3: Other Household Savings

Household 1	*Savings of other household members*
Member X	(Savings of Y) + (Savings of Q) + (Savings of R) + (Savings of S)
Member Y	(Savings of X) + (Savings of Q) + (Savings of R) + (Savings of S)
Member Q	(Savings of X) + (Savings of Y) + (Savings of R) + (Savings of S)
Member R	(Savings of X) + (Savings of Y) + (Savings of Q) + (Savings of S)
Member S	(Savings of X) + (Savings of Y) + (Savings of Q) + (Savings of R)

An attempt was made to control for this by only regressing the personal savings and the income and savings of other household members for one member of each household. The results of this controlled regression can be seen below. As expected the R^2 of the controlled regression was smaller than that of the uncontrolled regression.

Our fears were confirmed. The controlled model proved that the savings of other household members was indeed inflated because of these "reflection effects". When restricted to just one member per household, the savings of other household members was an insignificant determinant of the level of personal savings. Thus the household variables could not be used in the final regression. A further model that discarded these household variables was thus constructed. The only substantial difference between this model and the broad model was that the variable FEMALE proved to be significant in the model that did not include the household effects. In this model females were predicted to save R24.22 less than males.

Table 4: OLS regression
Dependent variable = personal savings

	Income effects	Pb>|t|	Demo-graphics	Pb>|t|	Employ-ment	Pb>|t|	Broad Model	Pb>|t|	Controlled Model Pcode==1	Pb>|t|	w/o hh effects	Pb>|t|
Personal Income	0.0490349	0					0.0336908	0	0.0323071	0	0.0349875	0
Other household Income	-0.00772	0					-0.0033036	0.14	0.0030234	0.565		
Other household savings	0.1323051	0					0.1244535	0	0.0418885	0.08		
Household size			-5.043929	0.026			-3.618752	0.089	-3.854372	0.376		
Age			1.876591	0			0.9807278	0.037	0.068298	0.936	0.8683597	0.071
Female			-53.27708	0			-18.60566	0.097	-38.08255	0.049	-24.22747	0.034
African			45.13919	0			59.41532	0	110.5196	0	70.75517	0
Education			9.162133	0.002			3.642336	0.178	4.896217	0.255	5.005428	0.071
Grade 12			51.0042	0.006			16.54419	0.339	24.08326	0.463	22.36184	0.205
Wage - employed					131.4825	0	55.62366	0	75.55903	0.002	48.09274	0.001
Self-employed					126.6826	0	78.63901	0	41.91847	0.191	91.34918	0
Casual work					9.396078	0.798	-16.08327	0.636	-32.26773	0.551	-25.61801	0.461
Grant only							6.150411	0.708	3.361569	0.9	-1.942196	0.904
Constant	36.77554	0	-31.98853	0.413	38.3918	0	-61.55769	0.096	-59.07229	0.353	-77.30684	0.025
R2	0.1334		0.0304		0.047		0.1519		0.1406		0.1092	
Adjusted R2	0.1334		0.0309		0.0459		0.1472		0.1286		0.1054	
Pb>F	0		0		0		0		0		0	
Root MSE	272.12		279.4		271		256.52		279.88		262.73	
Obs	2630		2335		2644		2322		946		2322	

4.2 Logistic model

The OLS seemed to be a good indicator of what determined individual savings levels. However it could not address a key question: What determines whether an individual saves at all? It is unsurprising that the model predicts that a respondent would need a high level of income to have a high level of savings. However, as can be seen in Figure 3, many (i.e. 732) respondents in the KMPS had a positive income and did not save at all. The OLS could not account for these non-savers that appeared in the higher income categories. Further investigation was needed to see what characteristics determined what made a particular respondent save at all. To do this a Logistic model was constructed.
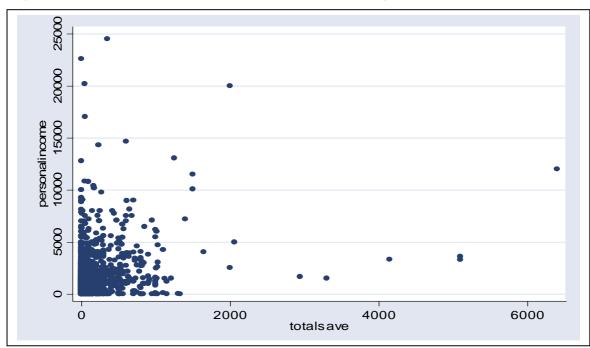
Figure 3: Scatter plot between personal savings and personal income

A binary variable 'saver' was constructed with a value of 1 if a person had positive total savings. A Logistic model was then used to see whether the independent variables listed earlier could determine the probability of a person saving. In order to be consistent with the earlier OLS model, a controlled model was constructed to see whether reflection effects made the aggregated household variables insignificant influences on the decision to save. Again the controlled model proved that this was indeed the case. However this meant that both the OLS model and the Logistic model could not support the hypothesis that the 238 people who reported having no personal income yet had positive savings were taking money out of the household income pool.

Interestingly education and the gr12 variables proved to be insignificants determinants of the likelihood that a person saved. A further logistic model was constructed that left out both the aggregated household variables and the education variables.

In the model that excluded the household variables personal income proved to be significant as expected. However, the marginal effects that changes in personal income had on the probability that someone would save was quite small. The model predicted that if all other variables were kept constant at their current levels, the odds of a person saving would increase by 2% with a R100 increase in personal income. This is a powerful result. Given that the average personal income of the KMPS respondents was just over R1000, a large increase in income did not have a particularly great influence on the decision to save. This shows the pressures that the KMPS community is under to consume. Any additional increase in income does not substantially alter one's decision to save.

Age, gender and income earner categories were also strongly significant. The model predicted that a 10- year increase in age would increase the odds of a person saving by 33%. The model predicted that the odds of females saving were 41% higher than that of males saving. Africans were predicted to be 35% more likely to save than non-Africans.

The OLS model predicted that females were predicted to save R22.42 less than males. However the Logistic model predicted that the odds of females saving are 41% higher than that of males. This would indicate that income levels, which are influenced by gender factors, determine the levels of savings. Women, when given the chance do save. However their lower income levels mean that they save less than men.

The odds of saving for households whose only source of income came from government and private grants (grant only) were predicted to be 41% lower than those households who had income from other sources. Having formal employment was by far the greatest determinant of the likelihood that a person saved. The wage employed, self- employed and casual workers were predicted to be 148% ,160% and 70% higher odds of saving respectively than those who had not had been employed under these categories in the past six months.

