

**WAZALENDU SAVINGS AND CREDIT COOPERATIVE LOANS AND
WELFARE OF SOLDIERS IN UGANDA**

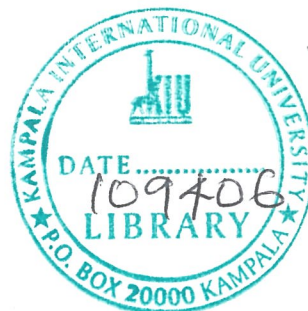
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A THESIS SUBMITTED TO THE COLLEGE OF HIGHER DEGREES AND
RESEARCH IN PARTIAL FULFILLMENT OF THE REQUIREMENT
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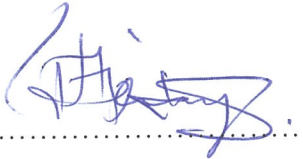
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DECLARATION

I declare that this thesis is my original work and has not been presented to any University or any higher institution of learning for the award of any academic qualification.

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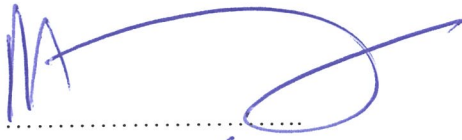
APPROVAL

I confirm that the work reported in this thesis was carried out by the candidate under my supervision.

Signature.....

SUPERVISOR

Date



DEDICATION

This Thesis is dedicated to my beloved parents Mr. & Mrs. Kiyaga and my supervisor Dr. Ssendagi for their great contribution towards the success of this work.

ACKNOWLEDGEMENT

I wish to thank the lord Almighty, without whose inspiration, guidance and wisdom I would neither have tackled nor accomplished my studies.

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GLOSSARY OF TERMS

OPERATIONAL DEFINITION OF TERMS

Loan sharks: Money lenders giving small-lead-time loans that levy high interest rates.

Utility: Satisfaction derived by a consumer from consumption of a product or service.

Wazalendo: Swahili word for a patriot. This is the name of the institution mobilizing soldiers' savings to give loans.

Welfare: somebody's state or condition with respect to whether she is healthy, safe, happy or prospering. A state of minimally acceptable wellbeing which includes standard of living, property, investment and psychological satisfaction.

ABBREVIATIONS

AMISOM: African Union Mission in Somalia.

NAADS: National Agricultural Advisory Services. Program of Uganda which is an innovative public-private extension service delivery approach, with the goal of increasing market oriented agricultural production by empowering farmers to demand and control agricultural advisory services.

PEAP: Uganda's Poverty Eradication Action Plan. This action plan has guided the formulation of government policy since its inception in 1997, and is currently being revised. Under this plan, is being transforming Uganda into a modern economy in which people in all sectors can participate in economic growth.

PMA: Plan for Modernization of Agriculture.

ROSCAs: Rotational savings and Credit Associations; List of a group of people who come together and collect their salaries and each one of them takes a turn at taking what they collect every month.

UPDF : Uganda Peoples' Defense Forces.

WSACCO Loan: Wazalendo Saving and Credit Cooperative loan.

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ABSTRACT

Title: Wazalendo Saving And Credit Cooperative Loans And Welfare Of Soldiers In Uganda.

Background: Since WSACCO loans are used to supplement a soldier's salary in Uganda, it is necessary to find out if loans make a difference in soldiers' lives. In the past, loans were given by loan sharks, commercial banks but currently WSACCO; a microfinance institution. **Objectives:**

To establish factors determining access to WSACCO Loans and their relationship to standard of living, possession of property, personal business and satisfaction. **Methods:** After multi-stage sampling, soldiers in ten barracks were interviewed for loan usage, property and documents inspected and evaluated in a cross-sectional prospective study by Chi-square and Fisher's tests in a logistic regression model. **Results:** WSACCO loans are accessed by 61.7 % of soldiers. A higher rank increases a soldier's access to WSACCO loans; p-value 0.04339.

Soldiers' families have an average of seven members. WSACCO loans were associated with an increase in the number of soldiers with furniture, personal house, iron roofed house, mobile telephone, personal business, satisfaction with achievement and those satisfied with WSACCO at p-values of 0.0419, 0.0500, 0.0321, 0.0069, 0.0019, 0.0001 and 0.0001 respectively even after controlling for rank, education, employment of spouse and family size. WSACCO loans were not associated with an increase in the number of soldiers with mattresses, ceiling, brick-walled house, cemented floor, running water, electric equipment, electricity, land and four or more cows; p-values 0.3413, 0.7606, 0.4995, 0.1313, 0.1053, 0.08410, 0.4381, 0.1753 and 0.1141 respectively. **Discussion:** Private soldiers were farther than other ranks from headquarters and had smaller savings. Male and Married soldiers take more loans due to relatively higher responsibility. Uneducated people and very highly educated people see the logic of saving and taking loans more than the semi-elites. Soldiers have a higher family burden than an average Ugandan. Possession of furniture is dependent on WSACCO loans but is probably affected by ability to keep the furniture, whether the loan makes a difference in ability to purchase furniture and whether they do not have a very big family burden. Since a lot of lump-sum money needs to be used to purchase iron sheets, personal house and a mobile telephone, possession of these was associated with having taken a loan. As expected, satisfaction is greatly dependent on WSACCO.

Conclusion: Access to WSACCO loans is 61.7 % in UPDF. Male soldiers took loans at a two-fold higher rate than female counterparts. Married soldiers take WSACCO loans more than unmarried soldiers at a 55 % higher rate. Education increased access to WSACCO loans at a higher level but reduced at a middle level. Soldiers have an average of seven family members. Mattresses were essential and did not have to depend on loans to be bought when required. Taking WSACCO loans significantly helped soldiers acquire personal houses except among those that are privates or uneducated. Soldiers who had taken WSACCO loans were not associated with possession of a ceiling, a brick walled house, cemented floor, electricity, electrical equipment and running water as they were not practical in the villages. WSACCO loans are associated with improved standard of living, acquisition of property and personal gratification and satisfaction with WSACCO. **Recommendations:** Conditions to improve access to loans by lower ranks need to be put in place. Semi-elites need to be educated more about WSACCO loan advantages. Soldiers need to be encouraged to have smaller families. WSACCO loans should be carried on as they are proven to support soldier's welfare. Another study to show the effect of loans after follow up should be conducted.

Key words: WSACCO, Microfinance, SACCO, UPDF, Wazalendo, welfare.

CHAPTER ONE

1.0 INTRODUCTION

Historical perspective gives us the history of cooperatives and the history of financial services in Uganda and the army respectively. Theoretical perspective describes the several theories of consumption since welfare aspects like standard of living improve with consumption; so is possession of property. Since aggregation problems, economic system inefficiency and substitution may affect welfare, they are also to be discussed. The context is mainly descriptive of a third world sub-Saharan setting amidst the first world technological advances. The concept of welfare is discussed in view of standard of living, property possessed, alternative income and psychological aspects. Statement of the problem discusses how welfare of soldiers contributes to National security. Purpose, Goals and Objectives, research questions, null hypothesis and justification of the research have been discussed to explain the framework of how the research was done. Scope covered the Geographical location, period of the research, the theories investigated and the extent of the content. In the significance of the study, we show how the soldiers and army leadership and community will benefit from the research. In a nutshell, this chapter links the past, present and the research, to improve the future.

1.1 HISTORICAL PERSPECTIVE

The cooperative movement in Uganda was started in 1913 and initially was underground. In 1946, the cooperative societies' ordinance was enacted to legalize their operations. (Arain S Et Al, 1967) In 1952, Sir Andrew Cohen, the new Governor of Uganda formulated policies that gave cooperatives autonomy from state interference. These policies eliminated discriminatory procedures and access to loans and coffee processing by Africans. By the end of 1959, all 273 cooperative societies were registered. At the end of 1961, there were 21 registered cooperative unions including the Uganda Cooperative Alliance and 1,662 primary cooperative societies with a membership of 252,378. This growth continued in the difficult time ahead for several reasons.

In the new world economic order, cooperatives are an easier way of enabling peasant's access to cheap credit and economic education with democratic principles. That's why even in

Amin's era of economic melt-down, they still prospered. However, corruption and embezzlement worked on their downfall until their image was so tainted that developmental programs by World Bank and International Monetary Fund underlined their negative image by excluding them from PEAP, PMA and NAADS. Nevertheless, cooperatives have been revived but their main challenge remains the commonly weak board that remains a rubberstamp of the technical managerial team; a trend, the army surmounted by directed democracy and effective delegation.

In 1972, the Uganda savings and credit Union Limited was established as a National apex organization for savings and credit cooperative societies. It is registered under the cooperative statute of 1991 and the cooperative regulations of 1992. (nn, Background information, 2014) In 1996, the Association of Microfinance Institutions in Uganda was founded and was registered in 1999. In the Ugandan army, there have been several methods used to access financial services. Initially, ROSCAs were used in which members contributed large parts of their salaries to one member at a time in a rotational manner. These were operating under legal strain with abandonment and losses due to deaths and transfers. Later, the loan sharks provided very expensive loans. This situation has been made only slightly better by the costly commercial bank services. Currently, since 2005 Wazalendo Savings and Credit Cooperative (WSACCO) was founded to encourage soldiers to learn to save and get affordable credit services. WSACCO was registered on 22 Sept 2005 but currently has over 70,000 members. (Muchunguzi A & Mwesigwa P, 2005), (Audy C, Dec 2001) The theories that became a reality would be seen with this and other studies.

1.2 THEORETICAL PERSPECTIVE

Since the welfare improves by consumption, several theories of consumption were analyzed and they included the welfare indicators, problems of aggregation, inefficiency, optimal utility variability, overall welfare of society and efficiency of consumption. Theoretically, aggregation of income by saving should improve the welfare of the soldier by enabling the soldier to consolidate funds for a start up cost. The factors measuring welfare include those for standard of living, income, property and psychology. Other factors like social amenities, freedom of speech or worship and National programs and projects like roads are difficult to measure or compare in such a widespread community.

There are a lot of aggregation problems as in a closed community like a barracks one person may have an effect on another. For example a house occupied by one may then not be occupied by another. On the other hand, with relatively low income, money for one item may be substituted by another. For example money for an electric gadget may be used to purchase a pair of shoes. On the other hand, the relative costs and wants may affect one another. Some tribes will substitute any item measurable for standard of living for cows. That is why a welfare assessment based on standard of living alone may not capture overall improvement. An example of such a tool is the progress out of poverty index.

There are several factors that may lead to inefficiency of economic systems. For example, lack of information about the availability of a commodity may lead to market failure. These and other factors like income may lead to inefficiency in the production theory basics. There is also variable interpersonal utility with many combinations of consumer utility, production mixes and factor input combinations. However, this Pareto efficiency may be necessary but not sufficient for social welfare. The overall societal welfare determines the level at which welfare is measured. Nevertheless, Consumption efficiency function may be considered in the utility function. Essential goods may have a perfectly inelastic demand and this may affect our results in the context of low income earners (Fergusson AM, 1972).

1.3 CONTEXTUAL PERSPECTIVE

Uganda is a Sub-Saharan Africa third World country with a per capita Gross domestic Product of 547.01 US\$ that is steadily increasing with a need to know the shortfalls and where to make improvement. The average family size is 5 in rural communities and 4 in urban centers. Marital status in Uganda could be in religion, tradition, by registration or after cohabiting for twelve years. Since most people cohabit and the responsibilities remain the same, marriage may be assumed to mean any people living together having children; a situation common in the Ugandan army..

In the Ugandan army, military rank is due to performance and education enables one to be able to do officer training. Military rank increases ones salary and status; demanding

leadership qualities. Private is the lowest rank. Uganda has a literacy rate of 66.8 %. The whole army of over 70,000 has about 1500 females. At the place of work, soldiers are given houses but they are not furnished. The furniture in the house is therefore the soldiers' effort. Houses allocated in the barracks and salary are also dependent on the rank and education level. There is currently no program to construct houses for the soldier at home. But, a proposal is in offing. In Uganda, customarily, houses are constructed out of vegetation and soil; that is mud and wattle for the walls and grass for the roof. However, those who can afford use iron roofs or baked clay tiles. Other methods are uncommon although in the global village they are coming up.

The new kid on the block is the mobile telephone. The mobile telephone is used by 10 million subscribers in a population of 32 million in Uganda. The telephone is used to communicate oral and written messages. However, of recent the existence of telephone-based mobile banking and transfer of funds across the network mean that the telephone will soon become an essential household item through which anything can be accessed. Whether these factors were improved by loans was a concept assessed in this study.

1.4 CONCEPTUAL PERSPECTIVE

The main concept of this research is that WSACCO loans improve welfare. WSACCO loans are low interest loans given by a saving and credit cooperative. Welfare is measured by standard of living, property possessed, personal income and psychological welfare. There is welfare catered for by Government and the wider community which is out of the scope of the soldier and this book. The welfare of a soldier depends on several inputs and how they are utilized by the soldier. An educated soldier may have different spending patterns when compared with an uneducated soldier. Factors like Education, life experience and environment have an effect on how a soldier utilizes his or her money. The usage of funds determines whether the soldier will be able to cater for his standard of living. However, at a certain level of income, the surplus can be measured by property and personal investment. Indicators of welfare may include standard of living, social welfare like hospitals and roads and those that are difficult to quantify like freedom of worship. Social welfare does not independently depend on the soldiers funds and is difficult to attribute to the soldier. Factors making a difference among similar soldiers are

family background and wealth, having windfalls in missions, corruption, loss due to disasters, saving, renting and whether a soldier got a loan. It is important to note that loans could be from WSACCO or other institutions. Here, we are interested in Loans from WSACCO. Therefore, other factors other than WSACCO loans are confounders or should be assumed to be negligible.

1.5 STATEMENT OF THE PROBLEM

Welfare in the army has been a problem and a necessity for healthy soldiers to give a nation security. Despite the fact that salaries of soldiers were increased, it was not clear whether their welfare improved. This paper tries to examine the access. In addition, it is important to know to what extent the living standard, and psyche are affected by the project of giving loans. This is important as loans sometimes stress and depress people when they fail to pay. There is also need to assess the effect of WSACCO loans on acquisition of property and personal business. Other factors may not be easy to assess these include social factors like freedom of speech, freedom and access to preferred worship. Some communities take welfare to include investment in issues like domestic animals and these will indicate wellbeing or welfare. Indeed for some communities one cannot be considered respectable if they do not have cattle. On the other hand, the modern mindset is in such a way that it does not matter how much one saves but rather what he does with his savings. That is the reason why it is important to assess personal investment and the consequences.

1.5.1 Negative consequences

Loans and saved money if not used well can have an effect of the money being spent on an income-consuming asset. This puts the soldier in a worse state as he will then continue to spend his small income on supporting the asset. A common example is a car that has to be fueled or an expensive house in the village. On the other hand, the saved money or loan may be stolen affecting the effect of the funds on welfare, property or personal investment. In the United States, untenable financial circumstances have made the outstanding loan debt to surpass one trillion US Dollars with 8.8 % of students that began paying in 2009 having defaulted (Barbara E and Gray R, June 2014). Depression and suicide have so far not been common in Uganda but non-payment

due to insolvency is common. The investigation of this negative psychological consequence was dealt with in this research as will be seen in the purpose, goals and objectives.

1.6 PURPOSE

The purpose of this research is to establish the relationship between soldiers using WSACCO loans and their welfare.

1.7 RESEARCH GOALS AND OBJECTIVES

1.7.1 Research Goals

- a) To describe factors determining access to WSACCO Loans.
- b) To know whether soldiers who took WSACCO loans have better standard of living than those who did not.
- c) To find out which property was higher among soldiers that took WSACCO loans.
- d) To find if people with WSACCO loans had more businesses than those that did not.
- e) To find out the numbers of soldiers that were psychologically satisfied.

1.7.2 Research Objectives

- a) To establish how rank, gender, marital status and education, affect access to WSACCO Loans.
- b) To establish the relationship between WSACCO loans and Standard of living of soldiers in Uganda.
- c) To establish the relationship between WSACCO loans and possession of property by soldiers in Uganda.

d) To establish the relationship between having taken a WSACCO loan and possession of a personal business.

e) To establish the relationship between satisfaction with WSACCO or personal achievement and WSACCO Loans.

1.8 RESEARCH QUESTIONS

- a. Are WSACCO loans accessed equally by all soldiers?
- b. Is taking WSACCO loans related to a higher standard of living?
- c. Is taking WSACCO loans associated with possession of more property?
- d. Is taking WASACCO loans associated with possession of a personal investment?
- e. Is taking WSACCO Loans associated with satisfaction of soldiers?

1.9 NULL HYPOTHESIS

WSACCO loans are not associated with better welfare of soldiers.

1.10 JUSTIFICATION

Welfare is a key issue in the performance of an army. It is therefore important to know whether the effort put in simplifying saving and taking low interest rate loans would improve welfare. If the saving and participating in taking loans does not improve welfare, then more effort can be put into searching for another method of improving welfare. Loans are one method that may improve welfare and if misused could actually worsen welfare. The actual outcome of loan usage depends on many local factors in the individual and the community. It is therefore important that we investigate this particular community in the prevailing circumstances in order to find out if the loans given so far have had a positive or negative impact on soldiers' welfare within bounds of the population.

1.11 SCOPE

Geographical: The research covered soldiers in 1 Uganda. Uganda is found between latitudes 29°33' east and 35° east, longitudes 1°26' South and 4°10' North.

Time scope: The study was conducted in February 2013. The Data was collected within 2 weeks.

Theoretical scope: The study concentrated on proving the theory that loans harness savings and improve welfare.

Content scope: The factors to study will include demographic factors likely to affect welfare which are gender, education level, marital status and military rank. In addition, possession of land, a personal house and whether it has an iron roof, ceiling, cemented floor, brick walls, electricity or running water will indicate the standard of living. On the other hand, properties like cows, a personal business and a mobile telephone helped indicate the aspect of investment; an indicator of constant and future welfare support while satisfaction indicated the psychological aspect of wellbeing.