Table 5: Logistic regression A: Dependent variable: Saver=1 if personal savings > 0

Saver	Income effects (odds ratio)	P>z	Personal characteristics (odds ratio)	P>z	Employment (odds ratio)	P>z	Broad Model (odds ratio)	P>z	Controlled Model (odds ratio)	P>z	Without hh effects (odds ratio)	P>z	Without hh effects education gr12 (odds ratio)	P>z
Personal Income	1.0004	0					1.0002	0	1.0002	0	1.0002	0	1.0003	0
Other household Income	0.9999	0.016					0.9999	0.129	1	0.918				
Other household savings	1.0002	0.017					1.0003	0.013	1	0.649				
Household size			0.9659	0.039			0.9832	0.351	1.0402	0.25				
Age			1.0357	0			1.0327	0	1.0159	0.018	1.033	0	1.0383	0
Female			1.0333	0.708			1.4458	0	1.7018	0.001	1.4112	0	1.4278	0
African			1.056	0.559			1.2548	0.034	1.6326	0.006	1.3461	0.003	1.312	0.006
Education			1.0417	0.057			0.9988	0.958	1.011	0.742	1.0022	0.926		
Grade 12			0.9993	0.996			0.8728	0.361	0.8668	0.585	0.8737	0.362		
Wage - employed					4.1828	0	2.5052	0	1.9799	0.001	2.4844	0	2.6067	0
Self-employed					3.2839	0	2.5367	0	1.4534	0.122	2.6027	0	2.591	0
Casual work					1.8794	0.013	1.5513	0.112	1.88	0.125	1.5479	0.111	1.7052	0.044
Grant only							0.5788	0	0.5051	0.001	0.5984	0	0.5837	0
Pseudo R2	0.0705		0.0311		0.0795		0.1243		0.1004		0.1215		0.1371	
Pb>chi2	0		0		0		0		0		0		0	
Obs	2605		2311		2618		2299		930		2299		2590	

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By using a combination of OLS and Logistic regression, the analysis was able to shed light on the determinants of the decision to save and the level of that savings. The next step in the analysis was to get a more informed understanding of the three main savings categories, burial societies, banks and stokvels. By analysing whether there were any obvious differences in the characteristics of the people who saved in these categories, a better understanding of what determined whether or not a person saved and why they chose to save in a particular way, could be found.

5.   Burial Societies

In their seminal paper on the subject, Thompson and Posel argue that people join burial societies in order to ensure that they have sufficient funds to pay for an appropriate funeral for deceased family members (2002:2). Roth (2000) argued that the households surveyed in his paper spent more than 15 times their mean monthly income on a funeral. The cost of a funeral is clearly one of the biggest life-cycle expenditure shocks facing poor people in South Africa.

 In the South African context, the provision of a funeral of a relative is often an indication of social status. Often the funeral ceremony, the coffin and the catering for the funeral guests costs more than what the bereaved family can afford (Verhoef.2002: 22). Membership of a burial society provides sufficient funds to pay for a socially acceptable funeral. Porteous estimates that 7.4 million South African adults are members of a burial society (Porteous.2003: 5). It must be noted that the motive behind contributing to a burial society saving scheme is purely a way of buffeting the impact of a life-cycle shock, namely the death of a family member. Saving in a burial society is in no way meant to be a means of accumulating capital so as to pay for a new capital investment or as a means of bettering one's financial position.

Table 6: Statistics of KMPS burial society savers

Personal income	R1456.81
Household income	R2987.60
Income of other household members	R1543.44
Age	40
Gender (percentage female)	57.75%
Race (percentage African)	63.4%
Burial Society as only savings form	63.81%

The KMPS supports Porteous' findings in that membership of a burial society was by far the most popular form of savings reported in the survey. Almost 83% of all savers indicated that they made a contribution to a burial society. The mean age of members of burial society savers were almost five years older than the mean age of the KMPS respondents as a whole. Almost 64% of burial society savers indicated that their burial society contribution was their only form of savings. Race, personal income, household income and the income of other household members of burial society savers were pretty close to the means of the entire KMPS sampled.

Burial society savers by income decile.

Figure 4

Although burial society saving *level*s as a percentage of total savings levels fell as income rose (as illustrated by figure 3), the percentage of burial s*avers* as a percentage of total burial savers was greater in the higher income deciles than for the poorer deciles of the population. This indicates a fascinating trend in the savings of the KMPS data. More rich people save in burial societies than poor people. The common assumption that burial societies are for poor people only, is clearly false. However rich people have more diversified savings portfolios: i.e. they supplement their burial society savings with savings in a stokvel, bank or other savings schemes.

Thompson and Posel (2002) define three kinds of burial societies: traditional, hybrid and modern. A traditional burial society has a similar structure to that of the stokvel. Members put money into a pool, when somebody dies funds is taken from that pool to pay for the funeral. Like the stokvels there is a reciprocal relationship prevalent in such a framework, burial society members are not only a source of finance but they also attend the funerals and provide social support to the bereaved by preparing food and erecting tents etc (Roth, 2002:9-13).

In a "hybrid" burial society this social element is equally important. Similarly the burial society is also seen as a social club. Members have regular meetings and wear a burial society uniform at both the meetings and the funerals. However in a hybrid burial society, rather than pooling funds, members contribute to a common formal financial insurance scheme where payouts are beyond the discretionary control of the members (Thompson and Posel 2002, 3). Modern burial societies are focused on a relatively young age group (twenty and thirty year olds) and do not view the social side of the burial society with the same importance. Members make individual contributions to a formal insurance fund, which is paid out at time of death.

Payouts from a burial society come in two forms. Most societies pay out a fixed predetermined sum after the death of a loved one. The sum paid out often depends on the relationship between the burial society member and the deceased. A higher sum will be paid for the death of a spouse or a child as opposed to the payout for a cousin or extended family member. (Thompson Posel, 2002:4).

Another form of burial society pays funeral costs according to the contribution that the member has paid to the burial societies. (Thompson and Posel, 5). These burial societies act similarly to a stokvel. Each month, members pool their fixed contributions, which are put into one specific member's account and are held either in a bank or by a leading member in the society. Members are only able to access these funds in order to pay for the funeral. The risk of such a scheme is that a member's payout is dependant on their accumulated contributions. If they have only been members for a short time, the payout that a member can claim may very well be insufficient to pay for the funeral.

6. Stokvels

There is relatively little literature on informal savings in South Africa. In the literature that exists (Verhoef 2002, Buijs 1998) the prominence of stokvels has been relatively well documented. A stokvel is a form of a rotating savings and credit association (ROSCA). Verhoef argues that stokvels are a characteristic of poor urban South Africa. Residents in poor areas may have a volatile income flow and thus form these social saving networks in order to guarantee some stability in their income (Verhoef 2002. 10). Saving and membership of a savings scheme such as a stokvel provides savers with a measure of economic security. Members of a stokvel contribute a predetermined amount to the stokvel on a regular basis for a period of time. At the end of the period, total savings are cashed up and shared among the members of the stokvel.

Table 7: Statistics of KMPS Stokvel savers

	Mean
Personal income	R1497.15
Household income	R2721.08
Income of other household members	R1248.71
Age	36
Gender (percentage female)	69.70%
Race (percentage African)	94.6%
Stokvel as only savings form (%)	22%

Two hundred and forty one people reported saving in a stokvel. Only 22% of this number indicated that stokvels were their only savings form. Interestingly, race was the only striking feature of stokvel savers. Almost 95% of stokvel savers were African. This would indicate that stokvels form part of the social fabric of the African community in the KMPS area. The relatively low percentage of people who only saved in stokvels indicates that savers supplement their stokvel savings with alternative savings forms. This would be consistent with the findings of graph 1 that indicated that stokvel savings as a proportion of total personal savings remained relatively constant across income levels, even though there were more stokvel savers in higher income deciles. Thus unlike burial society members who only supplemented their burial society savings with alternative savings when they got richer, stokvel savers supplement their stokvel savings regardless of their level of income.
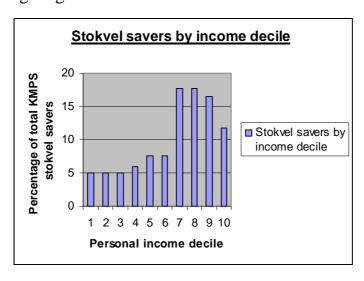

Figure 5

Rather than earning interest from a bank, some stokvels act as a communal bank themselves by lending money out to members and member's friends. By doing

this stokvel members are able to gain a higher return than what they would get from a bank. However they do face the greater risk of borrowers defaulting on their loans. In times of emergencies, members can borrow from the pooled funds at an interest rate lower than that which they can get elsewhere. Membership of such a scheme enables savers to earn interest by lending money out to its members or people known to its members. In this case the risk of default is small as the borrowers' credit risk is known to the members of the stokvels. Thus although members do not save money in a bank they can accrue interest (Moyo *et al,* 2002:11). Membership of a stokvel may also provide sufficient money for an 'opportunity' expenditure whereby members gain access to enough capital for an income generating investment like a spaza shop or shebeen, thus hopefully reducing their exposure to future expenditure shocks (Verhoef 2002; 11).

In sum: members of stokvels are able to take out loans from the savings of the stokvel at a lower interest rate than that which they would be able to get at a bank. There are two reasons for the lower interest rates; the other members of the stokvel know the borrower and thus the risk premium on the borrower defaulting on the debt is smaller, and the operating costs of a stokvel are far smaller than that of a commercial bank. Banks recuperate their operating costs through the interest rate which pushes up the cost to borrowers (de Kock 1998). Borrowers from the stokvels pay for the interest lost on the savings amount as well as some small premium. Usually the amount needed to borrow is smaller than that which they can get from a bank loan (i.e. R100).

Amounts smaller than R10 000 are exempt from the minimum interests rates stipulated by the Usury Act (Meagher and Wilkinson 2001). This means that people borrowing small amounts of money from microlenders face high interest charges. Stokvels provide a more affordable alternative than microlenders for borrowers who need access to a relatively small sum of money at a lower interest rate. Although microlenders who have become members of the Microfinance Regulatory Council (MFRC) have a cap of 26% per annum on loans of less than R10 000, many microlenders in the poor communities are not regulated by the MFRC and have no restriction on the interest that they can charge. Members of stokvels do not charge excessive interest, as they know they will also be subject to similar interest rate requirements when the time comes for them to borrow money.

Stokvels are community based. There is communal peer pressure for members to adhere to their savings obligations, and defaulters are known throughout the community (Moyo *et al*, 2002. 11). Each stokvel has a secretary or principal who is in charge of collecting the money and keeping records of who has borrowed money and when it is due (Buijs 1998; 59). Stokvels have an incentive

to remain small in order to reduce the risk of debt default and in order for members to keep track of where their capital has been allocated.

The longer the borrower has been a member of the scheme, the larger is the sum that they can borrow. Members are able to borrow at a lower interest rate than non-members. There is an incentive to maintain their repayments as those members who are deemed credit- worthy would have access to bigger loans in the future (Verhoef 2002.12). The debtor usually has between one and three months in which to pay back the money. Stokvels are based on a reciprocal saving relationship. Members pay their periodic dues as this allows them to be part of the saving cycle. Default dismisses them from the stokvel and stops them from receiving future pooled lump sums (Verhoef, 2002: 20).

Current members can only accept new members through nomination. Because members are known to each other, the risk assessment and management of the stokvel's savings is that much easier and cheaper than it would be for a formal commercial bank to provide. Membership of a stokvel provides an incentive for people to save as they can get a real return from their money, which they would not be able to generate individually.

Some stokvels do not pool savings over a period of time in order to earn interest. Rather, members contribute a fixed minimum amount to a fund every period. This pool of money is then given to one member for that particular period. Each member then takes it in turn to receive the pooled money (Buijs, 1998: 55 -56). For example in some stokvels, members contribute R50 to the scheme each month. If there are 12 members in the stokvel, each member can thus expect to receive R600 during one month of the year. The advantage of such a scheme is that when it is their turn to receive the pooled money members can buy goods that they would not normally be able to afford with their usual monthly income.

This arrangement goes against the predictions of economic theory. People who participate in this form of stokvel get exactly the same payout they would get if they put a fixed sum of money under their mattress each month (and without the risk of losing savings if the stokvel arrangement fails). Yet stokvels are seen to be a relatively popular savings form at all levels of income. Perhaps the value of a stokvel is that it exposes individuals to a social pressure than ensures that they save rather than spend. In Moyo *et al* (2002) one respondent said,' "*Its always easier to save as a group, if on my own I would just blow the money or would sometimes not feel obliged to put aside something*". Thus peer pressure is probably an integral component of the popularity of stokvels.

Gooi-goois are saving clubs in the Western Cape with a similar structure to that mentioned above. Members hold parties every period, usually monthly, in which

they pool their money. This pool is allocated to a particular member each period. However there is no predetermined amount that the members have to contribute. A record is kept of each member's contribution to the gooi-gooi. When it is a particular member's turn to receive the pool, their contribution history is read out to the other members who pay into the pool that he or she is to claim. This is an interesting reciprocal lending relationship whereby each member has an incentive to contribute generously to the scheme, as he or she will want the others to do the same when it is his or her turn to claim the pool (de Kock, 1998).