1.12 SIGNIFICANCE OF THE STUDY

The beneficiaries will include soldiers, their families, army leaders and the citizens of Uganda. Soldiers will benefit by having a useful service promoted or changed to suite them. The Ugandan army leadership will directly benefit as they will get the data about the relationship between soldiers who get WSACCO loans and different welfare parameters. The army leadership will also benefit by knowing factors affecting access to the program. In addition we shall tell the army and WSACCO leadership about the level of satisfaction about the program. This will enable the WSACCO leadership to know which adjustments have to be made for better services. The army leadership will then know which welfare indicator needs to be addressed in order to get better morale. The army leadership will also know what needs to be done about the WSACCO loan to make them improve the welfare of soldiers.

CHAPTER TWO

2.1 THEORETICAL PERSPECTIVE

It is alleged that women tend not to do business and if they do, they indulge in small businesses. This is underlined by the presence of several small loans and self help groups for women on the market. An example is United States small business Administration. This study tried to find out the effect of gender on access to loans. Since women are more illiterate than men, there is a common understanding that women will be the ones to take the small loans. This was explored by the researcher. Due to the unstable relationships of unmarried people, it is expected that they are less likely to take loans for property. (Guttentag. J, March 6, 2014) In the same vein, Taking loans can be tricky for married people too as consent is supposed to come from both parties. (Scaborough J 2014) Does this apply to salary loans? The relation between marital status and acquisition of loans was also be explored. In the United States and in UPDF, all military ranks have the same chances of accessing loans. Whether this is both gospel and practice in Uganda was explored.

Whereas loans are freely given to non-profit corporations, and government to finance water and sanitation projects, it is not known whether individual usage of running water in this setting would also depend on loans. (Nn, *Rural Development, United States Department of Agriculture*, January 22, 2014). The same applies to grants and electrification. (Randal H, July 4, 2013) Among the factors measured are land, cattle and a mobile telephone. These are the factors that led the investigator to avoid the progress out of poverty index (PPI). (Mark. S (2011) Besides, collectively judging poverty, PPI misses on these crucial welfare contributors like land, domestic animals, the mobile telephone and the psychological aspect.

Land is an immovable property that is relatively undisputable and a measure of a stable destiny in terms of welfare. Domestic animals like cows are a measure of wealth and a potential source of access to different services as they can be sold any time. Besides, milk can be a continuous guarantee of good nutrition or income. In the contemporary World, the mobile telephone not only replaced the land-line but now serves to store, send or receive money and is a radio, television, flash light, clock, calendar, calculator, recorder, internet launch-pad and

camera. The mobile phone is a measure of access to so many services that it is a stand-alone measure of welfare. A personal business acts as a shock absorber for any problem that may need to be paid for by funds while salary has not been received by the soldier. Personal business therefore can be assessed as a measure of welfare. As far as loans are concerned, there is a tendency to assume that the more one can have his salary consolidated, the better the chances of possessing property. Indeed a loan can be viewed as forced saving. Thus with the consolidated salary, one can be able to procure what he would not have been able to procure while getting his salary every month.

When someone gets his income consolidated, it gives him a chance of purchasing bigger assets that he would not have acquired. The loans that make it possible to consolidate the soldiers' income would therefore provide such an opportunity. For essential goods, they are consumed in proportion to the income of the population. The goods assessed are those used in construction, prepaid telephone bills called air-time in the country of research, electricity and water. These are tangible and were easy to verify physically. However their demand can be affected by other factors. For example, a household near a well may opt not to install grid water. A Giffen good like certain food staffs may actually experience a fall in demand with the increase in the income of the population. (Grant S and Stanlake G, 2009) For example, demand for beans may increase with initial rise in income. With further rise in income, the demand for beans can be forfeited for fish. But the some food staffs like Posho may have a higher demand as the income of the population gets poorer as a result of substitution of other expensive foods for a more crucial food for the family. Secondly, the nutrition status needs a thorough investigation including parameters like weight, height, mid-upper-arm circumference to say the least. Third, People with good income may purchase affluent but non-nutritious foods. To cover up for this, direct investigation of income like the possession of an income generating venture was investigated.

Welfare may be measured either cardinally in terms of "utils" or dollars, or measured ordinary in terms of Pareto efficiency. The cardinal method in "utils" is seldom used in pure theory today because of aggregation problems that make the meaning of the method doubtful, except on widely challenged underlying assumptions. In applied welfare economics, such as in

cost-benefit analysis, money-value estimates are often used; particularly where income-distribution effects are factored into the analysis or seem unlikely to undercut the analysis. The capabilities approach to welfare argues that freedom; what people are free to do or be, should be included in welfare assessments, and the approach has been particularly influential in development policy circles where the emphasis on multi-dimensionality and freedom has shaped the evolution of the Human Development Index.

Other classifying terms or problems in welfare economics include externalities, equity, justice, inequality, and altruism.

There are two approaches to welfare economics, neoclassical and the new welfare economics approach. The new welfare explicitly recognizes the differences between the efficiency aspect of the discipline and the distribution aspect and treats them differently. Questions of efficiency are assessed with criteria such as Pareto efficiency and the Kaldor-Hicks compensation tests, while questions of income distribution are covered in social welfare function specification. (Bator F M, 1957). In this context, we mainly consider soldiers of lower ranks. Many economists use Pareto efficiency as their efficiency goal. According to this measure of social welfare, a situation is optimal only if no individuals can be made better off without making someone else worse off.

This ideal state of affairs can only come about if four criteria are met:

- a. The marginal rates of substitution in consumption are identical for all consumers. This occurs when no consumer can be made better off without making others worse off.
- b. The marginal rate of transformation in production is identical for all products. This occurs when it is impossible to increase the production of any good without reducing the production of other goods.
- c. The marginal resource cost is equal to the marginal revenue product for all production processes. This takes place when marginal physical product of a factor must be the same for all firms producing a good.
- d. The marginal rates of substitution in consumption are equal to the marginal rates of transformation in production, such as where production processes must match consumer wants.

There are a number of conditions that, most economists agree, may lead to inefficiency. They include:

- a. Imperfect market structures, such as a monopoly, monopsony, oligopoly, oligopsony, and monopolistic competition.
- b. Factor allocation inefficiencies in production theory basics.
- c. Market failures and externalities like social cost.
- d. Price discrimination and price skimming.
- e. Asymmetric information, principal–agent problems.
- f. Long run declining average costs in a natural monopoly.
- g. Certain types of taxes and tariffs.

To determine whether an activity is moving the economy towards Pareto efficiency, two compensation tests have been developed. Any change usually makes some people better off while making others worse off, so these tests ask what would happen if the winners were to compensate the losers. Using the *Kaldor criterion*, an activity will contribute to Pareto optimality if the maximum amount the gainers are prepared to pay is greater than the minimum amount that the losers are prepared to accept. Under the *Hicks criterion*, an activity will contribute to Pareto optimality if the maximum amount the losers are prepared to offer to the gainers in order to prevent the change is less than the minimum amount the gainers are prepared to accept as a bribe to forgo the change. The Hicks compensation test is from the losers' point of view, while the Kaldor compensation test is from the gainers' point of view. If both conditions are satisfied, both gainers and losers will agree that the proposed activity will move the economy toward Pareto optimality. This is referred to as Kaldor-Hicks efficiency or the Scitovsky criterion. (Chipman J S & James C. M, 1978)

Utility is the usefulness or the quality of being useful for something. (Chipman J S & James C. M, 1978)

There are many combinations of consumer utility, production mixes, and factor input combinations consistent with efficiency. In fact, there are an infinity of consumption and production equilibriums that yield Pareto optimal results. There are as many optima as there are

points on the aggregate production possibilities frontier. Hence, Pareto efficiency is a necessary, but not a sufficient condition for social welfare. Each Pareto optimum corresponds to a different income distribution in the economy. Some may involve great inequalities of income. So how do we decide which Pareto optimum is most desirable? This decision is made, either tacitly or overtly, when we specify the social welfare function. This function embodies value judgments about interpersonal utility. The social welfare function shows the relative importance of the individuals that comprise society.

A utilitarian welfare function (also called a Benthamite welfare function) sums the utility of each individual in order to obtain society's overall welfare. All people are treated the same, regardless of their initial level of utility. One extra unit of utility for a starving person is not seen to be of any greater value than an extra unit of utility for a millionaire. At the other extreme is the Max-Min, or Rawlsian utility function (Stiglitz, 2000, p102). According to the Max-Min criterion, welfare is maximized when the utility of those society members that have the least is the greatest. No economic activity will increase social welfare unless it improves the position of the society member that is the worst off. Most economists specify social welfare functions that are intermediate between these two extremes.

The social welfare function is typically translated into social indifference curves so that they can be used in the same graphic space as the other functions that they interact with. A utilitarian social indifference curve is linear and downward sloping to the right. The Max-Min social indifference curve takes the shape of two straight lines joined so as they form a 90 degree angle. A social indifference curve drawn from an intermediate social welfare function is a curve that slopes downward to the right.

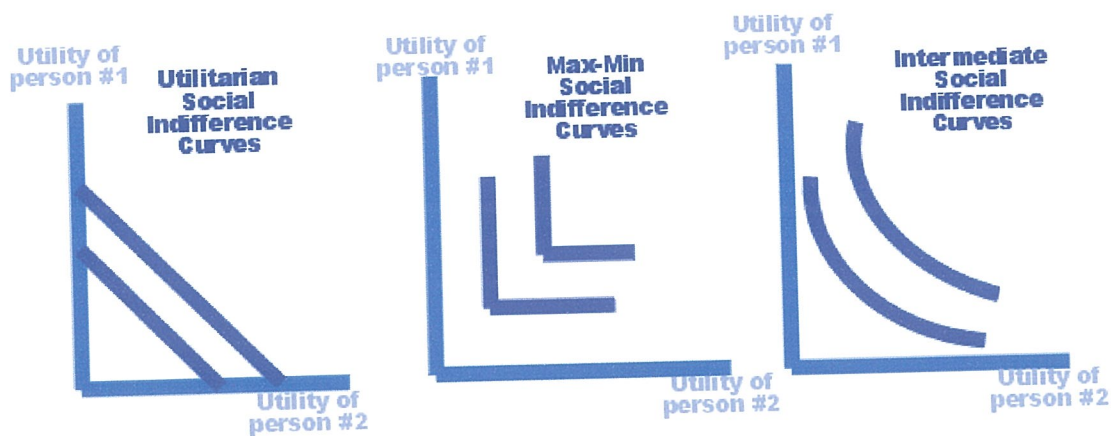


Figure 2-1 Interaction between production and consumption.

The relation between production and consumption in a simple seven equation model (2x2x2 model) can be shown graphically. In Figure 2-2 below, the aggregate production possibility frontier, labeled PQ shows all the points of efficiency in the production of goods X and Y. If the economy produces the mix of good X and Y shown at point A, then the marginal rate of transformation (MRT), X for Y, is equal to 2.

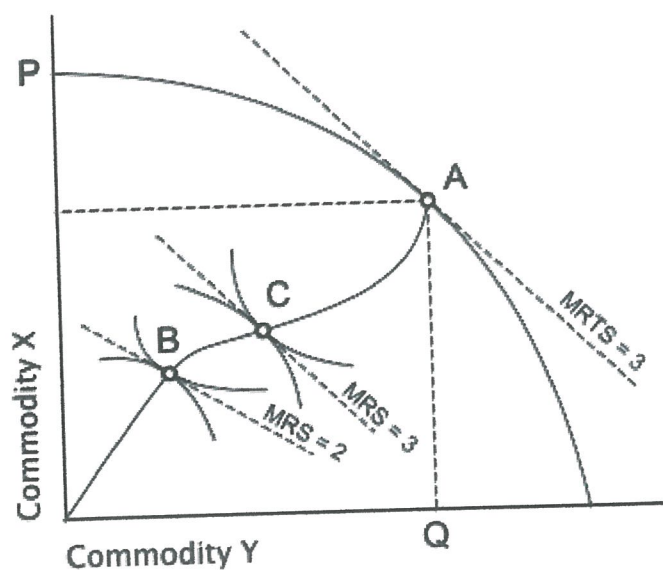


Figure 2-2 The aggregate production possibility frontier

Point A defines the boundaries of an Edgeworth box diagram of consumption. That is, the same mix of products that are produced at point A, can be consumed by the two consumers in this simple economy. The consumers' relative preferences are shown by the indifference curves inside the Edgeworth box. At point B the marginal rate of substitution (MRS) is equal to 2, while

at point C the marginal rate of substitution is equal to 3. Only at point B is consumption in balance with production ($MRS=MRT$). The curve $0BCA$ (often called the contract curve) inside the Edgeworth box defines the locus of points of efficiency in consumption ($MRS^1=MRS^2$). As we move along the curve, we are changing the mix of goods X and Y that individuals 1 and 2 choose to consume. The utility data associated with each point on this curve can be used to create utility functions. (Feldman A M & Roberto S, 2006)

2.1.2 Social welfare maximization.

Utility functions can be derived from the points on a contract curve. Numerous utility functions can be derived, one for each point on the production possibility frontier (PQ in Figure 2-2 above). A social utility frontier (also called a grand utility frontier) can be obtained from the outer envelope of all these utility functions. Each point on a social utility frontier represents an efficient allocation of an economy's resources; that is, it is a Pareto optimum in factor allocation, in production, in consumption, and in the interaction of production and consumption (supply and demand). In the Figure 2-3 below, the curve MN is a social utility frontier. Point D corresponds with point C from the earlier diagram; Figure 2-2. Point D is on the social utility frontier because the marginal rate of substitution at point C is equal to the marginal rate of transformation at point A. Point E corresponds with point B in the previous diagram, and lies inside the social utility frontier (indicating inefficiency) because the MRS at point C is not equal to the MRT at point A.

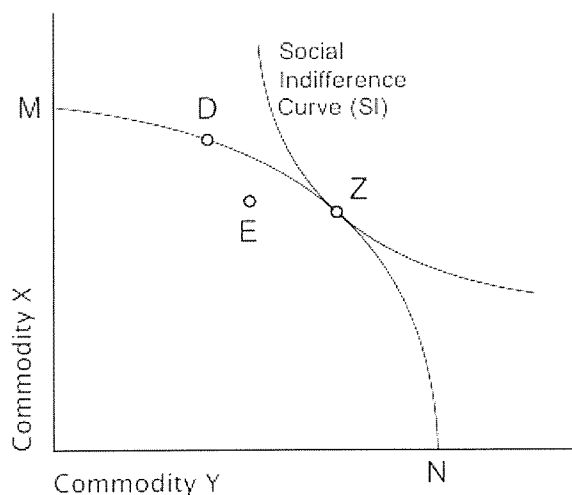


Figure 2-3 The Grand Utility Frontier for commodity X and Y

Although all the points on the grand social utility frontier are Pareto efficient, only one point identifies where social welfare is maximized. Such point is called "the point of bliss". This point is Z where the social utility frontier MN is tangent to the highest possible social indifference curve labeled SI. (Samuelson P A, 1983)

2.3.3 Welfare economics in relation to other subjects.

Welfare economics uses many of the same techniques as microeconomics and can be seen as intermediate or advanced microeconomic theory. Its results are applicable to macroeconomic issues so welfare economics is somewhat of a bridge between the two branches of economics. Cost-benefit analysis is a specific application of welfare economics techniques, but excludes the income distribution aspects. Political science also looks into the issue of social welfare (political science), but in a less quantitative manner. Human development theory explores these issues also, and considers them fundamental to the development process itself. (Suzumura K, 1980).

2.2 CONCEPTUAL FRAMEWORK

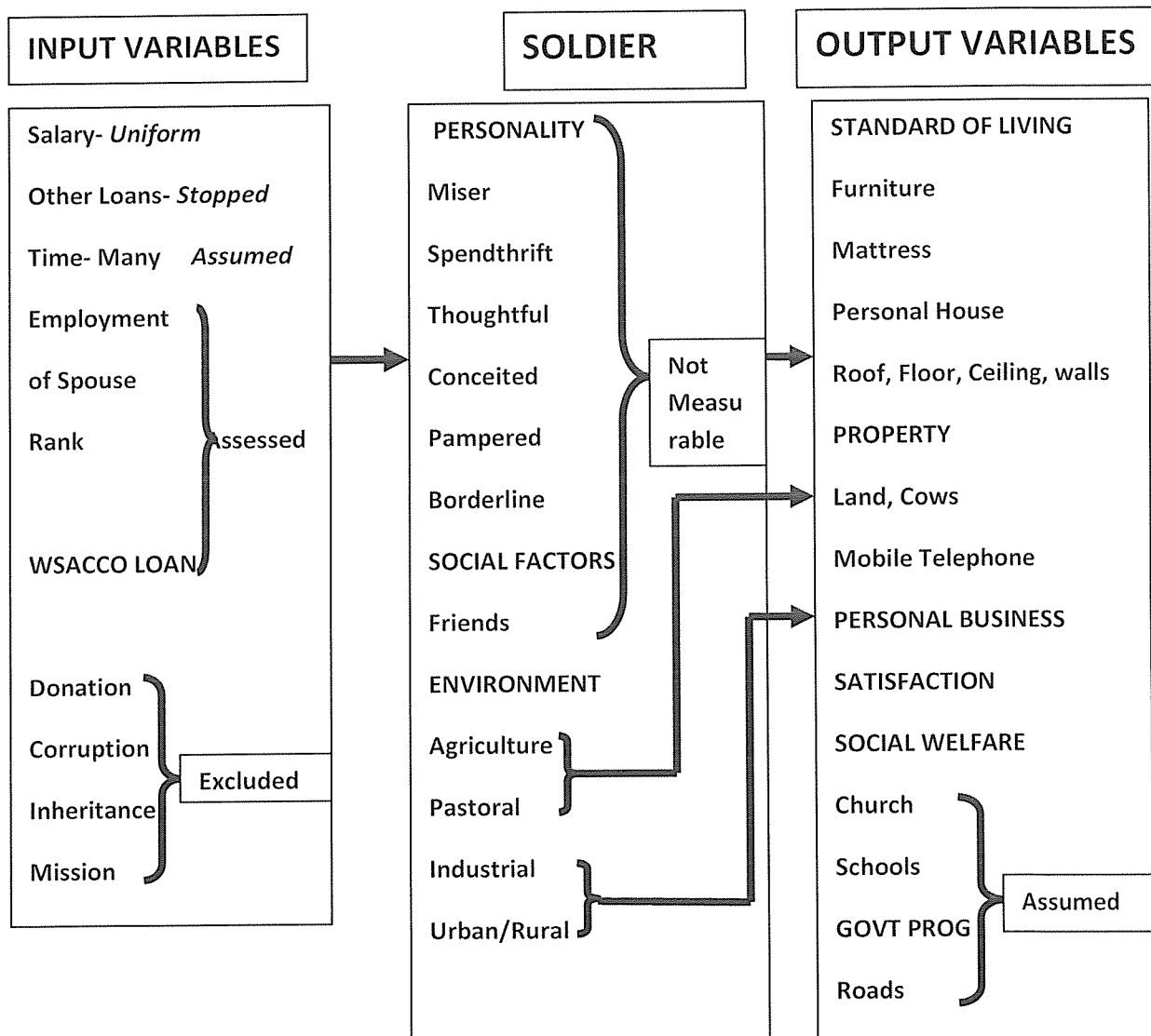


Figure 2-4 to show the factors at play in the Conceptual Framework

Several actions could be taken to change the welfare of soldiers and several factors can indicate the change in welfare. The activities that can improve the welfare of soldiers include giving cheap loans, increasing the salary, saving, donations from well wishers, corruption, employment of soldiers' spouses, well paying missions and inheritance. On the other hand, soldiers' welfare can be curtailed by losses through disasters, wastage, theft, illness, and family

demands. The salary of soldiers is uniform for rank. And the expected standard of living is commensurate to pay. For example every one can afford a house of his rank. This should not affect the expected outcome variables. Loans from other banks were stopped as they are costly. Time available and age of soldier affect all soldiers and the many output variables would balance out the different effects of time. The employment of the spouse and rank, are expected to have a significant effect and were assessed alongside WSACCO loans. Soldiers who have received major wind falls like Donations, inheritance and those involved in highly paying missions like AMISOM were excluded; so were those incriminated for corruption. These big losses or windfalls would be confounders.

How a soldier harnesses these sources of wealth to raise the indicators of welfare depends a lot on the personality, social factors and the environment. A soldier's personality may be a miser; stopping him from purchasing what he needs, spendthrift; making him waste his money, thoughtful; helping him use his money well, conceited; making him keep hoping for the best in the future, a pampered royal who thinks the whole world is there for him or borderline making semi-insane decisions from time to time. These personality factors are very difficult to quantify and their presence in this population will be assumed to be uniform. The same applies to social factors like friends. On the other hand, environmental factors like agricultural or pastoral one would foster a soldier that would be likely to have land or cattle respectively. An industrial or urban environment is likely to foster a soldier with personal business all of which are measured.

The improvement in welfare includes factors that are measurable and those that are not. Factors that are measurable include those pertaining to standard of living like household furniture, possession of a mattress, possession of a house and the nature of its roofing, ceiling, floor, walls as well as presence of electricity or running water. In addition, the mobile telephone comes in handy to be a unifying factor that is measured to assess access to several social and secular services. On the other hand, on the psychological front, satisfaction was also looked at to understand the attitude and self fulfillment derived from the WSACCO loans. The soldiers' personal contribution towards churches, schools, government projects like roads is assumed to be negligible.

2.3 REVIEW OF RELATED LITERATURE

Welfare is defined as somebody's state or condition with respect to whether she is healthy, safe, happy or prospering. (Chrono P, 2005) We are therefore concerned about the difference in welfare generated by the WSACCO loans. The main factors affecting welfare include income, family background, size of the family, loss of wealth or property due to theft or disasters like fire and floods. Other factors like access to loans can have a positive effect on welfare whereas big salaries like those given in peace keeping missions can have a positive effect; so can inheritance.

A good family background can make one inherit wealth, good education or even responsibility and upbringing. But, a bad background can lead to exposure to diseases in infancy on top of malnutrition. These factors alone can lead to the poor development of a child. On the other hand, development may or may not occur after usage of a loan as this is dependent on proper usage of the loan. The usage of a loan may generally be through purchase of a property like land which requires a large amount of money that the soldier would not otherwise have got. It is also true that loss of large sums of money or theft may negatively affect the effect of the loan on welfare of the soldier.

There are several indicators of welfare of a person. Welfare may be indicated by property like land, cattle, Personal house and Items used in daily life like household furniture telephones and the credit loaded thereto. Whereas these factors can indicate the welfare of the soldier, those factors like loss through theft and fraud can be confounders. On the other hand, inherited wealth, education level spouses can be a factor affecting the welfare of the soldier. These factors have to make such soldiers excluded or they should be controlled for. The number of years served may also affect the soldier and these have to be controlled for. The same applies to soldiers that have big salaries or those that are in restricted units.

Social welfare is about how people, communities and institutions in a society take action to provide certain minimum standards and opportunities. (Robert H N, 2001) It is generally about helping people facing contingencies. Welfare is the provision of a minimal level of well-being and social support for all citizens. In most developed countries, welfare is largely provided by

the government in addition to charities, informal social groups, religious groups, and inter-governmental organizations. In the end, this term replaces "charity" as it was known for thousands of years, being the voluntary act of providing for those who temporarily or permanently could not. With sufficiently strong assumptions, it can be specified as the summation of the welfare of all the individuals in the society. In this study, welfare will be assumed to be well-doing or well-being in any respect; the enjoyment of health and the common blessings of life; exemption from any evil or calamity; prosperity; happiness. Generally, welfare is psychological, social, related to income or standard of living. However, there are many other aspects of welfare in literature, some are societal like roads and others are difficult to measure like freedom of worship.

2.3.1 Measurement of poverty

Promotion of higher equality is an important policy issue in many countries. Similarly, in many societies poverty reduction is an important goal of public policy. The technical literature on evaluation and measurement of economic inequality and related issues has grown remarkably over the last thirty years or so. However, there does not exist unambiguous agreements about how to measure concepts like inequality and poverty in an accurate way. (Satya R. C& Pietro M, 2004)

The normative approach to the measurement of income inequality includes derivation of inequality indices that are based on reasonable and ethically attractive social value judgments. An analysis of dominance reasoning as well as other normative priorities has also been done. In order to make the social judgment concerning the indices explicit, each index is assumed to correspond to a social welfare function in a particular way. The problem of ranking alternative income distributions using different types of dominance conditions is also investigated. Then, we may assume that welfare depends absolutely on income. But income often as the sole indicator of well-being is inappropriate and should therefore be supplemented by other attributes of well-being, like literacy and public goods. Therefore, we also present a review of suggested multidimensional indicators in this context. (Satya R. C& Pietro M, 2004)

In two early contributions, Watts (1968) and Sen (1976) each stressed that poverty measures should be sensitive to the distribution of income among the poor. They argued that a given income increment matters more to a worse or poor individual than to a better or rich individual, and introduced some of the worst modern poverty measures with the special aim of incorporating this distributional aspect. The literature on poverty measurement that has developed since the pioneering contributions of Watts and Sen continues to recognize distribution-sensitivity as a major concern. (Atkinson AB, 1973) Never-the-less, there are other concerns in welfare like standard of living.

2.3.2 Standard of living.

Standard of living refers to the level of wealth, comfort, material goods and necessities available to a certain socioeconomic class in a certain geographic area. The standard of living includes factors such as income, quality and availability of employment, class disparity, poverty rate, quality and affordability of housing, hours of work required to purchase necessities, gross domestic product, inflation rate, number of vacation days per year, affordable (or free) access to quality healthcare, quality and availability of education, life expectancy, incidence of disease, cost of goods and services, infrastructure, national economic growth, economic and political stability, political and religious freedom, environmental quality, climate and safety. The standard of living is closely related to quality of life. (nn, ["Standard Of Living Definition,"](#)2011)

Standard of living is generally measured by standards such as real (i.e. inflation adjusted) income per person and poverty rate. Other measures such as access and quality of health care, income growth inequality, Disposable Energy (people's disposable income's ability to buy energy) and educational standards are also used. Examples are access to certain goods (such as number of refrigerators per 1000 people), or measures of health such as life expectancy. It is the ease by which people living in a time or place are able to satisfy their needs and/or wants.

The idea of a 'standard' may be contrasted with the quality of life, which takes into account not only the material standard of living, but also other more intangible aspects that make up human life, such as leisure, safety, cultural resources, social life, physical health, environmental quality issues, etc. More complex means of measuring well-being must be

employed to make such judgments, and these are very often political, thus controversial. Even between two nations or societies that have similar material standards of living, quality of life factors may in fact make one of these places more attractive to a given individual or group.

However, there can be problems even with just using numerical averages to compare material standards of living, as opposed to, for instance, a Pareto index (a measure of the breadth of income or wealth distribution). Standards of living are perhaps inherently subjective. As an example, countries with a very small, very rich upper class and a very large, very poor lower class may have a high mean level of income, even though the majority of people have a low "standard of living". This mirrors the problem of poverty measurement, which also tends towards the relative. This illustrates how distribution of income can disguise the actual standard of living.

Likewise, country A, a perfectly capitalist state with a planned economy with very low average per capita income would receive a higher score for having lower income inequality than country B with a higher income inequality, even if the bottom of country B's population distribution had a higher per capita income than Country A. Real examples of this include former East Germany compared to former West Germany or North Korea compared to South Korea. In each case, the state capitalist country has a low income discrepancy (and therefore would score high in that regard), but lower per capita incomes than a large majority of their neighboring counterpart. This can be avoided by using the measure of income at various percentiles of the population rather than a highly relative and controversial overall income measure.

Expenditure is chosen as proxy for household welfare because expenditure is a good proxy for permanent income and thus also for long-term average well-being. (Balisacan et al., 2003) For example, a low-income household can withdraw its savings or borrow money to consume and maintain its relative living standard. In contrast, a high-income but highly indebted household has to cut down on part of its income to pay off the debt. Moreover, data on expenditure are less difficult to gather than those on income, especially for developing countries where self-employed individuals are reluctant or unable to provide their earnings precisely. Thus, in this study, as notably used before, household expenditure per capita also is employed as an

approximation for household welfare. But, several theories on standard of living and loans have already been developed.

With only about 6 % of the total population having access to electricity, Uganda is among the countries in Sub-Saharan Africa with the lowest electrification rates. In rural areas, the rate drops to an alarming 2 % with northern and northeastern Uganda registering the lowest electrification rates. Another estimated 1 % of the population uses fuel generator sets, car batteries and solar PV systems to achieve a minimum level of electricity supply. (Ojambo F, 2001)

2.4 RELATED STUDIES

2.4.1 Standard of living

In the Vietnamese Living house-hold survey, assessment was done to find out the relationship between several factors and standard of living. (Danh M et Al, 2006) In this paper, independent variables used included: (1) Sex of the household head (Male or Female); (2) Area in which household resides (Urban or Rural); (3) Regions (divided into 5 regions; (4) Education level of household head (categorized in seven levels: Never, Primary School, Junior High School, High School, Technical Training, Vocational Training, and College or Higher); (5) Occupation of household head (categorized in seven kinds of jobs, including White Collar, Sales/Service, Agriculture, Skilled Worker, Unskilled Worker, and Other Not Working); (6) Ethnicity of household head (actually, there are 34 ethnic majorities in the country, but for the sake of simplicity, ethnicity is divided in three groups; (7) Religion of household head (like ethnicity; and (8) Other variables such as age and age-square of household head as well as log of household size are also added.

The cross-sectional estimates using data from the Vietnamese Living Household Survey VLSS9293, VLSS9798, and VLHSS2002 showed several relations while nullifying others. There were no differences in expenditure between the households with male heads and the ones with female heads; the fact that the coefficients of household heads are male in all three years shows no statistical significance. Yet, the ethnicity of household heads appears to be an important factor. In a similar study in Vietnam, the Chinese account for only a small portion of the population (1.85 percent in VLSS9293) but had higher living standards than did the

Vietnamese. Specifically, households with heads who are Chinese spent 24 percent more in 1993 and about 19.5 percent more in 1998 than households headed by Vietnamese.

Households headed by minorities other than the Chinese had lower standards of living when compared to Vietnamese households. It is unsurprising that we found higher spending in households located in the urban areas than those of the rural areas. This study also highlights that people living in regions other than the North Central Coast, with the exception of the North West region and the Central Highlands region in 2002, enjoyed a higher well-being than those of the North Central Coast region; however, the degree of benefit diminished during the period 1993–1998 except for in the South East region. In detail, in 1993, expenditure per capita of households in the South East was 57 percent higher than those of the base region—the North Central Coast; in 1998, the difference was up to around 66 percent and about 50 percent in 2002. For the Mekong River Delta region, the expenditure of households in 1998 was still higher than that of the North Central Coast region but it decreased at its sharpest rate from 53 percent in 1993 to 25 percent in 1998. This decrease was probably due to the severe typhoon in late 1997, although the difference had recovered only slightly to 28 percent by 2002.

The results show the returns of education in a trend as expected: higher education levels correlate with higher standards of living. For example, in *Micro-determinants of Household Welfare, Social Welfare, and Inequality in Vietnam* Since the dependent variable is in the form of a logarithm, the difference is $\exp(\text{coefficient})$. Here, $\exp(0.2145) = 1.239$, so that the difference is nearly 24 percent. Other comparisons are made in the same way 1993, households with the heads completing a university or higher degree spent 51 percent more than those in which the heads only finished primary school. The same difference also was found in 1998. Less improvement was seen in households with the heads having a high school degree. They only spent 21 and 19 percent in 1993 and 1998, respectively—spending which was higher than those households with heads who only finished primary school. In 2002, these differences were still evident but the magnitudes were much smaller. Usually, it is expected that people involved in white collar jobs or business work as well as skilled laborers have a higher standard of living compared with those engaged in agricultural and blue collar jobs. The findings of Vietnamese households during this period, without exception, support this expectation. As shown in Table 1,

individuals living in households with a head who had a white collar job or a job related to sales/services had a higher expenditure per capita compared to those of the reference occupation agriculture and also benefited more than those living in households with a head working in other job categories. However, in 2002 the differences in spending between households with the head being farmers or working in the agricultural sector and other jobs were not evident. It is possibly the case that in 2002, households headed by farmers and other agricultural employees were gradually catching up with the expenditure levels of households of other occupational categories. However, in order to come to a precise conclusion, this finding should be further investigated by using panel data as well as incorporating data of the three surveys, which are estimated in the following sections.

It is worth noting that the “other not working” category in the regression includes not only the unemployed but also those who were retired and not working for any reason (e.g., illness, leave) at the time of interviewing. Hence, one may find that the households headed by individuals adhering to this group had higher living standards than those of the base category. The age of the household head also affected the expenditure of that household, with higher spending for older household heads, but negative coefficients of *age_square* of the household head in the regressions imply that this disparity will actually decrease at a certain age, which is what we expected. Importantly, one should be careful when interpreting negative coefficients of the variable *LogHHsize* without taking account of the estimate of equivalence scales as suggested by Deaton. (Deaton A, 1997) This does not mean that households with more members tend to have lower expenditure per capita than do those with fewer members: if we substitute total expenditure per capita with another welfare indicator and divide total household expenditure by “adult-Micro-determinants of Household Welfare, Social Welfare, and Inequality in Vietnam scale equivalents,” the result is likely to change. (Wodon, 1999; Glewwe et al, 1998)

2.4.2 Loans and previous studies.

The National Bank for Agriculture and rural development (NABARD 2000) of India conducted a study on the impact of Micro Finance (MF) on the living standards of Self help Groups (SHGs) members. (Jerinabi U, 2006) The study aimed to find out how far the SHG bank linkage program had lightened the burden of life for the average member of a SHG and to

analyze the betterment of households by gaining access to microfinance. The study covered 560 SHG member households from 223 SHGs spread over 11 states in India. It showed that there were perceptible and wholesome changes in the living standards of the SHG members, in terms of ownership of assets, increase in savings and borrowing capacity, income generating activities and income levels. The study revealed that almost all the members developed saving habits in the post-SHG situation as against 23% of households who had this habit earlier and the average borrowing per year household increased from Rs. 4,282 to 8,341. The study concluded that the involvement in the group significantly contributed in improving the self confidence of the members. The feelings of self worth and communication with others improved after association with the SHGs and the members were relatively more assertive in confronting social evils and problem situations. As a result, there was a fall in family violence.

CHAPTER THREE

METHODOLOGY

3.1 RESEARCH DESIGN

This study was observational, cross-sectional prospective, descriptive study by Chi-square and Fisher's tests in a logistic regression model.

3.2 STUDY POPULATION

The study was concerning a population of 29,000 soldiers in Uganda.

3.2.1 Inclusion criteria

Soldiers who are serving in Uganda, who have not been convicted

3.2.2 Exclusion criteria

Soldiers who have lost property through theft, floods or house hold fire.

Insane soldiers.

Soldiers with loans from other banks.

Soldiers who have been to missions outside the country.

Soldiers who have had inheritance including a house.

3.2.3 Sample Size

A preliminary study done estimated that there are about 1480 officers and 28,520 men giving a total of 29,000 soldiers in Uganda. Using a confidence of 95 % and an error of 5 %, a sample size of 381 soldiers was calculated by Sloven's formula. (Guilford A.J.P. & Frucher. B, 1973)

$$n = \frac{N}{1 + Ne^2}$$

Where N = 29,000

n = Sample size

e = Standard error of the mean

$$n = \frac{29,000}{1 + 29,000 \times 0.05^2}$$

$$n = 381 \text{ soldiers}$$

3.2.4 Sampling Procedure.

A multistage sampling procedure was used. It involved 10 randomly selected units in regions with the largest number of soldiers per unit.

3.3 RESEARCH INSTRUMENTS

The research was carried by interview, documentary evidence of land title, education status and rank. The variables will be entered into a pretested questionnaire which will be filled by trained examiners, ANNEX II.