This review shows that there are different kinds of stokvel arrangements. Unfortunately the KMP survey did not ask sufficiently detailed questions to enable researchers to distinguish between the different kinds. The data on stokvels is thus an aggregate figure which includes all stokvels and gooi-goois in the same variable.
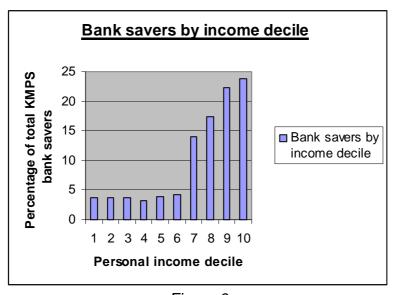
7. Bank Savers

Figure 6

Four large banking groups dominate the South African banking industry: First Rand Limited, ABSA, Stanbic and Nedcor. The lack of competition in the industry has been blamed by some commentators for the slow roll out of banking services to the poor. (Meagher and Wilkinson 2001). In the past, the provision of banking services has been focused on the higher income (largely) white minority. They have benefited from a broad ATM network and a wide range of banking products that has made banking easy to access and efficient (Paulson *et al*, 2000:4).

Table 8: Statistics of KMPS bank savers

	Mean
Personal income	R2225.38
Household income	R4137.73
Income of other household members	R3103.1
Age	35
Gender (percentage female)	45%
Race (percentage 'African')	76%
Banks as only savings form	29.27%

Three hundred and eighty people in the KMPS indicated having positive banks savings. Figure 5 shows that within the KMPS, the majority of the bank savers came from the higher income deciles. Bank savers were predominantly male which would reconfirm the earlier hypothesis that gender differences are reflected in income levels.

The most substantial infiltration of the banking industry into the lower income sector of the South African economy has been through the provision of payroll services to South African companies. This has been relatively profitable as firms have preferred to move away from paying cash to their workers because of the high crime rate and the administrative burden (ibid 5). But as the economies of poorer communities are cash based, this service does not extend to them and they are not viable markets for the South African banks.

The South African banking sector has been heavily criticised for not providing the poor with sufficient saving facilities. Indeed the high transaction costs associated with banking services have been viewed by the left as a deliberate way of channelling the poor out of the formal economy (Cosatu, 1999: 4; 2002: 3).

The South African Congress of Trade Unions and the South African Communist Party have been campaigning and lobbying government, to ensure that the poor are provided with adequate banking services, affordable credit for low cost housing and to put structures in place for small scale South African banks. These organisations argue that because the poor are not being provided with regulated financial services, they are being driven to unregulated micro lenders who trap them into poverty. A further criticism has been that while banks have focused their resources on the high-end upper income segment of the market they have largely ignored the poor. In their submission to the parliamentary hearings on bank charges, microlending and the Usury Act, Cosatu complained that South

African banks had opened more branches offshore than they had in South African townships (Cosatu, 1999:21).

South African banks require relatively high deposits to open a bank account and those that do offer banking facilities to poor people charge higher transaction fees. Banks, of course, make their money through their control of the deposits they hold, thus lower deposit levels are relatively more expensive to administer than higher ones. They compensate for the lower profit margins of small deposits by charging relatively higher transaction fees. Administration costs are also higher as the majority of poor customers transactions are cash based and cannot be dealt with electronically. A further criticism of the banking system has been the difference between the bank's lending rate and their deposit rate.

Standard Bank has tried to overcome the low deposit rates by offering bonuses and competitions to E plan account holders who hold more than R250 in their account for six months or longer. Yet still the transaction fees for the E plan account are substantially higher than what they charge for most of their other accounts. Similarly there is a clear contrast between the rates Nedbank charges for account holders with more than R3000 in their account and those with less than R3000. Taking into account that the lowest 60% percent of the households in the KMPS earned less than R3025 a month, the complaint that the banks are ignoring the poor seems to have some merit.

8. Savers and savings: A conclusion

Because burial society contributions were such a dominant savings form, it was of interest to see whether Logistic models could confirm that the characteristics of people who saved in burial societies were different to those who saved in the other savings forms. As discussed earlier contributions to a burial society is a means of insuring against a predictable life-cycle shock (i.e. death). Other forms of savings can be seen as foregone consumption today in order to have greater consumption tomorrow, in lay-man terms an 'investment'.

Two more binary dependant variables were constructed, 'burial society saver' (burial society saver =1 if burial society savings >0) and 'investment saver' (investment saver =1 if personal savings – burial society savings >0). Each of these variables was run against various independent variables in the same categories that were deemed important in the Logistic model reported earlier. There was no need to run a controlled Logistic model as the household variables that were proven to be influenced by neighbourhood effects, were discarded when these two additional Logistic models were constructed. An additional

variable, burial society member was added to the 'investment saver' Logistic model. This was done in order to see whether respondents who were burial society members were more likely to have investment savings than those who did not save in a burial society.

The results of the two additional Logistic models can also be seen on pages 40-41. These models indicated that there were definite differences between the characteristics of those who saved in burial societies and of those who saved in stokvels banks or other 'investment' savings forms.

The Pseudo R^2s were the most obvious indication of this difference. Using this as an indication of goodness of fit, the model for the burial society proved to be significantly poorer than that for the investment savings. This meant that the influence of those who saved in burial societies weakened the overall personal savings Logistic model. Gender and age were insignificant determinants of the probability that a person had investment savings or not. Years of education were a significant factor in determining the probability that a respondent had investment savings. The model predicted that the odds of a person having investment savings increased by 10% for every extra year of education that they received. Africans were predicted to be 2.43 higher odds of having investment savings than non-Africans.

Table 9: Logistic regression B
Dependent variable: burial society saver =1 if burial society savings >0

Burial Society Saver	Personal characteristics (odds ratio)	P>z	Employment (odds ratio)	P>z	Without hh effects (odds ratio)	P>z	w/o hh effects African & education (odds ratio)	P>z
Personal Income					1.0001	0	1.0001	0
Other household Income								
Other household savings								
Household size								
Age	1.040071	0			1.0371	0	1.0425	0
Female	1.034381	0.703			1.319	0.004	1.3085	0.003
African	0.9375656	0.494			1.0466	0.646		
Education	1.013403	0.537			0.9803	0.376		
Grade 12	0.6900252	0.01			0.5329	0.001	0.5916	0
Wage - employed			2.8177	0	2.0615	0	2.1763	0
Self-employed			2.6088	0	2.0689	0	2.1787	0
Casual work			1.971	0.008	1.822	0.03	1.9152	0.015
Burial Society member								
Grant only					0.7256	0.021	0.7172	0.012
Pseudo R2	0.0507		0.044		0.0989		0.1135	
Pb>chi2	0		0		0		0	
Obs	2355		2644		2322		2630	

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Table 10: Logistic regression C
Dependent Variable: Investment Saver =1 if personal savings – burial society savings >0

Investment saver	Personal characteristics (odds ratio)	P>z	Employment (odds ratio)	P>z	Without hh effects (odds ratio)	P>z	Without hh effects age female & gr12 (odds ratio)	P>z
Personal Income					1.0002	0	1.0002	0
Other household Income								
Other household savings								
Household size	0.9403	0.004						
Age	1.016487	0			0.9948	0.34		
Female	0.7758968	0.013			1.064	0.602		
African	2.163193	0			3.43	0	3.4604	0
Education	1.145915	0			1.1055	0.001	1.1516	0
Grade 12	1.325238	0.069			1.3328	0.1		
Wage - employed			5.9009	0	3.3733	0	3.3183	0
Self-employed			3.8988	0	3.0638	0	3.051	0
Casual work			0.8979	0.805	0.5799	0.265	0.5665	0.25
Burial Society member					3.0683	0	2.963	0
Grant only					0.9064	0.629	0.8846	0.54
Pseudo R2	0.0415			0.109	0.2002		0.1986	
Pb>chi2	0			0	0		0	
Obs	2355			2644	2322		2322	

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Most interesting was the influence that savings in burial societies had on the probability that one saved in alternative savings forms. Being a member of a burial society had a strong positive relationship on the likelihood that one had savings in alternative forms. The model predicts that the odds of burial society members having investment savings were almost two times greater. This finding backs up earlier inferences that respondents to the KMPS saved in burial societies first and foremost. Only after they had saved in a burial society did they save in alternative savings forms. This hypothesis would explain why burial society savings take up a greater proportion of total savings for people in the lower income deciles of the population and why bank savings as a proportion of total savings rose as income increased.

Although the model was poorer than the other two, the Logistic model for burial savers had some key implications. As expected, age was a significant variable. Those that had completed their secondary schooling were expected to be less likely to save in a burial society. This was seen to indicate that a more sophisticated 'monetary' knowledge may have deterred people from savings in a burial society. The model predicted that having casual work was an insignificant determinant on the decision to have investment savings. Yet those that had casual work were predicted to have 80% higher odds of saving in burial societies than those who were not formally employed.

The OLS model and the three Logistic models could not support the hypothesis that the 238 people who reported having no personal income yet had positive savings were taking money out of the household income pool. Personal income remained a significant determinant of both the decision to save at all and the level of savings. However, other personal characteristics such as race or gender and the sources of formal employment had a far stronger influence on the probability that one saved than the level of personal income. The Logistical models proved that personal income had a far stronger relationship with the levels of savings (as indicated by the OLS model) rather than the decision to save at all.

By constructing the two additional Logistic models a far clearer understanding of the determinants of savings in the Khayelitsha and Mitchells Plain could be reached. A key step in clarifying the issue of savings of the poor was realising that burial societies and other savings forms serve different functions in the society.

Analysing the savings rates and characteristics of savers in Khayelitsha and Mitchells Plain proved to be a complicated process that requires more in depth investigation. The role that stokvels and burial societies have in forming the social structure of poor communities deserves closer scrutiny. Ordinary

economic theories about savings fail to explain fully why poor urban South Africans choose to save in the manner that they do.

Even in circumstances of unemployment and low personal income levels, respondents to the KMPS do save albeit in small amounts. Reciprocal saving and lending arrangements and the sharing of household income are all means of smoothing out life-cycle shocks for individuals who have no other way of preparing for these events, which they could not afford to deal with on their own. Formal saving methods like banks are only accessible to the well off, however as this study indicates the poor work within these constraints to find ways to save. Given the substantial body of literature on the South African poor, it is surprising that so little has been written on the savings behaviour of low-income people. Poor South Africans are surviving life-cycle shocks under harsh economic circumstances. Pure economic theory may be too narrow to explain fully the methods and motivations behind the savings of the South African poor. A broader perspective that brings in other social sciences may be the only way that we can find the answers that we are looking for.

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Appendix A: Stata do Files:

/* Ross personal income */

#delimit;

*/Extra pay:/*
gen bonuspay =. ;
gen extracheque=. ;
replace extracheque=(e18_1_2/12);
replace extracheque=0 if (e18_1_2)==.;

gen pieceratepay=. ;
replace pieceratepay= e18_2_2;
replace pieceratepay= 0 if e18_2_2 ==. ;

gen profitshare=. ;
replace profitshare= e18_3_2;
replace profitshare=0 if e18_3_2 ==. ;

replace bonuspay= e18_4_2;
replace bonuspay= 0 if e18_4_2==. ;

gen productivitypay=. ;
replace productivitypay= e18_5_2;
replace productivitypay= 0 if e18_5_2 ==. ;

gen extrapay=. ;
replace extrapay= productivitypay + profitshare+ pieceratepay +
extracheque + bonuspay;

***_Extra Pay 2*/_**
#delimit;
gen bonuspay2 = . ;
gen extracheque2=. ;
replace extracheque2=(e45_1_2/12);
replace extracheque2=0 if e45_1_2==. ;

gen pieceratepay2=. ;
replace pieceratepay2= e45_2_2;
replace pieceratepay2= 0 if e45_2_2 ==. ;

```
gen profitshare2=. ;
replace profitshare2= e45_3_2;
replace profitshare2=0 if e45_3_2 ==. ;


replace bonuspay2= e45_4_2;
replace bonuspay2= 0 if e45_4_2==. ;



gen productivitypay2=. ;
replace productivitypay2= e45_5_2;
replace productivitypay2= 0 if e45_5_2 ==. ;

gen extrapay2=. ;
replace extrapay2= productivitypay2 + profitshare2 + pieceratepay2 +
extracheque2 + bonuspay2;

gen totalextrapay = .;
replace totalextrapay= extrapay+extrapay2;

replace totalextrapay =. if e9< e16;
replace totalextrapay =. if e36<e43;
replace totalextrapay =. if e43>1750 | e16>1750;
```

/*Self employment profit*/

```
gen selfprofit=. ;
replace selfprofit = g13_8;
replace selfprofit = 0 if g13_8 ==. ;
```