- a. Variables for data collection.
 - (1) Rank.
 - (2) Gender.
 - (3) Education.
 - (4) Marital status.
 - (5) WSACCO Loan taken
 - (6) Possession of a personal house.
 - (7) Possession of a mattress.
 - (8) Possession of furniture.
 - (9) Electricity
 - (10) Running water.
 - (11) Electrical equipment.
 - (12) Possession of Land.
 - (13) Possession of Cows and other domestic animals
 - (14) Possession of a personal business
 - (15) Possession of a Mobile telephone.
 - (16) Satisfaction with WSACCO.

- b. Questionnaires which will have the following will be excluded:
 - (1) Loss of household property through theft, floods or house-hold fire.
 - (2) History of psychiatric illness in a soldier.
 - (3) Soldiers with loans from other banks.
 - (4) Soldiers who have been to missions outside the country.

(5) Soldiers who have had inheritance including a house.

c. Reliability of instrument. The questionnaire had a reliability index of 0.87 and a relevance index of 0.86.

The questionnaire was filled with indelible ink to avoid erasure and kept under lock and key to prevent pilferage. Information was verified by observation, documentary support or collation. Information that could not be proved was checked by triangulation.

3.4 PROCEDURE AND DATA COLLECTION

3.4.1 Before Administration Of The Questionnaire.

After approval of the research proposal and permission granted, the principal investigator printed 400 copies of the questionnaire and consent forms. The research assistants travelled from Kampala to the different stations where soldiers were found and interviewed. the interviews started in Masindi Artillery division, then Arua barracks, gulu, Acholi Pii, Moroto, Tororo, Jinja, Ssinga, Kakiri and Bombo Army Head quarters.

3.4.2 During Administration Of The Questionnaire.

The research objectives were explained in the language understood to the individual soldiers who signed a consent form. The questions were read in the language the soldier understands. The soldiers' responses were kept confidential.

3.4.3 After administration of the questionnaire.

Soldiers were assisted to fill the questionnaire by the research assistants. Soldiers who opted out of the study at any one time were allowed to do so. Questionnaires filled with information that necessitated exclusion were extracted. Information like hard copies of land tittles was verified by inspecting the documents. The observable information was filled after observation. Averages of numbers will be found and used as cut offs for comparing the two groups in a two by two table.

CHAPTER FOUR RESULTS

4.1 ACCESS TO WSACCO LOANS

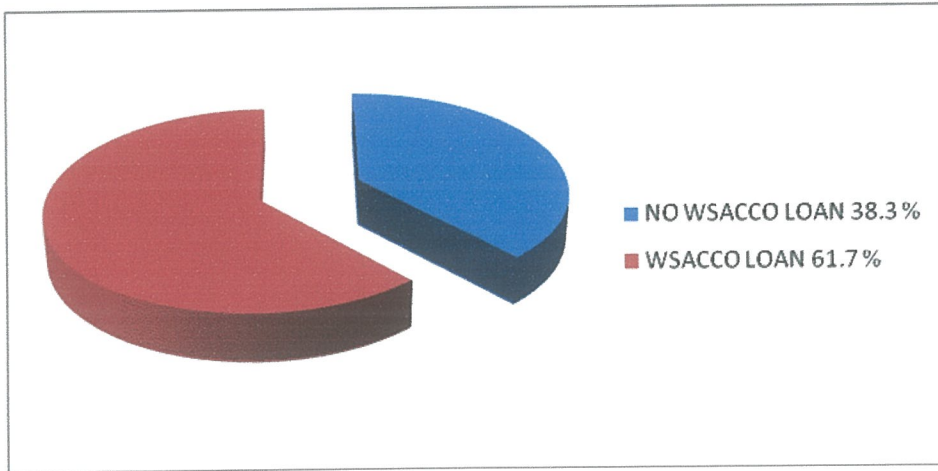
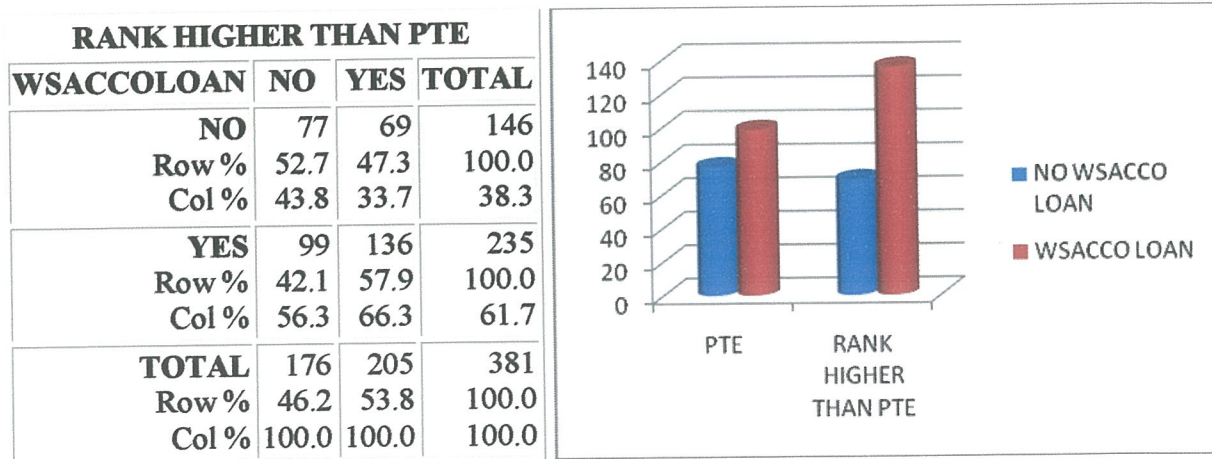


Figure 4-1 Pie-chart Showing Access to WSACCO Loans

As shown in figure 4-1 above, out of 381 soldiers, 146 (38.3%) had not taken loans and 235 (61.7 %) had taken WSACCO loans before.

4.1.2 Rank and Access to WSACCO Loans



**Table 4-1: Rank and Access to
WSACCO Loans**

**Figure 4-2: Bar Chart Showing
Rank and Access to WSACCO Loans**

Among the soldiers that had not taken loans, those who were privates were 77 (52.7 %) and those with a rank higher than privates were 69 (47.3 %) as shown in table 4-1 and figure 4-2. Among soldiers that had taken loans, those who were or private rank were 99 (42.1 %) and those that were of higher rank were 136 (57.9 %). The odds ratio was 1.5330 at a 95 % confidence interval of 1.0118 to 2.3226. The risk ratio of 1.2519 showed that there was 25 % higher chance of a higher rank having a loan compared to privates. The p-value was 0.04339 proving the null hypothesis not applicable.

4.1.2 Gender and Access to WSACCO loans

WSACCOLOAN			
SEX	NO	YES	TOTAL
F	6	2	8
Row %	75.0	25.0	100.0
Col %	4.1	0.9	2.1
M	140	233	373
Row %	37.5	62.5	100.0
Col %	95.9	99.1	97.9
TOTAL	146	235	381
Row %	38.3	61.7	100.0
Col %	100.0	100.0	100.0

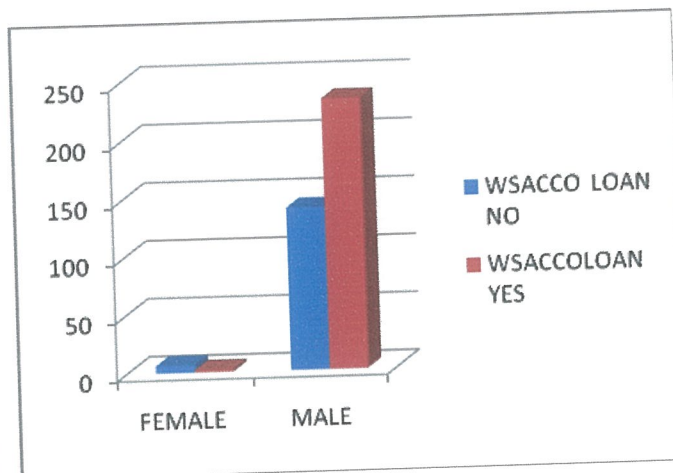


Table 4-2 Gender and Access to WSACCO loans

Figure 4-3 Gender and Access to WSACCO loans

Out of the 381 soldiers, eight (2.1 %) were female and 373 (97.9%) were male (Table 4-2 and figure 4-3). Out of 8 soldiers who were female, 2 (25 %) had taken a WSACCO loan and 6 (75%) had not taken a WSACCO loan. Out of the 373 soldiers who were male, 233 (62.5 %) had taken a WSACCO loan and 140 (37.5 %) had not taken a WSACCO loan. At a risk ratio of 1.9982, it was clear that there was a two-fold chance of being male and having access to a WSACCO loan. The odds ratio was 4.9929 with a confidence interval of 0.9940 to 25.0784 and

a p-value of 0.0386 by Fisher's test with a higher chance of taking a loan if one was masculine and the relationship was statistically significant.

4.1.4 BEING MARRIED AND ACCESS TO A WSACCO LOAN

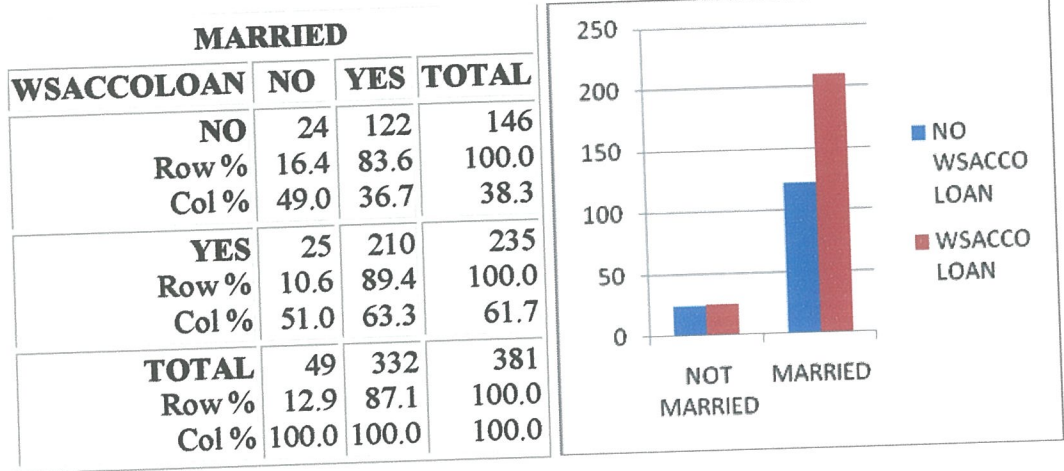


Table 4-3 Being Married and Access to A WSACCO Loan

Figure 4-4 Being Married and Access to A WSACCO Loan

Out of the 381 soldiers, 49 (12.9%) were not married and 332 (87.1%) were married (Table 4-3 and figure 4-4). Out of 49 soldiers who were not married, 24 (49%) had taken a WSACCO loan and 25 (51.0%) had not taken a WSACCO loan. Out of the 332 soldiers who were married, 122 (36.7%) had not taken a WSACCO loan and 210 (63.3%) had taken a WSACCO loan. Ata risk ratio of 1.5452, it was clear that there was a 55 % chance of being married and having access to a WSACCO loan. The odds ratio was 1.652 with a confidence interval of 0.942 to 3.0198 and a p-value of 0.0533 by Mid-p exact test with a higher chance of taking a loan if one was married and the relationship was close to statistical significance.

4.1.5 RELATIONSHIP BETWEEN DIFFERENT EDUCATION STANDARDS AND ACCESS TO WSACCO LOANS.

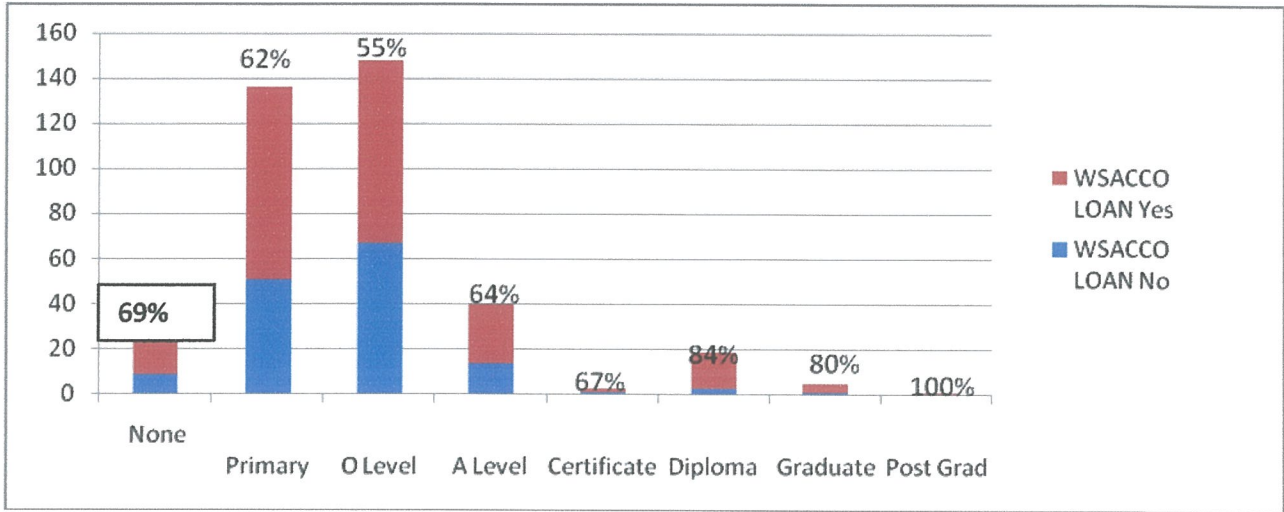


Figure 4-6 Different Education Standards and Access to a WSACCO loan

Study findings in figure 4-6 reflect that 7.6% of the respondents had never been to school, 35.8% Primary education, 38.6% were of O Level standard, 10.7% of the respondents had A level Education, 0.8% had certificates, 5.0% were diploma holders, 0.3% Post Graduates, while the remaining 1.3 had attained post graduate education.

In respect to education, the majority of the respondents who rely on WSACCO 85 (22.1%) are of primary level education followed by O-Level 81(21.1%), A Level 26 (6.8%), those that have never been to school 20 (5.2%), Diploma holders 16 (4.1%), Under graduates 4 (1.1%), Certificate holders 2(0.52%) while the Post Graduates only composed of 1(0.26%) of the total responses. Noteworthy, 69 % of soldiers without any education took WSACCO loans. Similarly, Primary one soldiers were 62%, O’ Level were 55 %, A Level were 64 %, Diploma holders were 84 %, graduates were 80 % and postgraduates were 100 %. Clearly, the percentage

of loan usage gets higher with higher education status. The outlier was those soldiers with certificates.

4.5 FREQUENCY OF DIFFERENT FAMILY SIZES

NO OF FAMILY MEMBERS	Frequency	Percent	Cum Percent
1	46	12.1%	12.1%
2	13	3.4%	15.5%
3	27	7.1%	22.6%
4	40	10.5%	33.2%
5	49	12.9%	46.1%
6	46	12.1%	58.2%
7	38	10.0%	68.2%
8	34	8.9%	77.1%
9	16	4.2%	81.3%
10	28	7.4%	88.7%
11	6	1.6%	90.3%
12	12	3.2%	93.4%
13	3	0.8%	94.2%
14	5	1.3%	95.5%
15	6	1.6%	97.1%
16	1	0.3%	97.4%
17	3	0.8%	98.2%
18	1	0.3%	98.4%
20	1	0.3%	98.7%
36	1	0.3%	98.9%
40	1	0.3%	99.2%
50	1	0.3%	99.5%
60	1	0.3%	99.7%
80	1	0.3%	100.0%
Total	380	100.0%	100.0%

Table 4-5 Showing Frequency of Occurrence of Different Family Sizes

Three hundred respondents gave the number of their family members (Table 4-5). The average number of family members among the UPDF soldiers was 6.7 rounded to 7. However, the commonest number of family members was five and the median was 6. The smallest family had 1 member and the largest had 80.

4.3. WSACCO LOANS AND STANDARD OF LIVING

4.3.1 Soldiers' Taking WSACCO Loans and Possession of Furniture

FURNITURE

WSACCO LOAN	NO	YES	TOTAL
NO	79	67	146
Row %	54.1	45.9	100.0
Col %	43.6	33.5	38.3
YES	102	133	235
Row %	43.4	56.6	100.0
Col %	56.4	66.5	61.7
TOTAL	181	200	381
Row %	47.5	52.5	100.0
Col %	100.0	100.0	100.0

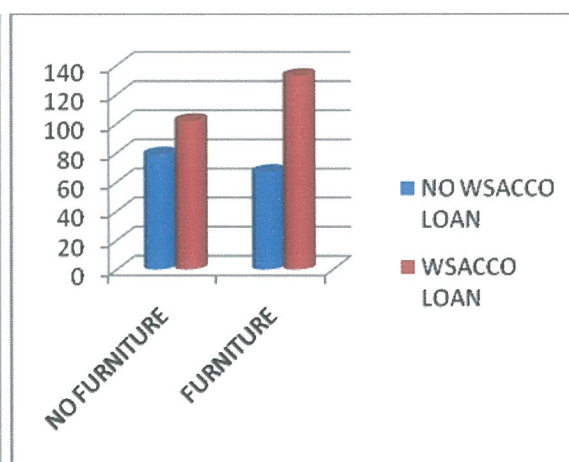


Table 4-6 WSACCO Loan and Use of Furniture

Figure 4-7 WSACCO Loan And Use of Furniture

According to Table 4-6 and figure 4-7, among the soldiers who had not taken WSACCO loans, those who had any form of furniture in their rooms were 67 (45.9 %) and those who did not have any furniture were 79 (54.9 %). But out of the 235 who had taken a loan, 133 (56.6 %) had at least one piece of furniture and 102 (43.4 %) did not possess any furniture in their rooms. Having taken a loan from Wazalendo SACCO was strongly associated with a 25 % higher chance of possession of a single or more pieces of furniture with a risk ratio of 1.2466. Odds ratio of 1.53 had a confidence interval of 1.015 to 2.329 while the p-value was 0.0419 showing that the relationship was statistically significant.