/*Casualpay*/

```
/* Survey only considers income of past month - not a good proxy for
average monthly income*/
gen casualpay=. ;
replace casualpay=. if casualpay==3900;

replace casualpay= i15 ;
replace casualpay=0 if i15==0 ;
replace casualpay=0 if i15==. ;

gen casualworker=.;
replace casualworker=0 if casualpay==0;
```

```
replace casualwork=1 if casualpay>0;
label define casualwork 1"positive casual work income" 0"no reported
casual work income";
label values casualwork casualwork;

gen giftincome=. ;
replace giftincome = (l15_1_1+l15_2_1+ l15_3_1) ;
replace giftincome = 0 if (l15_1_1+l15_2_1+ l15_3_1)==. ;

gen investmentincome=. ;
replace investmentincome= ( l16_1_1 + l16_2_1 + l16_3_1) ;
replace investmentincome=0 if ( l16_1_1 + l16_2_1 + l16_3_1)==. ;
```

/*Grantincome*/

```
gen statepension =.;
replace statepension= l13_1_1;
replace statepension = 0 if l13_1_1 ==. | l13_1_1 ==0 ;

gen disability=. ;
replace disability= l13_2_1 if l13_2_2==3|l13_2_2==. ;
replace disability= 0 if l13_2_1==. | l13_2_1==0 ;

gen vetpension=. ;
replace vetpension= l13_3_1 if l13_3_2==3| l13_3_2==.;
replace vetpension= 0 if l13_3_1==. | l13_3_1==0 ;

gen employerpension=. ;
replace employerpension= l13_4_1 if l13_4_2 ==3| l13_4_2==.;
replace employerpension= (l13_4_1/2) if l13_4_2 ==4;
replace employerpension= 0 if l13_4_1==.  |l13_4_1==0 ;

gen workercompensation=. ;
replace workercompensation= l13_5_1 if l13_5_2==3 | l13_5_2==.;
replace workercompensation= (l13_5_1/2) if l13_5_2==4;
replace workercompensation= 0 if l13_5_1==0 | l13_5_1==. ;

gen statechildsupport=. ;
replace statechildsupport= l13_7_1 if l13_7_2 ==3| l13_7_2==.;
replace statechildsupport= (l13_7_1/2) if l13_7_2 ==4;
replace statechildsupport= 0 if l13_7_1 ==. | l13_7_1==0;
```

```
gen privatechildmaintenance=. ;
replace privatechildmaintenance= l13_8_1 if l13_8_2 ==3| l13_8_2==.;
replace privatechildmaintenance= (l13_8_1/2) if l13_8_2 ==4;
replace privatechildmaintenance= 0 if l13_8_1==. | l13_8_1==0 ;

gen fostercare=. ;
replace fostercare= l13_9_1 if l13_9_2 ==3|l13_9_2==.;
replace fostercare= (l13_9_1/2) if l13_9_2 ==4;
replace fostercare=0 if l13_9_1 ==. | l13_9_1==0;

gen alimony=. ;
replace alimony= l13_10_1 if l13_10_2==3|l13_10_2==.;
replace alimony= (l13_10_1/2) if l13_10_2==4;
replace alimony= 0 if l13_10_1==. | l13_10_1==0;

gen UIF=.;
replace UIF = l13_6_1 if l13_6_2 ==3| l13_6_2==.;
replace UIF = (l13_6_1/2) if l13_6_2==4;
replace UIF = 0 if l13_6_1==. | l13_6_1==0;

generate float grantincome= statepension +disability +vetpension
+employerpension+ workercompensation
+statechildsupport+ privatechildmaintenance +fostercare +alimony + UIF
;

gen allgrant=0;
replace allgrant=1 if statepension>0;
replace allgrant=2 if disability>0;
replace allgrant=3 if vetpension>0;
replace allgrant=4 if statechildsupport>0;
replace allgrant=5 if fostercare>0;
replace allgrant=6 if workercompensation>0;
replace allgrant=7 if employerpension>0;
replace allgrant=8 if privatechildmaintenance>0;
replace allgrant=9 if alimony>0;

label define allgrant 1"state pension" 2"disability" 3 "veterans pension"4
"state child support grant" 5 " foster care grant" 6"workers compensation"
7" employer's pension"8"private child maintenance" 9 "alimony";
label values allgrant allgrant;

replace grantincome=. if grantincome==29000;
```

```
replace grantincome=. if grantincome==18540;



/* Basicwages*/
gen basicwage1 =. ;
replace basicwage1 = e9 if e8==4;
replace basicwage1= e9*2 if e8==3;
replace basicwage1=e9*4 if e8==2;
replace basicwage1= e9*20 if e8==1;
replace basicwage1= 0 if e9==. ;
replace basicwage1= e9 if e8==.;
replace basicwage1=0 if basicwage1==.;

gen basicwage2=. ;
replace basicwage2= e36 if e35==4;
replace basicwage2= e36*2 if e35==3;
replace basicwage2= e36*4 if e35==2;
replace basicwage2= e36*20 if e35==1;
replace basicwage2=0 if e36==. ;
replace basicwage2= e36 if e35==.;
replace basicwage2=0 if basicwage2==.;

gen totalbasicwage =. ;
replace totalbasicwage= basicwage1 + basicwage2;
```

/*Overtimepay*/
```
/*overtime of last month seems poor proxy better to use average weekly
overtime*/

gen overtimepay=. ;
replace overtimepay = (e16*e17);
replace overtimepay=0 if overtimepay== .;
replace overtimepay= 0 if (e16*e17)==.;

gen overtimepay2=.;
replace overtimepay2= (e43*e44);
replace overtimepay2= 0 if (e43*e44)==.;

gen totalovertimepay =. ;
replace totalovertimepay = overtimepay + overtimepay2;
replace totalovertimepay= 0 if (overtimepay +overtimepay2) ==.;
```

/*personalincome*/

```
gen personalincome=. ;
replace personalincome = giftincome + totalbasicwage +
totalovertimepay
 + selfprofit + casualpay+ totalextrapay + grantincome +
investmentincome ;
replace personalincome= 0 if (giftincome + totalbasicwage +
totalovertimepay
 + selfprofit + casualpay+ totalextrapay + grantincome +
investmentincome)==0 ;

gen wageincome=.;
replace wageincome= totalbasicwage+ totalovertimepay+ totalextrapay;

xtile incomequintile = personalincome if personalincome>0, nq(10);
sort  incomequintile;
by  incomequintile:sum personalincome;

sort hhid pcode;
merge hhid pcode using  "C:\Survey Datasets\African Datasets\South
African  Datasets\Khayelitsha Mitchell's Plain Survey
2000\stata\householdmodule_All_07_07_dist.dta";
```