4.3.2 Soldiers Who Took WSACCO loans and Use of Mattress(es)

MATTRESS(ES)			
WSACCO LOAN	NO	YES	TOTAL
NO	49	97	146
Row %	33.6	66.4	100.0
Col %	41.9	36.7	38.3
YES	68	167	235
Row %	28.9	71.1	100.0
Col %	58.1	63.3	61.7
TOTAL	117	264	381
Row %	30.7	69.3	100.0
Col %	100.0	100.0	100.0

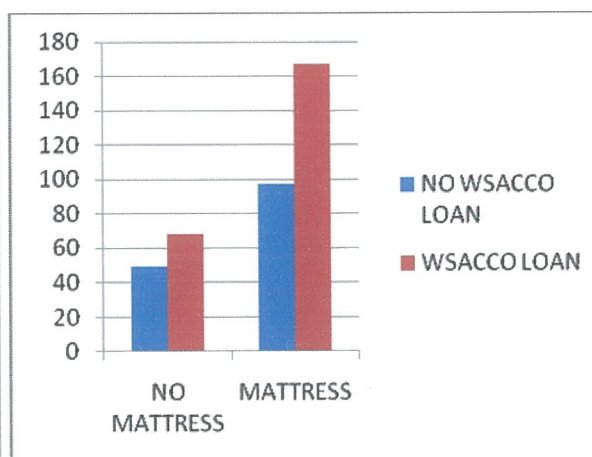


Table 4-7 WSACCO loans and Mattress(es)

Figure 4-8 WSACCO loans and use of Mattress(es)

Out of the 146 soldiers that had not taken a loan, 66.4 % had a mattress or more in their home and 33.4 % had no mattress (table 4-7 and Figure 4-8). However, among the 235 that had ever taken a WSACCO loan 71.1 % had a mattress and 28.9 % did not possess a single mattress in their home. Although possession of a mattress was higher among the soldiers that had taken a loan by 16 % at a risk ratio of 1.1599, the difference was not statistically significant as the odds ratio was 1.2406 and the confidence interval was 0.7955 – 1.9348 with a range including one while the p-value was 0.3413; underlining the triviality of the relationship.

4.3.3 WSACCO Loans and Possession of a Personal House

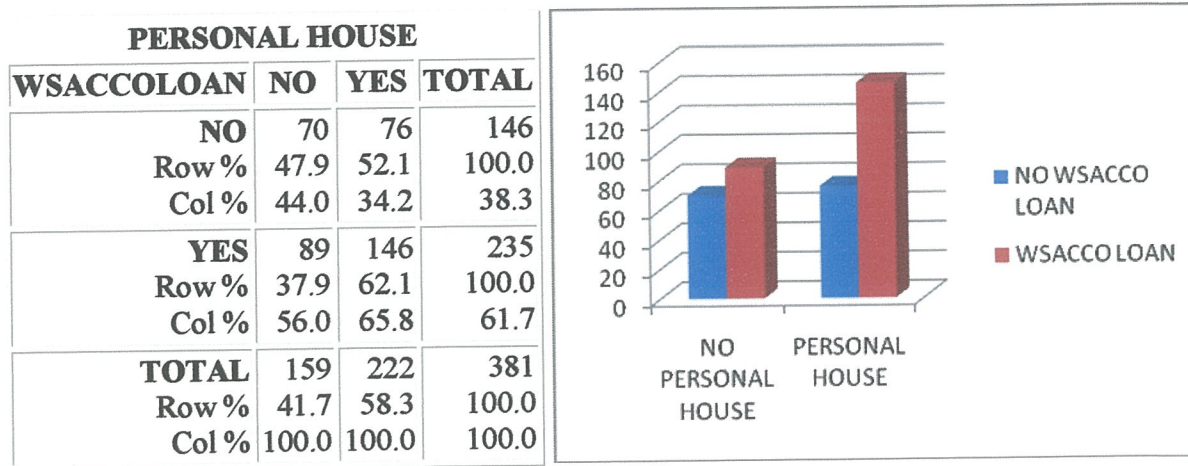


Table 4-8 WSACCO Loans and Possession of a House

Figure 4-9 WSACCO Loans and Possession of a Personal House

Among the 146 soldiers that had not taken a WSACCO loan, there were 70 (47.9%) soldiers who did not have a house (Table 4-8 and figure 4-9). While 76 (52.1%) had a house. On the other hand, among the 235 soldiers that had taken a loan, 89 (37.9%) had no personal house while 146 (62.1%) had a house soldiers that had taken a loan taken a loan. The risk ratio was 1.2660 meaning that there were 27 % higher chances of having a house if one had taken a loan from WSACCO. The odds ratio was 1.5109 and the confidence interval was 1.0015 to 2.2955 with a p-value of 0.027 and a risk ratio of 1.2660.

4.3.4 WSACCO Loan and Having a House With a Ceiling

CEILING			
WSACCO LOAN	NO	YES	TOTAL
NO	129	17	146
Row %	88.4	11.6	100.0
Col %	38.1	40.5	38.3
YES	210	25	235
Row %	89.4	10.6	100.0
Col %	61.9	59.5	61.7
TOTAL	339	42	381
Row %	89.0	11.0	100.0
Col %	100.0	100.0	100.0

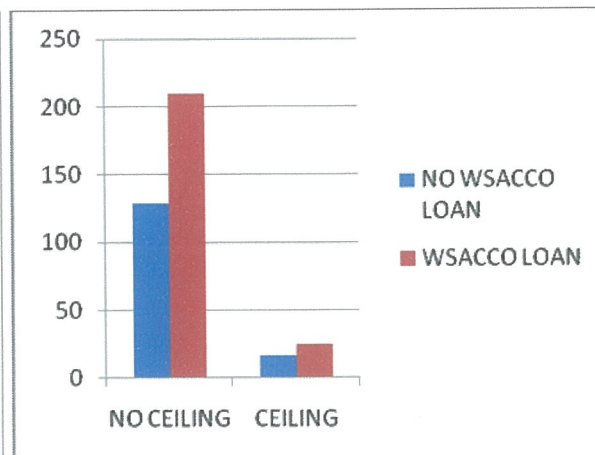


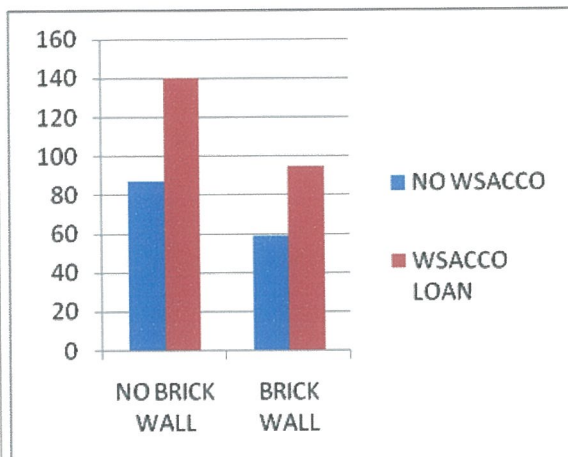
Table 4-9 WSACCO Loan and Use of a Ceiling

Figure 4-10 WSACCO Loan and Use of a Ceiling

Out of the 146 soldiers that had not taken a WSACCO loan, 129 (88.4%) had no ceiling nor house and 17 (11.6%) had a ceiling in their house (table 4-9 & Figure 4-10). On the other hand, out of 235 soldiers who had taken a loan, 25 (10.6%) had a ceiling in their house. The risk ratio was 0.9887, meaning that there were 1 % lower chances of having a house with a ceiling when one had taken a WSACCO loan. The odds ratio was 0.9034, with a confidence interval of 0.4697 to 1.7374 and a p-value of 0.44 by Fisher's exact test.

4.3.5 WSACCO Loan And Possession Of A Brick-Walled House

BRICK WALL			
WSACCO LOAN	NO	YES	TOTAL
NO	87	59	146
Row %	59.6	40.4	100.0
Col %	38.3	38.3	38.3
YES	140	95	235
Row %	59.6	40.4	100.0
Col %	61.7	61.7	61.7
TOTAL	227	154	381
Row %	59.6	40.4	100.0
Col %	100.0	100.0	100.0



**Table 4-10 WSACCO loans and
Use of a Brick-walled House**

**Figure 4-11 WSACCO loans and
Possession of a Brick-walled House**

Out of the 146 soldiers that had not taken a WSACCO loan, 87 (59.6%) had no brick wall or had a house with mud and wattle wall and 59 (40.4%) had a brick walled house (Table 4-10 and figure 4-11). On the other hand, out of 235 soldiers who had taken a loan, 95 (40.4%) had a brick walled house. The percentage of those with a brick walled house is practically the same in the WSACCO loan group and the group that did not take a loan. The odds ratio was 1.0006, showing that they had a subtle difference with a confidence interval of 0.6569 – 1.5242, a risk ratio of 1.0002 and a p-value of 0.5422 by Fisher's exact test.

4.3.6 WSACCO Loan and Having a House with a Cemented Floor

CEMENT FLOOR			
WSACCO LOAN	NO	YES	TOTAL
NO	100	46	146
Row %	68.5	31.5	100.0
Col %	41.2	33.3	38.3
YES	143	92	235
Row %	60.9	39.1	100.0
Col %	58.8	66.7	61.7
TOTAL	243	138	381
Row %	63.8	36.2	100.0
Col %	100.0	100.0	100.0

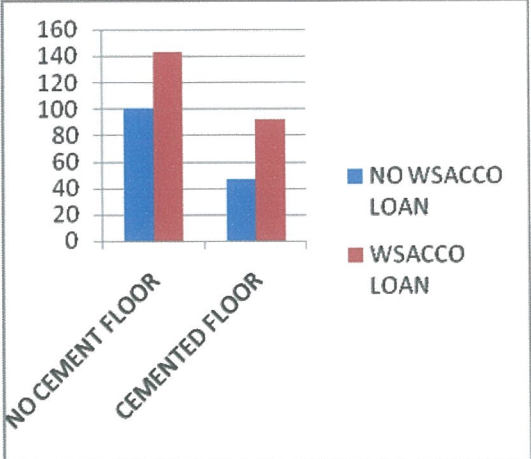


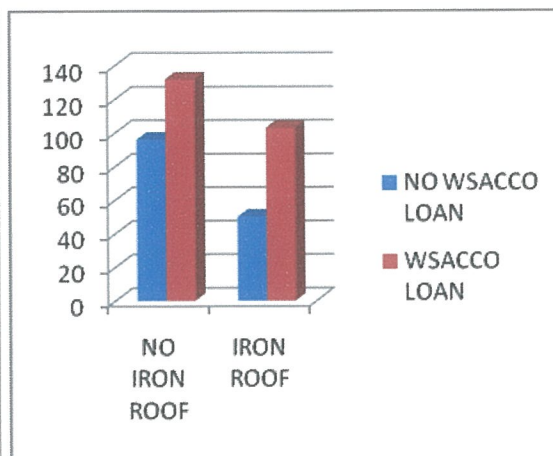
Table 4-11 WSACCO Loan and having a Cemented Floor

Figure 4-12 WSACCO Loan and Having a House with a Cemented Floor

Out of the 146 soldiers that had taken a WSACCO loan, 100 (68.5%) had no cemented floor in their house or had no house and 46 (31.5%) had a cemented floor in their house (Table 4-11 and figure 4-12). On the other hand, out of 235 soldiers who had taken a loan, 92 (39.1%) had a cemented floor in their house. Compared to the soldiers that had not taken a loan, those that had taken a loan had a 13 % higher chance of having a house with a cemented floor at a risk ratio of 1.1256. The odds ratio was 1.3986, with a confidence interval of 0.904 to 2.164 and a p-value of 0.1313.

4.3.7 WSACCO Loan and Having a House with an Iron Roof

IRON ROOF			
WSACCO LOAN	NO	YES	TOTAL
NO	96	50	146
Row %	65.8	34.2	100.0
Col %	42.1	32.7	38.3
YES	132	103	235
Row %	56.2	43.8	100.0
Col %	57.9	67.3	61.7
TOTAL	228	153	381
Row %	59.8	40.2	100.0
Col %	100.0	100.0	100.0



**Table 4-12 WSACCO Loan and
Using an Iron Roof**

**Figure 4-13 WSACCO Loan and Having
a House with an Iron Roof**

Out of the 146 soldiers that had not taken a WSACCO loan, 96 (65.8%) had no iron roofed house and 50 (34.2%) had an iron roofed house (Table 4-12 and Figure 4-13). On the other hand, out of 235 soldiers who had taken a loan, 132 (56.2%) had an iron roofed house. The risk ratio was 1.1706 giving a 17 % higher chance of having a house with an iron roof when one had taken a WSACCO loan. The odds ratio was 1.5, with a confidence interval of 1.0005 to 2.164 and a p-value of 0.03987.

4.3.8 WSACCO Loan and Having Running Water in the House

RUNNING WATER			
WSACCO LOAN	NO	YES	TOTAL
NO	138	8	146
Row %	94.5	5.5	100.0
Col %	39.5	25.0	38.3
YES	211	24	235
Row %	89.8	10.2	100.0
Col %	60.5	75.0	61.7
TOTAL	349	32	381
Row %	91.6	8.4	100.0
Col %	100.0	100.0	100.0

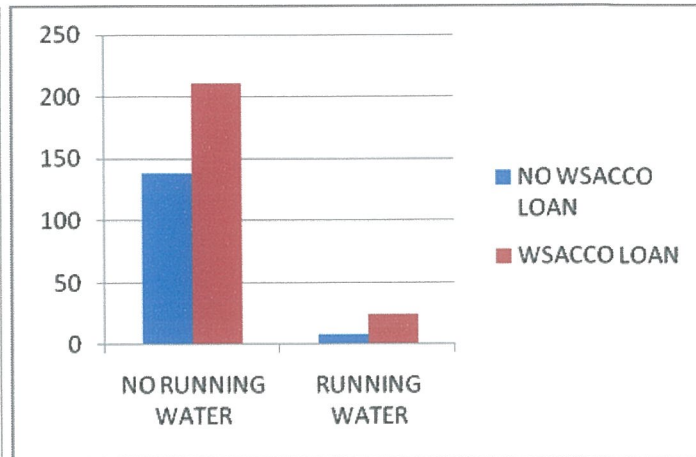


Table 4-13 WSACCO Loan and Running Water in the House

Figure 4-14 WSACCO Loan and Having Running Water in The House

Out of the 146 soldiers that had not taken a WSACCO loan, 138 (94.5%) either had no running water in their personal house or had no house and 5 (5.5%) had running water in their personal house (Table 4-13 and figure 4-14). On the other hand, out of the 235 soldiers who had taken a loan, 211 (89.8%) either had no running water in their personal house or had no personal house. But 24 (10.2%) soldiers had a personal house with running water. The odds ratio was 1.9621, with a confidence interval of 0.8569 to 4.4927 and a p-value of 0.053 and 0.073 by Fisher's exact test. At a risk ratio of 1.0527, there was only a 5 % higher chance of having a house with running water when one had taken WSCCO loan. This result was near statistical significance.

4.3.8 WSACCO Loan and Having Electric Equipment in The House

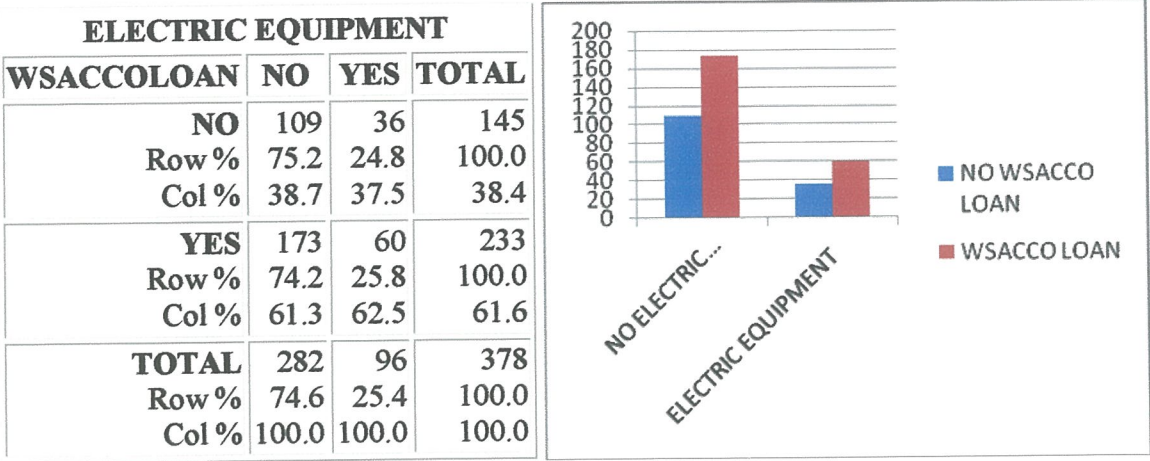


Table 4-14 WSACCO Loan and Electric Equipment

Figure 4-15 WSACCO Loan and Having Electric Equipment in the House

As far as having electric equipment is concerned, only 378 respondents were able to give satisfactory answers and of these 145 ha not taken a WSACCO loan and 233 had taken one. Out of the 145 soldiers that had not taken a WSACCO loan, 109 (75.2%) did not have a single electric equipment in their house and 36 (24.8%) had at least one electric equipment in the house (Table 4-14 and figure 4-15). On the other hand, out of 233 soldiers who had taken a loan, 173 (74.2%) had an electric garget or more in house and 60 (61.6%) had none. The risk ratio was 1.0124; meaning that there was a one percent higher chance of someone with a WSACCO loan having electric equipment at home. The odds ratio was 1.0501, with a confidence interval of 0.6513 to 1.693 and a p-value of 0.84103 showing that the relationship was not statistically significant.

4.3.9 WSACCO Loan and Using Electricity

ELECTRICITY			
WSACCO LOAN	NO	YES	TOTAL
NO	134	12	146
Row %	91.8	8.2	100.0
Col %	39.0	32.4	38.3
YES	210	25	235
Row %	89.4	10.6	100.0
Col %	61.0	67.6	61.7
TOTAL	344	37	381
Row %	90.3	9.7	100.0
Col %	100.0	100.0	100.0

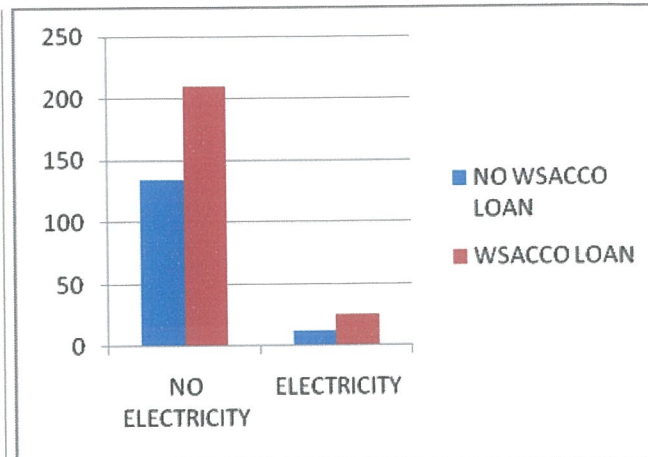


Table 4-15 WSACCO Loan and Using Electricity

Figure 4-16 WSACCO Loan and Using Electricity

Out of the 146 soldiers that had not taken a WSACCO loan, 134 (91.8%) had no grid or solar electricity in their house or did not possess a house and 12 (8.2%) had electricity in their personal house (Table 4-15 and Figure 4-16). On the other hand, out of 235 soldiers who had taken a loan, 210 (89.4%) did not possess a house with electricity while 25 (10.6%) had installed electricity in their personal house. The risk ratio was 1.027. What this equates to is a three percent higher chance of a person with a WSACCO loan having electricity; a trivial difference. The odds ratio was 1.3294, with a confidence interval of 0.6460 to 2.7356 and a p-value of 0.2779 by Fisher's exact test.

4.4 WSACCO LOANS AND PROPERTY

4.4.1 WSACCO Loans Possession of Land

LAND POSESSION			
WSACCO LOAN	NO	YES	TOTAL
NO	85	60	145
Row %	58.6	41.4	100.0
Col %	41.3	34.5	38.2
YES	121	114	235
Row %	51.5	48.5	100.0
Col %	58.7	65.5	61.8
TOTAL	206	174	380
Row %	54.2	45.8	100.0
Col %	100.0	100.0	100.0

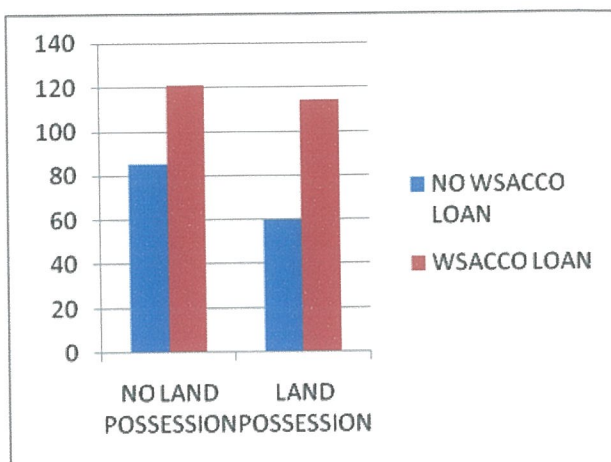


Table 4-16 WSACCO Loans Possession of Land

Figure 4-17 WSACCO Loans Possession of Land

Out of the 146 soldiers that had not taken a WSACCO loan, 85 (58.6%) did not possess land and 60 (41.4%) had personal land (Table 4-16 and Figure 4-17). On the other hand, out of 235 soldiers who had taken a loan, 121 (51.5%) had a personal land title and 114 (48.5%) did not possess land. The risk ratio was 1.1385; meaning that there was a 14 % higher chance of a person with a WSACCO loan to have land. The odds ratio was 1.335, with a confidence interval of 0.8788 to 2.0272 and a p-value of 0.4381 showing a slight increase in land possession by soldiers who had taken loans but which was not statistically significant.

4.4.2 WSACCO Loan and Possession of Four or More Cows

4 COWS OR MORE			
WSACCOLOAN	NO	YES	TOTAL
NO	115	31	146
Row %	78.8	21.2	100.0
Col %	40.6	31.6	38.3
YES	168	67	235
Row %	71.5	28.5	100.0
Col %	59.4	68.4	61.7
TOTAL	283	98	381
Row %	74.3	25.7	100.0
Col %	100.0	100.0	100.0

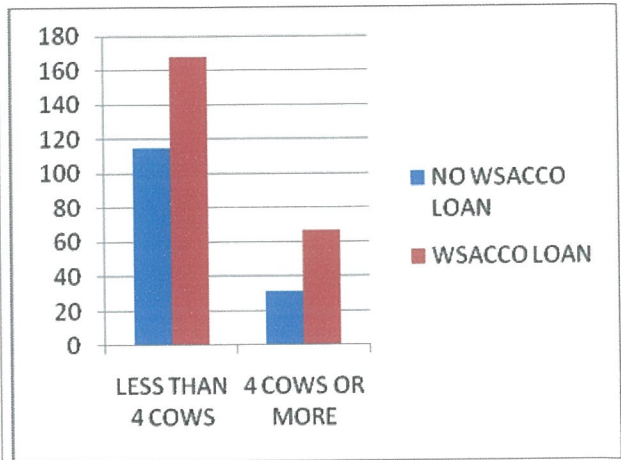


Table 4-17 WSACCO Loan and Possession of Four or More Cows

Figure 4-18 WSACCO Loan and Possession of Four or More Cows

Since the average number of cows possessed by a soldier in UPDF was four, the cutoff of four was used to assess the different between the group that took WSACCO loans and those that did not (Table 4-17 and Figure 4-18)). Out of the 146 soldiers that had not taken a WSACCO loan, 115 (78.8%) had less than four cows and 31(21.2%) had more than four cows. On the other hand, out of 235 soldiers who had taken a loan, 168 (71.5%) had less than four cows and 67 (28.5%) had more than four cows. The risk ratio was 1.1018 meaning that there was a 10 % higher chance of a person with a WSACCO loan having four or more cows. The odds ratio was 1.48, with a confidence interval of 0.9087 to 2.4086 and a p-value of 0.05744 showing an increase in number of soldiers with more than four cows that was not statistically significant.

4.4.3 WSACCO Loan and Having a Mobile Telephone

MOBILE PHONES			
WSACCOLOAN	NO	YES	TOTAL
NO	68	78	146
Row %	46.6	53.4	100.0
Col %	46.9	33.1	38.3
YES	77	158	235
Row %	32.8	67.2	100.0
Col %	53.1	66.9	61.7
TOTAL	145	236	381
Row %	38.1	61.9	100.0
Col %	100.0	100.0	100.0

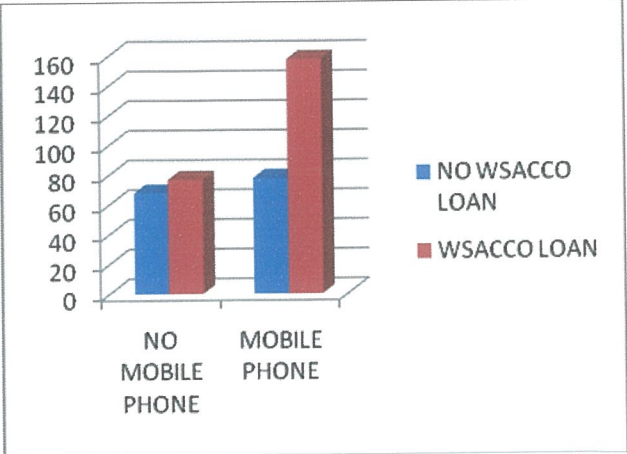


Table 4-18 WSACCO Loan and Having a Mobile Telephone

Figure 4-19 WSACCO Loan and Having a Mobile Telephone

Out of the 146 soldiers that had not taken a WSACCO loan, 68 (46.6%) had no mobile telephone and 78 (53.4%) had a mobile telephone or more with them (Table 4-18 and Figure 4-19). On the other hand, out of 235 soldiers who had taken a loan, 77 (32.8%) had no mobile telephone and 158 had a mobile telephone. The risk ratio was 1.4215 meaning that the soldier who had taken a loan had a 42 % higher chance of having a mobile telephone. The odds ratio was 1.7889, with a confidence interval of 1.174 to 2.7341 and a p-value of 0.0069 with statistically greater usage of the mobile telephone among WSACCO loan users. The 236 Soldiers had total air time of 1,041,832 shillings and an average of 4,414 shillings per person with a mobile phone and 2,734 shillings per person overall.

4.4.4 WSACCO Loan and Possession of a Personal Business

PERSONAL BUSINESS			
WSACCO LOAN	NO	YES	TOTAL
NO	124	22	146
Row %	84.9	15.1	100.0
Col %	42.6	24.4	38.3
YES	167	68	235
Row %	71.1	28.9	100.0
Col %	57.4	75.6	61.7
TOTAL	291	90	381
Row %	76.4	23.6	100.0
Col %	100.0	100.0	100.0

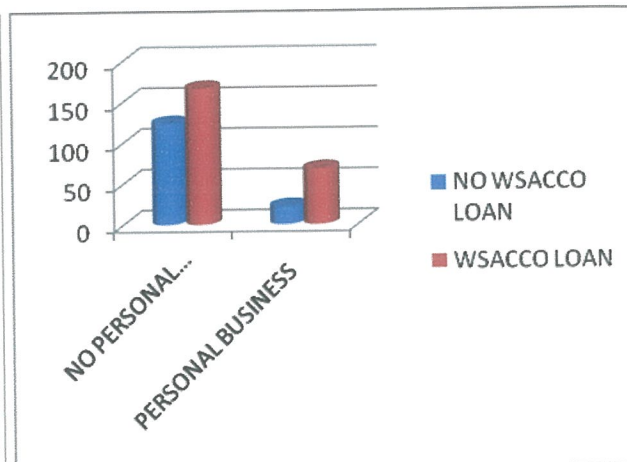


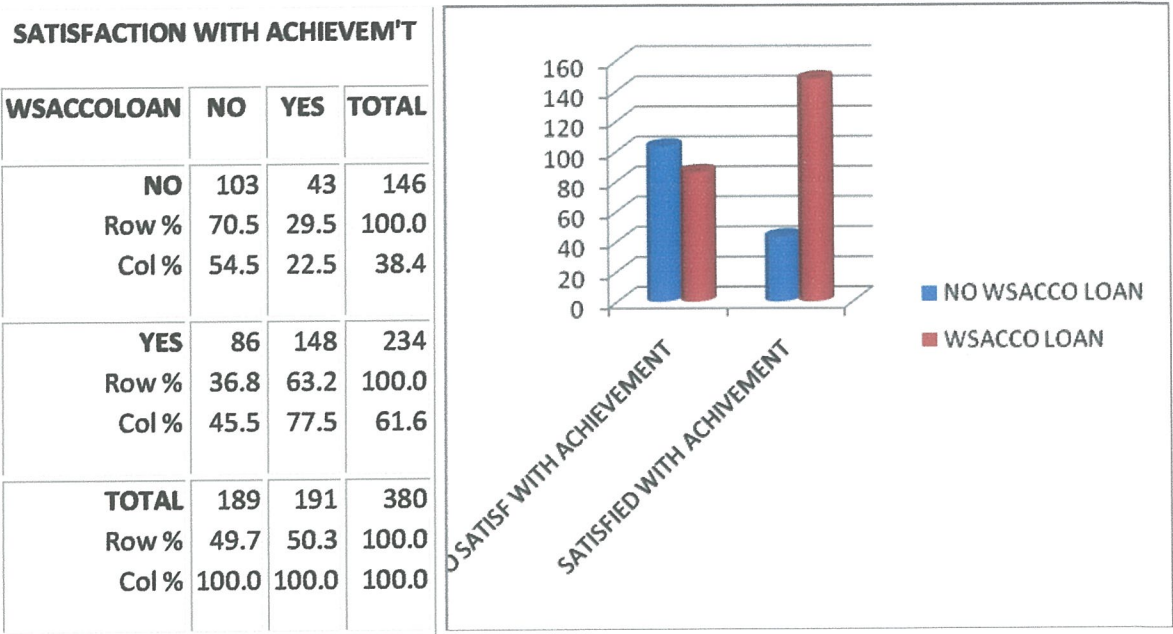
Table 4-19 WSACCO Loan and Possession of A Personal Business

Figure 4-20 WSACCO Loan and Possession of A Personal Business

Out of the 146 soldiers that had not taken a WSACCO loan, 124 (84.9%) did not have a personal business and 22 (15.1%) had a personal business (Table 4-19 and Figure 4-20). On the other hand, out of 235 soldiers who had taken a loan, those who did not have a personal business were 167 (71.1%) and those who had a personal business were 68 (28.9%). The risk ratio was 1.1951, so, there was a 20 % higher chance of a person who had taken a WSACCO loan having a personal business. The odds ratio was 2.295, with a confidence interval of 1.3456 to 3.945 and a p-value of 0.00194; showing a very strong relationship with twice the chance of having a personal business when one has ever taken a WSACCO loan than when he has not.

4.5 SATISFACTION

4.5.1 WSACCO Loan and Satisfaction with Achievement

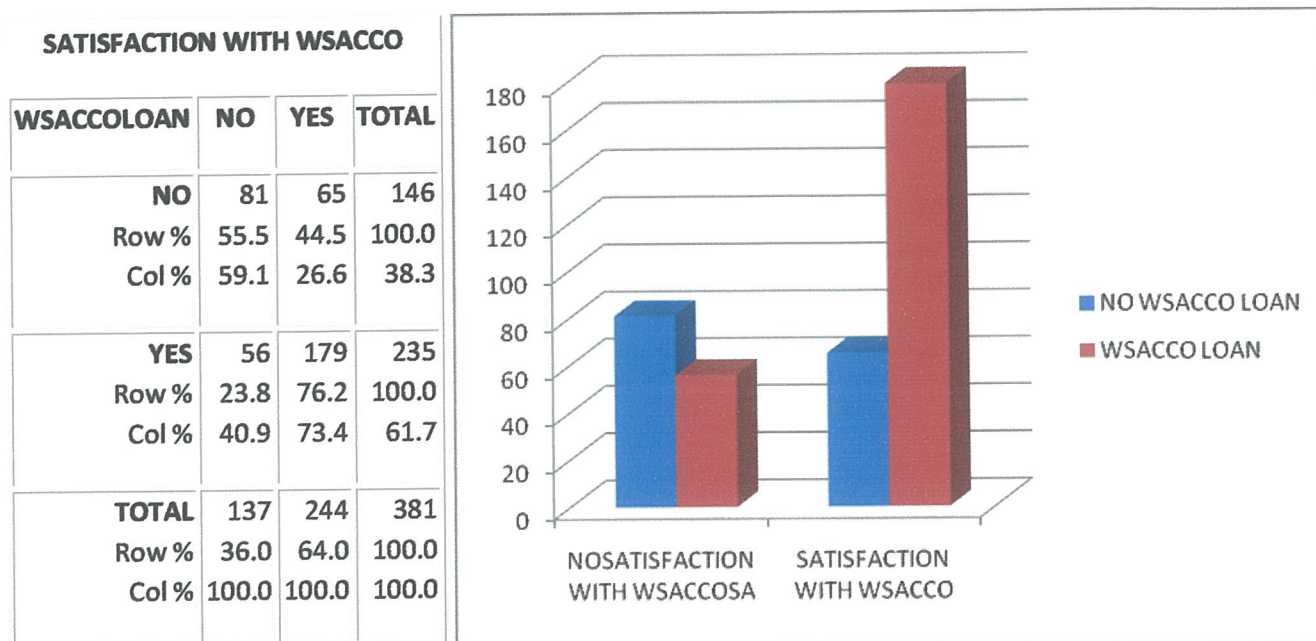


**Table 4-20 WSACCO Loan
and Satisfaction with
Achievement**

**Figure 4-21 WSACCO Loan and
Satisfaction with Achievement**

Out of the 146 soldiers that had not taken a WSACCO loan, 103 (70.5 %) were not satisfied with achievement and 43 (29.5 %) were satisfied with achievement (Table 4-20 and figure 4-21). On the other hand, out of 234 soldiers who had taken a loan, those who were not satisfied with achievement were 86 (36.8 %) and those who were satisfied with achievement were 148 (63.2%). The odds ratio was 4.1222, with a confidence interval of 2.6439 to 6.4272 and a p-value of 0.0000000001 showing a very strong relationship with a risk ratio of 1.9 showing that there was twice the chance of being satisfied when one has ever taken a WSACCO loan than when he has not.

4.5.2 WSACCO Loan and Satisfaction with WSACCO



**Table 4-21 WSACCO Loan
and Satisfaction with
WSACCO**

**Figure 4-22 WSACCO Loan and
Satisfaction with WSACCO**

From table 4-20 and figure 4-21, out of the 146 soldiers that had not taken a WSACCO loan, 81 (55.5 %) were not satisfied with WSACCO and 65 (44.5 %) were satisfied with WSACCO (table 4-21 and figure 4-22). On the other hand, out of 235 soldiers who had taken a loan, those who were not satisfied with WSACCO were 56 (23.8 %) and those who were satisfied with WSACCO were 179 (76.2%). The odds ratio was 3.9832, with a confidence interval of 2.5567 to 6.2058 and a p-value of 0.0000000004 showing a very strong relationship with a risk ratio of 2.3282 showing that there was twice the chance of being satisfied with WSACCO when one has ever taken a WSACCO loan than when he has not.