 Save status*/

```
#delimit;

replace l1=1 if l2>0 &l2<.;
replace l3=1 if l4>0 & l4<.;
replace l5=1 if l6>0 & l6<.;
replace l7=1 if l8>0 & l8<.;

replace l1=2 if l2==0;
replace l3=2 if l4==0;
replace l5=2 if l6==0;
replace l7=2 if l8==0;

replace l2=0 if l2==.;
replace l4=0 if l4==.;
replace l6=0 if l6==.;
replace l8=0 if l8==.;

replace l1=1 if l1==. | l2>0;
replace l3=1 if l3==. | l4>0;
```

```
replace l5=1 if l5==. | l6>0;
replace l7=1 if l7==. | l8>0;
replace l1=2 if l1==.|l2==0;
replace l3=2 if l3==. | l4==0;
replace l5=2 if l5==. | l6==0;
replace l7=2 if l7==. | l8==0;

gen savestatus =.;
replace savestatus =0 if l1==2 &l2==. | l2==0 & l3==2 & l4==. | l4==0
& l5==2 &l6==. | l6==0 & l7==2 &l8==. | l8==0;
replace savestatus=1 if l1==1 & l2>0 & l2<.& l3==2| l3==. &l5==2| l5==.
& l7==2| l7==.;
replace savestatus =2 if l3==1 & l4>0 & l1==2| l1==. &l5==2| l5==. &
l7==2| l7==.;
replace savestatus =3 if l5==1 & l6>0 & l1==2| l1==. &l3==2| l3==. &
l7==2| l7==.;
replace savestatus =4 if l7==1 & l8>0 & l1==2| l1==. &l5==2| l5==. &
l3==2| l3==.;
replace savestatus=5 if l1==1 & l2>0 & l3==1 & l4>0 &l5==2| l5==. &
l7==2| l7==.;
replace savestatus=6 if l1==1 & l2>0 & l5==1 & l6>0 &l3==2| l3==. &
l7==2| l7==.;
replace savestatus=7 if l1==1 & l2>0 & l7==1 & l8>0 &l3==2| l3==. &
l5==2| l5==.;
replace savestatus=8 if l3==1 & l4>0 & l5==1 & l6>0 &l1==2| l1==. &
l7==2| l7==.;
replace savestatus=9 if l3==1 & l4>0 & l7==1 & l8>0 &l1==2| l1==. &
l5==2| l5==.;
replace savestatus=10 if l5==1 & l6>0 & l7==1 & l8>0 &l1==2|
l1==.&l2==0 & l3==2| l3==.&l4==0;
replace savestatus=11 if l5==1 & l6>0 & l3==1 & l4>0 &l1==1& l2>0 &
l7==2| l7==.&l8==0;
replace savestatus=12 if l7==1 & l8>0 & l3==1 & l4>0 &l1==1& l2>0 &
l5==2| l5==.& l6==0;
replace savestatus=13 if l7==1 & l8>0 & l3==1 & l4>0 &l5==1& l6>0 &
l1==2| l1==.& l2==0;
replace savestatus=14 if l7==1 & l8>0 & l3==1 & l4>0 &l5==1& l6>0 &
l1==1& l2>0;
replace savestatus =15 if l1==. & l3==. & l5==. & l7==.;

label define savestatus 0 "No savings" 1 "Stokvel only" 2"Burial society
only" 3"Bank only"
```

4"Other savings only" 5"Stokvel and burial society" 6"Stokvel and bank"
7" Stokvel and other savings"
8 "Burial society and bank" 9"Burial society and other savings" 10"Bank
and other savings"
11 "Stokvel, bank and burial society" 12 "Stokvel burial society and other
savings"
13"Burial society, bank and other savings" 14"All saving forms" 15"All
missing categories";

label values savestatus savestatus;

/*Personalsavings and saver*/

```
gen stokvelsave = 0;
replace stokvelsave =l2 if l2>0 & l2<.;

gen burialsave=0;
replace burialsave = l4 if l4>0 & l4<.;

gen banksave=0 ;
replace banksave =l6 if l6>0 & l6 <.;

gen othersave=0;
replace othersave = l8 if l8>0 & l8<.;

gen personalsavings=0;
replace personalsavings = stokvelsave+ burialsave + banksave+
othersave;

gen saver=.;
replace saver =1 if personalsavings>0 & personalsavings<.& a1>=18 &
a1<.;
replace saver=0 if personalsavings==0 & a1>=18 & a1<.;

gen banker=0;
replace banker=1 if banksave>0 & banksave<.;
replace banker =. if a1==.;

gen stokvelsaver=0;
replace stokvelsaver=1 if stokvelsave>0 & stokvelsave<.;
replace stokvelsaver=. if a1==.;

gen burialer=0 ;
```

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```
replace burialer=1 if burialsave>0 & burialsave<.;
replace burialer =. if a1==.;

gen othersaver=0;
replace othersaver=1 if othersave>0& othersave<.;
replace othersaver=. if a1==.;
```

***Monthly gross household income (derived)*/**;
```
sort hhid;
egen hhincome=sum(personalincome),by( hhid);
replace hhincome=. if personalincome==. & hhincome==0;
```

***Monthly gross savings (derived)*/**;
```
sort hhid;
egen hhsave=sum(personalsavings),by( hhid);
replace hhsave=. if personalsavings==. & hhsave==0;

gen hhsaver=.;
replace hhsaver=1 if hhsave>0 & hhsave<.;
replace hhsaver=0 if hhsave==0;
```

* **Other household savings */**;
```
gen otherhhsave =.;
replace otherhhsave = (hhsave-personalsavings);
```

***Other household income**: Need to control for age */;
```
gen otherhhincome = .;
replace otherhhincome= (hhincome -personalincome);
replace otherhhincome = hhincome if personalincome ==.;
replace otherhhincome=. if a1==.;

xtile hhincomequintile = hhincome if hhincome>0, nq(10);
sort  hhincomequintile;
by  hhincomequintile:sum hhincome;
```

```
/*In these instances there is a bias towards the constructed hhincome
variable
by using the disclosed hhincome variable (q16) when hhsavings is
greater than the hhincome variable
this bias is avoided*/

replace hhsaver=. if hhsave>hhincome & hhsave>q16;
```

```
replace hhsaver=. if hhsave >hhincome & q16==.;
replace saver =. if personalsavings>hhincome & hhsave >q16 ;
replace saver=. if personalsavings>hhincome & q16==.;
replace savestatus =. if personalsavings>hhincome & q16==.;

sort hhid;
egen hhgrant=sum(grantincome),by( hhid);
replace hhgrant=. if grantincome==. & hhgrant==0;

gen grantonly=0;
replace grantonly=1 if (hhincome-hhgrant)==0;