4.7 CONTROLLING FOR RANK, EDUCATION, EMPLOYMENT OF SPOUSE AND FAMILY SIZE

4.7.1 Private Soldiers and WSACCO Loans

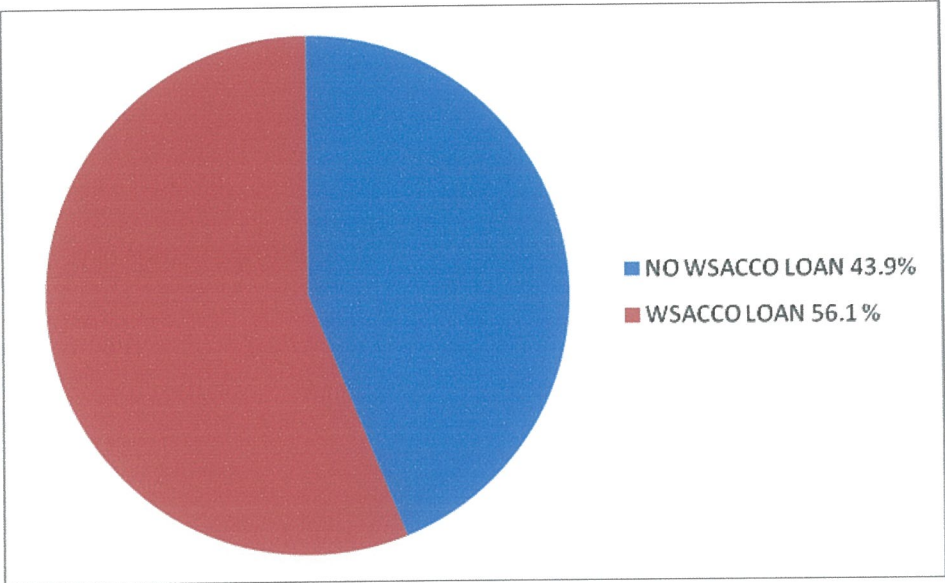


Figure 4-23 Pie-chart Showing the Number of Private Soldiers Accessing WSACCO Loans

As in Figure 4-23, among the Soldiers interviewed, there were 173 Privates of whom those who had not taken WSACCO loans were 76 (43.9 %) and those who had taken loans were 97 (56.1 %).

4.7.2 WSACCO Loans and Possession of Furniture Among Privates

FURNITURE			
WSACCO LOAN	NO	YES	TOTAL
NO	45	31	76
Row %	59.2	40.8	100.0
Col %	47.9	39.2	43.9
YES	49	48	97
Row %	50.5	49.5	100.0
Col %	52.1	60.8	56.1
TOTAL	94	79	173
Row %	54.3	45.7	100.0
Col %	100.0	100.0	100.0

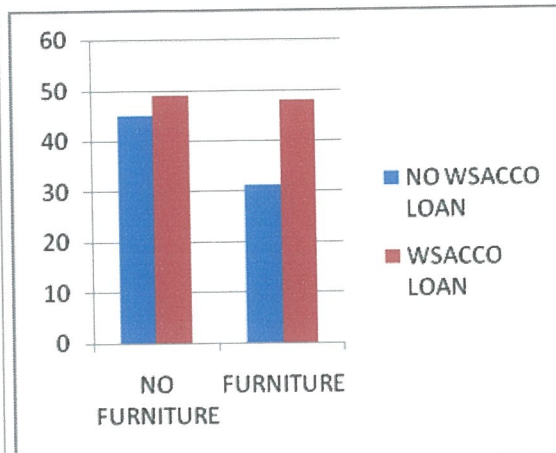


Table 4-22 WSACCO Loans and Use of Furniture among Privates

Table 4-24 WSACCO Loans and Use of Furniture Among Privates

As in table 4-22 and Figure 4-24, among Private soldiers who had not taken WSACCO loans, those who had no furniture were 45 (59.2 %). While among those that had taken a WSACCO loan, 49 (50.5 %) did not have furniture in their house and 48 (49.5 %) had furniture in their house. The odds ratio was 1.4220 at a confidence interval of 0.7754 to 2.6077. The risk ratio was 1.172 showing that there was a 17.2 % higher chance of a private that had a WSACCO loan having at least one piece of furniture in their house as compared to private soldiers that had not taken a WSACCO loan. The p-value was 0.2544 which could not disprove the null hypothesis with 95 % confidence.

4.7.3 Private Soldiers with WSACCO Loan and Possession of a Personal House

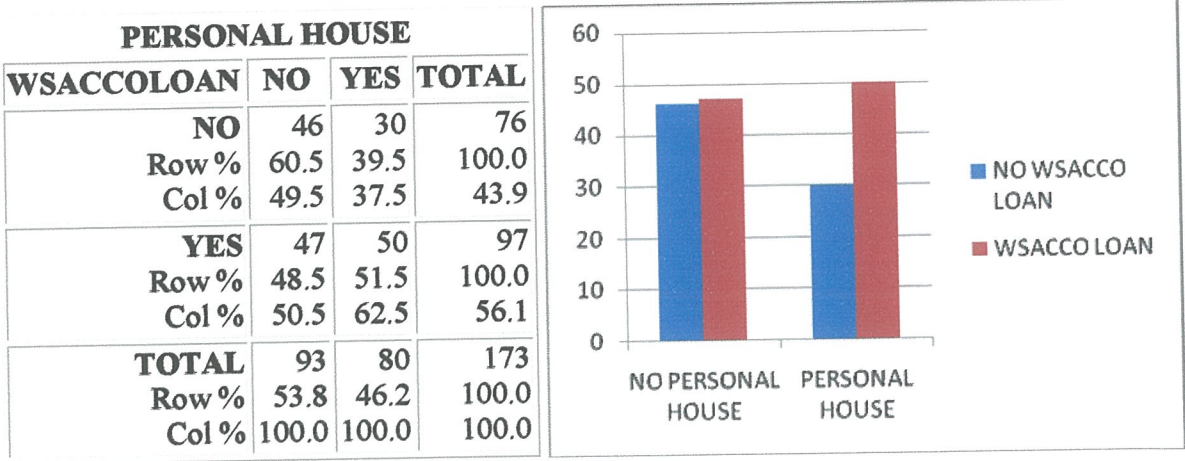


Table 4-23 Privates with
WSACCO Loan and Possession
of a Personal House

Figure 4-25 Private Soldiers with WSACCO
Loan and Possession of a
Personal House

As in Table 4-23 and figure 4-25, having controlled for rank, private soldiers who had not taken a WSACCO loan were 46 (60.5%) without a personal house and those with a personal house were 30 (39.5%). Among Private soldiers who had taken a loan, those who had no house were 47 (48.5%) and those with a house were 50 (51.5%). There was a 25% higher chance of having a WSACCO loan while having a house but the relation was not statistically significant as shown by an odds ratio of 1.6312 and a confidence interval of 0.8877 to 2.9973 with a p-value of 0.1140.

4.74 Private Soldiers with WSACCO Loan and an Iron Roofed House

IRON ROOF			
WSACCO LOAN	NO	YES	TOTAL
NO	60	16	76
Row %	78.9	21.1	100.0
Col %	47.6	34.0	43.9
YES	66	31	97
Row %	68.0	32.0	100.0
Col %	52.4	66.0	56.1
TOTAL	126	47	173
Row %	72.8	27.2	100.0
Col %	100.0	100.0	100.0

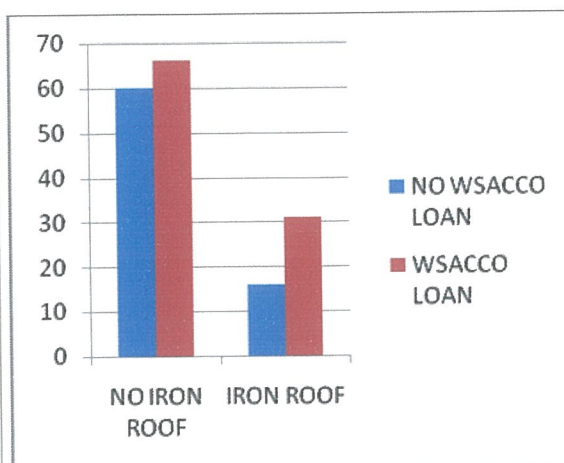


Table 4-24 Private Soldiers with WSACCO Loan and possession of an Iron Roofed House

Figure 4-26 Private Soldiers with WSACCO Loan and an Iron Roofed House

As in table 4-24 and figure 4-26, among the Private Soldiers that did not take a loan, an iron roofed house was not possessed by 60 (78.9%) and an iron roofed house was possessed by 16 (21.1%). Out of those that had taken a loan, those who had no iron roofed house were 66 (68.0%) and those that had an iron roofed house were 31 (32%). At an odds ratio of 1.7614, a confidence interval of 0.8770 to 3.5375 and a p-value of 0.07590 by Fisher exact test shows that the risk ratio of 1.1603 only showed a slight increase of those with an iron roofed house among the privates that had taken a loan that was not statistically significant.

4.7.5 Private Soldiers with WSACCO Loans and Mobile Telephones

MOBILE PHONES			
WSACCO LOAN	NO	YES	TOTAL
NO	38	38	76
Row %	50.0	50.0	100.0
Col %	52.1	38.0	43.9
YES	35	62	97
Row %	36.1	63.9	100.0
Col %	47.9	62.0	56.1
TOTAL	73	100	173
Row %	42.2	57.8	100.0
Col %	100.0	100.0	100.0

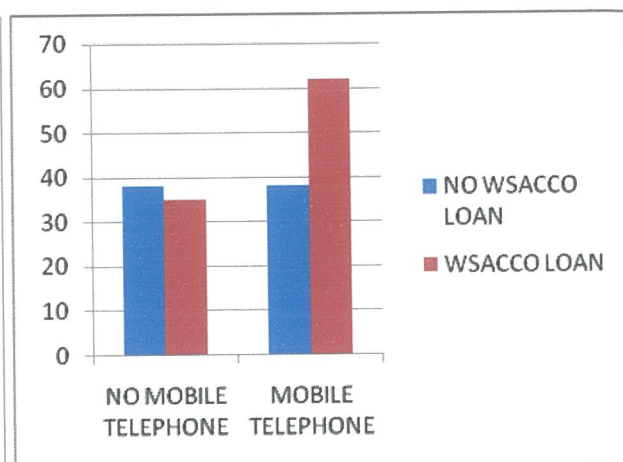


Table 4-25 Private Soldiers with WSACCO Loans and Mobile Telephones

Figure 4-27 Private Soldiers with WSACCO Loans and Mobile Telephones

Among privates that had not taken a loan, there was an equal number of 38 (50%) of those who had a mobile telephone and of those who did not have one (Table 4-25 & Figure 4-27). But among the privates who had taken a WSACCO loan, those who had no mobile telephone and those who had were 35 (36.1%) and 62 (63.9%) respectively. The odds ratio was 1.7714 at a 95% confidence interval of 0.9611 to 3.2650 with a p-value of 0.06 which was near statistical significance and the Fisher's exact test was 0.0461. So, graphically, among the private soldiers that took loans, at a risk ratio of 1.3857 there is a 38.57 % higher chance of having a mobile telephone compared to those that had not taken a WSACCO loan. Basing on Fishers test this can be assumed to be significant.

4.7.6 Private Soldiers with WSACCO Loans and A Personal Business

PERSONAL BUSINESS			
WSACCO LOAN	NO	YES	TOTAL
NO	66	10	76
Row %	86.8	13.2	100.0
Col %	47.1	30.3	43.9
YES	74	23	97
Row %	76.3	23.7	100.0
Col %	52.9	69.7	56.1
TOTAL	140	33	173
Row %	80.9	19.1	100.0
Col %	100.0	100.0	100.0

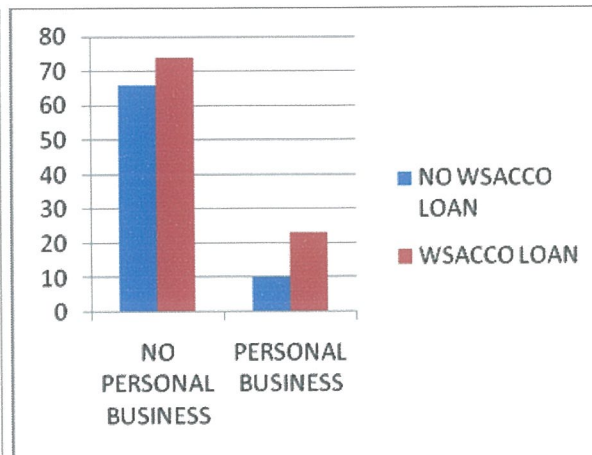


Table 4-26 Private Soldiers with WSACCO Loans and Personal Business

Figure 4-28 Private Soldiers WSACCO Loans and Personal Business

As is table 4-26 and figure 4-28, among privates that had not taken a loan, those that had no personal business were 66 (86.8 %) and those that were having a personal business were 10 (13.2%). On the other hand, among the private soldiers that had not taken a loan, those who had no personal business were 74 (76.3%) and 23 (23.7%). The risk ratio was 1.138 with a 13.8% higher chance of having a Private who took a loan with a personal business compared to those that had not taken a WSACCO loan. The odds ratio was 2.0514 at a 95 % confidence interval of 0.0906 to 4.6261 and the p-value was 0.058 by Fishers exact test meaning that the result was at the edge of statistical significance.

4.7.7 Private Soldiers Who Took WSACCO Loans and Satisfaction with Achievement

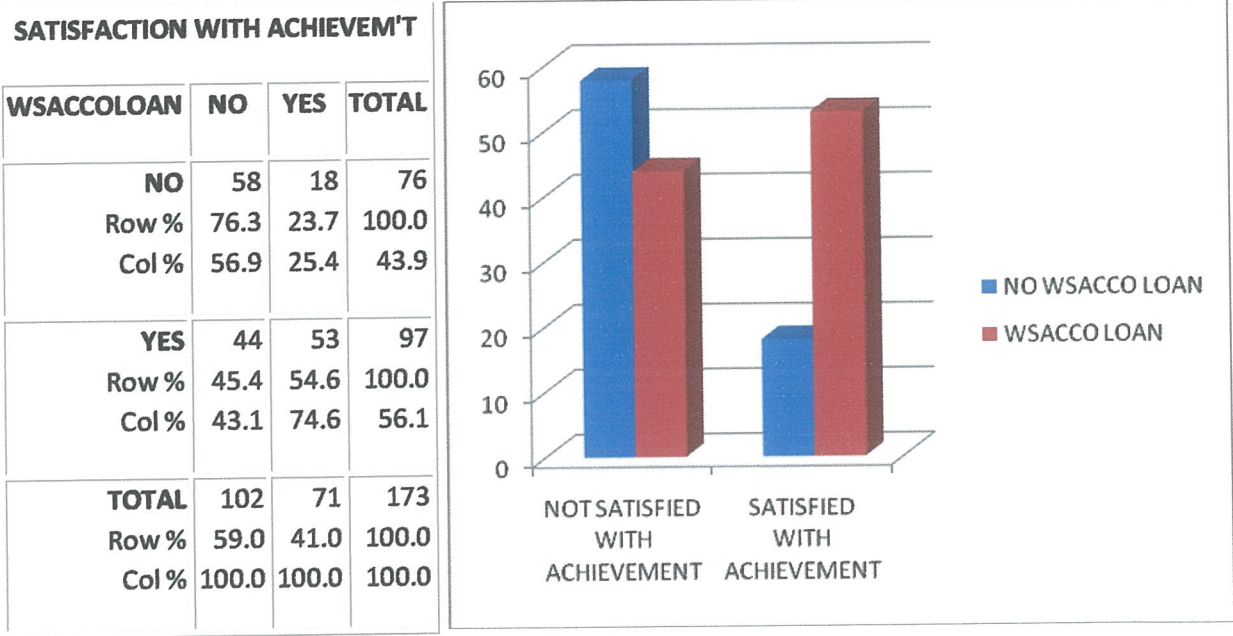
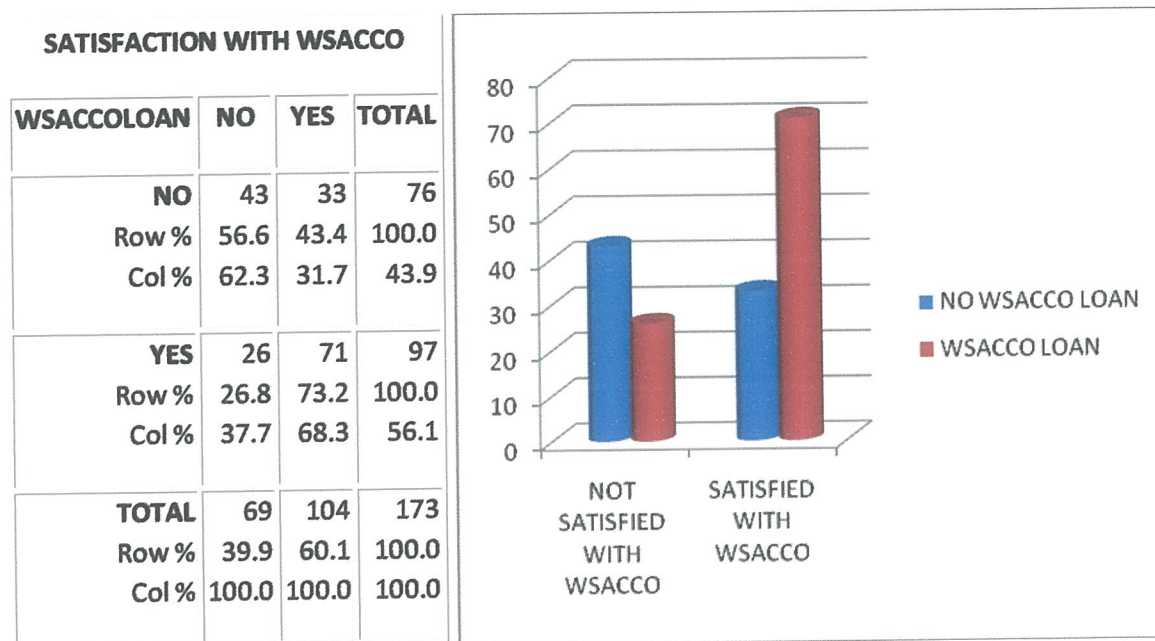


Table 4-27 Privates with WSACCO Loans and Satisfaction with Achievement

Figure 4-29 Privates with WSACCO Loans and Satisfaction with Achievement

As in table 4-27 and figure 4-29, Among Private soldiers that had not taken a WSACCO loan, those not satisfied with their achievements were 58 (76.3 %) and those that had satisfaction with their achievement were 18 (23.7 %). Among those Private soldiers that had taken a WSACCO loan, those that were not satisfied with their achievements were 44 (45.4 %) and those that were satisfied with their achievement 53 (54.6 %). At an Odds ratio of 3.8813 at a 95 % confidence interval of 1.3079 to 2.1641 and a p-value of 0.00003 by Fishers exact test shows that the risk ratio of 1.6824 meaning that the 68.24 % higher chance of being satisfied by their achievement is not by mere chance.