#delimit;
sort hhid;
egen hhburial=sum(burialsave),by( hhid);
replace gen hhisaver=.;
replace hhisaver=1 if hhisavings>0 & hhisavings<.;
replace hhisaver=0 if hhisavings==0;
```

Investment Savings/

```
gen isavings =.;
replace isavings= (personalsavings - burialsave);

gen isaver=.;
replace isaver=0 if isavings==0 & a1>=18 & a1<.;
replace isaver=1 if isavings>0 & isavings<.;

gen burialpc=0;
replace burialpc = (burialsave/personalsavings)*100;
replace burialpc= . if a1==.;

gen otherpc=0 ;
replace otherpc= ( othersave/personalsavings)*100;
replace otherpc=. if a1==.;

gen bankpc=0;
replace bankpc=(banksave/personalsavings)*100;
replace bankpc=. if a1==.;

gen stokvelpc=0;
replace stokvelpc=(stokvelsave/personalsavings)*100;
replace stokvelpc=. if a1==.;
```

```
sort stokvelpc;
sort bankpc;
sort burialpc;
sort otherpc;
sort incomequintile;

by incomequintile: sum(burialpc);
by incomequintile: sum(bankpc);
by incomequintile: sum(stokvelpc);
by incomequintile: sum(otherpc);

xtile personalincomequintile = personalincome, nq(10);
sort  personalincomequintile;
by  personalincomequintile:sum personalincome;
hhburial=. if burialsave==. & hhburial==0;
gen hhburialpc =.;
replace hhburialpc= (hhburial/ hhincome)*100;

sort hhid;
gen hhstokvelpc=.;
egen hhstokvel=sum(stokvelsave),by( hhid);
replace hhstokvel=. if stokvelsave==. & hhstokvel==0;
replace hhstokvelpc= ( hhstokvel/hhincome)*100;

sort hhid;
egen hhbank=sum(banksave),by( hhid);
replace hhbank=. if banksave==. & hhbank==0;
gen hhbankpc=.;
replace hhbankpc= ( hhbank/hhincome)*100;

sort hhid;
egen hhother=sum(othersave),by( hhid);
replace hhother=. if othersave==. & hhother==0;
gen hhotherpc =.;
replace hhotherpc = ( hhother/ hhincome)*100;

gen hhisavings=.;
replace hhisavings= (hhsave-hhburial);
```

/**Education*/

```
gen gr4=0;
```

```
replace gr4=1 if a7==3 & a7!=999;
gen gr6=0;
replace gr6=1 if a7==6 & a7!=999;

gen gr10=0;
replace gr10=1 if a7==10 & a7!=999;

gen gr12=0;
replace gr12=1 if a7==12 & a7!=999;
gen university=0;
replace university=1 if a22==7;

gen formaltraining=0;
replace formaltraining=1 if a22<996 &a22>2;

gen female=.;
replace female=1 if gender==2;
replace female =0 if gender==1;

gen education=.;
replace education=a7;
replace education=. if a7==999;
```

/* Nicoli's labour market status categories*/

```
gen selfemployed=0;
replace selfemployed =1 if lmstatus2==2;
replace selfemployed =. if a1==.;

gen wageemployed=0;
replace wageemployed=1 if lmstatus2==1;
replace wageemployed =. if a1==.;

gen casualwork =0;
replace casualwork=1 if lmstatus2==3;
replace casualwork=. if a1==.;

gen searchingunemploy=0;
replace searchingunemploy=1 if lmstatus2==4 ;

gen networksearch=0;
replace networksearch=1 if lmstatus2==5;
```

```
gen marginalunemploy=0;
replace marginalunemploy=1 if lmstatus2==6;

gen nonlfparticipant=0;
replace nonlfparticipant=1 if lmstatus2==7;

gen incomeearner=0;
replace incomeearner= 1 if lmstatus2>0 & lmstatus2<4;
replace incomeearner=. if a1==.;
```

/*RACE*/

```
gen coloured=.;
replace coloured =1 if race==2;
replace coloured =0 if race==1 | race==3| race==4;

gen african=.;
replace african=1 if race==1;
replace african=0 if race==2 | race==3 | race==4;
```

/*AGE*/
```
gen age=a1;
gen agesquared=.;
replace agesquared= (a1^2);
```

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The Aids and Society Research Unit (ASRU) supports quantitative and qualitative research into the social and economic impact of the HIV pandemic in Southern Africa. Focus areas include: the economics of reducing mother to child transmission of HIV, the impact of HIV on firms and households; and psychological aspects of HIV infection and prevention. ASRU operates an outreach programme in Khayelitsha (the Memory Box Project) which provides training and counselling for HIV positive people

The Data First Resource Unit ('Data First') provides training and resources for research. Its main functions are: 1) to provide access to digital data resources and specialised published material; 2) to facilitate the collection, exchange and use of data sets on a collaborative basis; 3) to provide basic and advanced training in data analysis; 4) the ongoing development of a web site to disseminate data and research output.

The Democracy in Africa Research Unit (DARU) supports students and scholars who conduct systematic research in the following three areas: 1) public opinion and political culture in Africa and its role in democratisation and consolidation; 2) elections and voting in Africa; and 3) the impact of the HIV/AIDS pandemic on democratisation in Southern Africa. DARU has developed close working relationships with projects such as the Afrobarometer (a cross national survey of public opinion in fifteen African countries), the Comparative National Elections Project, and the Health Economics and AIDS Research Unit at the University of Natal.

The Social Surveys Unit (SSU) promotes critical analysis of the methodology, ethics and results of South African social science research. One core activity is the Cape Area Panel Study of young adults in Cape Town. This study follows 4800 young people as they move from school into the labour market and adulthood. The SSU is also planning a survey for 2004 on aspects of social capital, crime, and attitudes toward inequality.

The Southern Africa Labour and Development Research Unit (SALDRU) was established in 1975 as part of the School of Economics and joined the CSSR in 2002. SALDRU conducted the first national household survey in 1993 (the Project for Statistics on Living Standards and Development). More recently, SALDRU ran the Langeberg Integrated Family survey (1999) and the Khayelitsha/Mitchell's Plain Survey (2000). Current projects include research on public works programmes, poverty and inequality.