4.7.8 Private Soldiers; WSACCO Loans and Satisfaction with Services



**Table 4-28 Privates;
WSACCO Loans and
Satisfaction with Services**

**Figure 4-30 Privates; WSACCO
Loans and Satisfaction
with Services**

As in table 4-28 and Figure 4-30, out of the 76 private soldiers that had not taken a WSACCO loan, those that had not been satisfied with WSACCO were 43 (56.6 %) and those that were satisfied with WSACCO were 33 (43.4 %). The private soldiers that had taken a loan and were not satisfied with WSACCO were 26 (26.8 %). The private soldiers that took a WSACCO loan and were satisfied with WSACCO were 71 (73.2 %). The odds ratio was 3.5583 at a 95 % confidence interval of 1.8792 to 6.7377. The p-value was 0.000065 by Fishers exact test. Therefore, the relationship disproved the null hypothesis. At a risk ratio of 2.118, there was twice the chance of finding a satisfied private that had taken a loan compared to those that had not taken a WSACCO loan.

4.7.9 Soldiers with Education Below S4 and WSACCO Loans

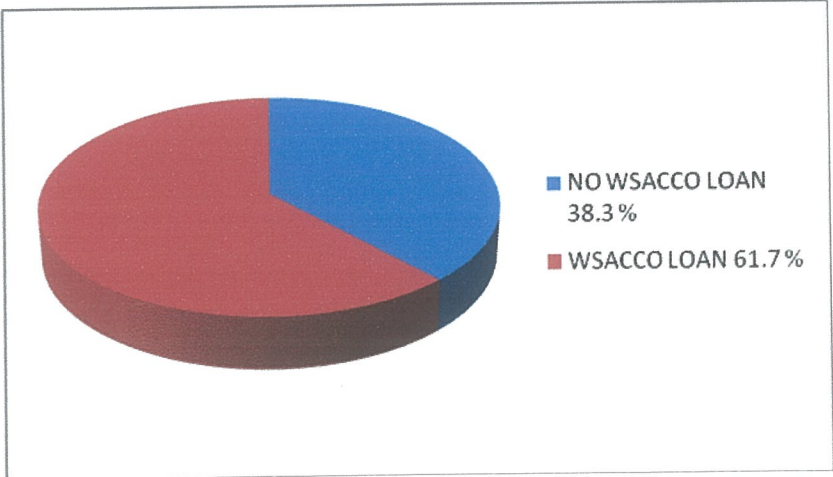


Figure 4-31 Pie-Chart to show the access to loans soldiers below Senior Four.

Among the soldiers who were interviewed, there were 243 whose education was below senior four standard (Figure 4-31). Out of these, those who had not acquired a WSACCO loan were 93 (38.3 %) and those that had acquired a loan were 150 (61.7%)

4.7.10 Uneducated Soldiers with Loans and Those Who Had Furniture

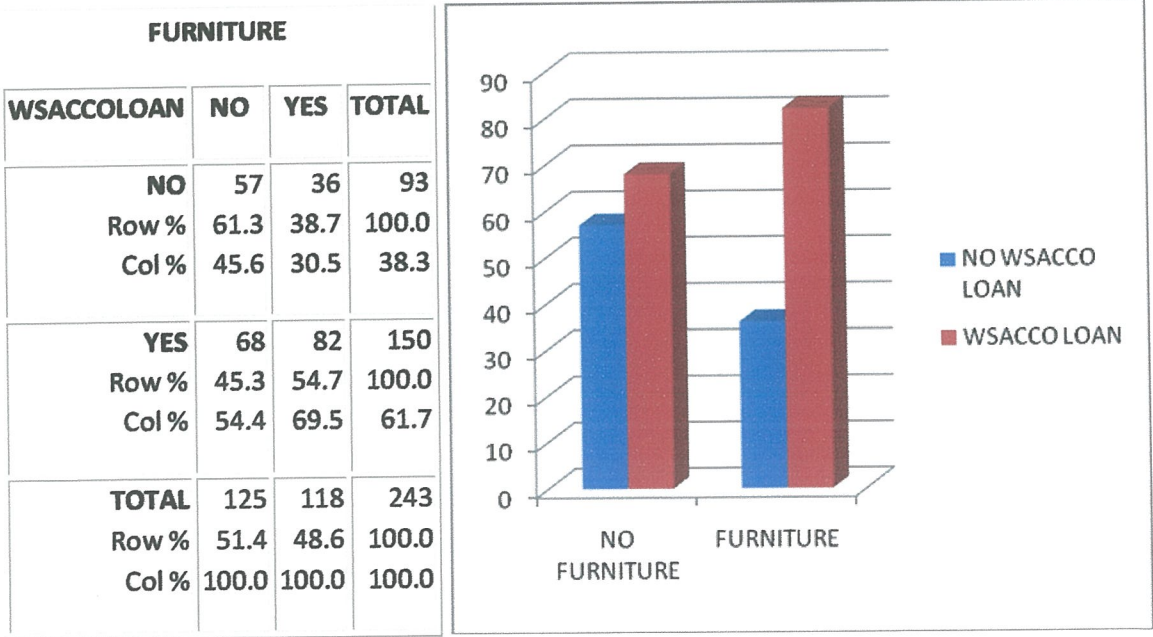


Table 4-29 Uneducated Soldiers with Loans and Use of Furniture

Figure 4-32 Uneducated Soldiers with Loans and Use of Furniture

In Table 4-29 and Figure 4-32 Among the uneducated soldiers that had no loans, those that had no furniture were 57 (61.3 %) and those that had furniture were 36 (38.7 %). Among the uneducated soldiers that had taken a WSACCO loan, those that had no furniture were 68 (45.3 %) and those that had furniture were 82 (54.7 %). The odds ratio was 1.9093 at a 95 % confidence interval of 1.1275 to 3.2332. The risk ratio was 1.3520 showing that there was a 35 % higher chance of having an unemployed soldier with a WSACCO loan with furniture as compared to an unemployed soldier without a loan. The p-value was 0.01094 showing that there was statistical significance in the relationship.

4.7.11 Uneducated Soldiers with WSACCO Loans and Personal House

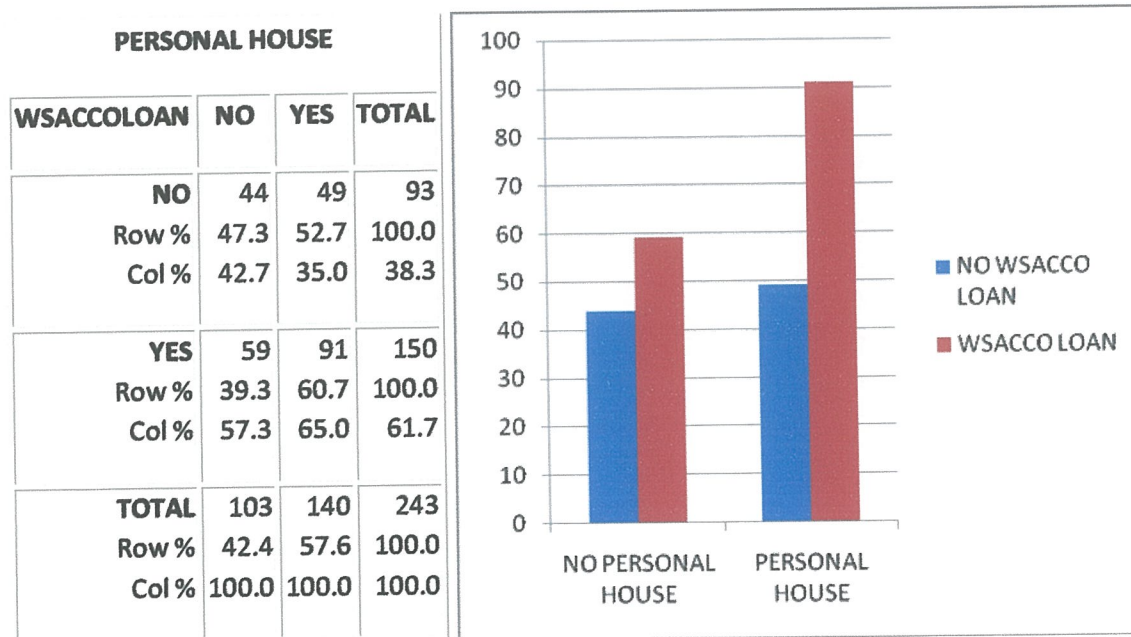


Table 4-30 Uneducated

Figure 4-33 Uneducated Soldiers

With WSACCO Loans and

With WSACCO Loans and Personal House

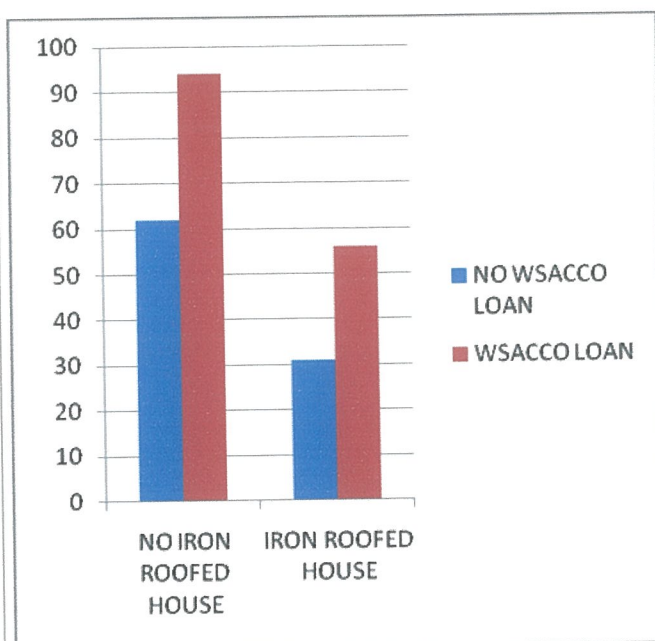
Personal House

From Table 4-30 and figure 4-33, among the uneducated soldiers that had no loans, those that had no house were 44 (47.3 %) and those that had a personal house were 49 (52.7 %). Among the uneducated soldiers that had taken a WSACCO loan, those that had no house were

59 (39.3 %) and those that had a personal house at least were 91 (60.7 %). The odds ratio was 1.3850 at a 95 % confidence interval of 0.8213 to 2.3355. The risk ratio was 1.2028 showing that there was a 20 % higher chance of having an uneducated soldier with a WSACCO loan as compared to an uneducated soldier without a loan. The p-value was 0.1379 showing that the increase was by sheer luck.

4.7.12 Uneducated Soldiers with WSACCO Loans and Iron Roofed House

IRON ROOF			
WSACCO LOAN	NO	YES	TOTAL
NO	62	31	93
Row %	66.7	33.3	100.0
Col %	39.7	35.6	38.3
YES	94	56	150
Row %	62.7	37.3	100.0
Col %	60.3	64.4	61.7
TOTAL	156	87	243
Row %	64.2	35.8	100.0
Col %	100.0	100.0	100.0



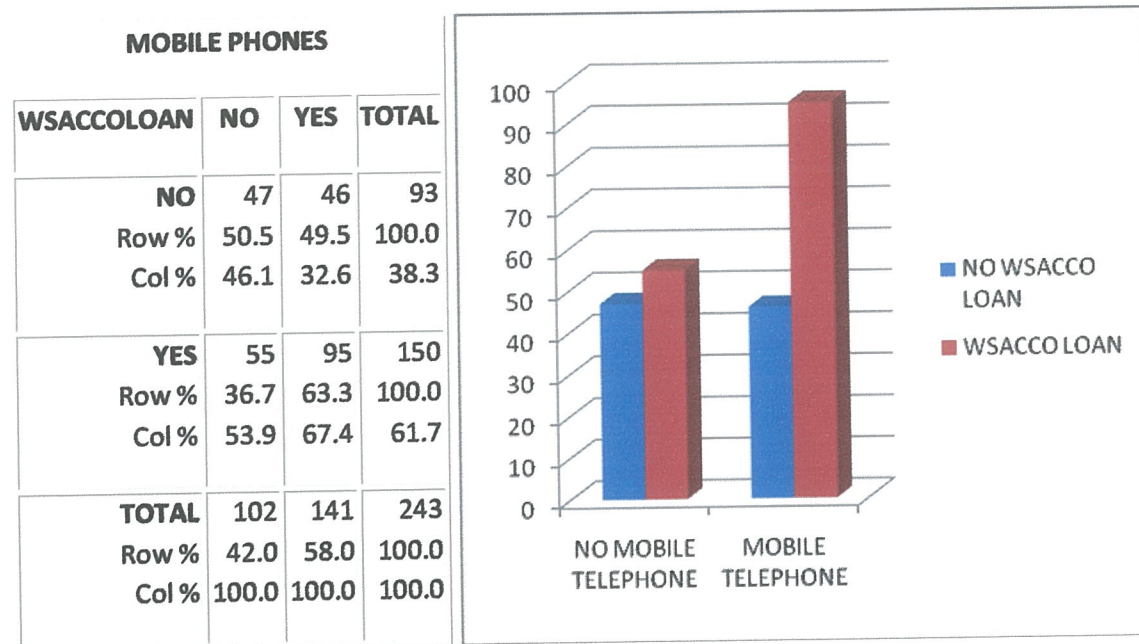
**Table 4-31 Uneducated;
WSACCO Loans & Iron
Roofed House**

**Figure 4-34 Uneducated
WSACCO Loans & Iron
Roofed House**

As in table 4-31 and figure 4-34, among the uneducated soldiers that had no loans, those that had no iron roofed house were 62 (66.7 %) and those that had an iron roofed house were 31 (33.3 %). Among the uneducated soldiers that had taken a WSACCO loan, those that had no iron roofed house were 94 (62.7 %) and those that had an iron roofed house were 56 (37.3 %). The odds ratio was 1.1915 at a 95 % confidence interval of 0.6919 to 2.0517. The risk ratio was 1.0638 showing that there was a 6 % higher chance of having an unemployed soldier with a WSACCO loan who has a house with an iron roof as compared to an uneducated soldier

without a loan. The p-value was 0.2662 by Fisher's exact test showing how subtle the relationship was.

4.7.13 WSACCO Loan and Mobile Telephone Use Among Soldiers Below Senior Four Standard



**Table 4-32 WSACCO Loan
& Phone Use below S4**

**Figure 4-35 WSACCO Loan &
Phone Use Below S 4**

As in Table 4-32 and figure 4-35, among the uneducated soldiers that had no loans, those that had no mobile telephone were 47 (50.5 %) and those that had a mobile telephone were 46 (49.5 %). Among the uneducated soldiers that had taken a WSACCO loan, those that had no mobile telephone were 55 (36.7 %) and those that had a mobile telephone were 95 (63.3 %). The odds ratio was 1.7648 at a 95 % confidence interval of 1.0441 to 2.9831. The risk ratio was 1.3783 showing that there was a 37 % higher chance of having an uneducated soldier who had taken a WSACCO loan with mobile telephone as compared to an uneducated soldier without a loan. The p-value was 0.0231 showing that the relationship was 95 % likely.

4.7.14 Uneducated Soldiers, WSACCO Loans and Personal Business

PERSONAL BUSINESS			
WSACCOLOAN	NO	YES	TOTAL
NO	83	10	93
Row %	89.2	10.8	100.0
Col %	43.0	20.0	38.3
YES	110	40	150
Row %	73.3	26.7	100.0
Col %	57.0	80.0	61.7
TOTAL	193	50	243
Row %	79.4	20.6	100.0
Col %	100.0	100.0	100.0

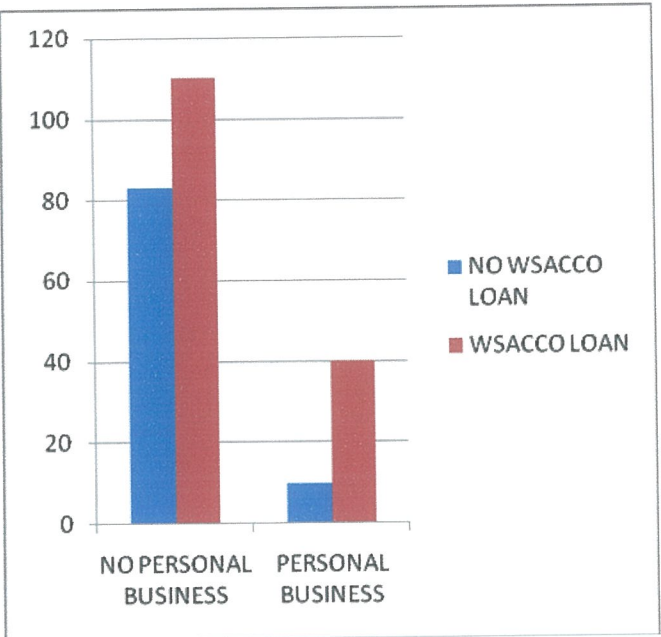


Table 4-33 Uneducated Soldiers, WSACCO Loans & Personal Business

Figure 4-36 Uneducated Soldiers, WSACCO Loans and Personal Business

From Table 4-33 and Figure 4-36, among the uneducated soldiers that had no loans, those that had no personal business were 83 (89.2 %) and those that had a personal business were 10 (10.8 %). Among the uneducated soldiers that had taken a WSACCO loan, those that had no personal business were 110 (73.3 %) and those that had a personal business were 40 (26.7 %). The odds ratio was 3.0182 at a 95 % confidence interval of 1.4267 to 6.3848. The risk ratio was 1.2170 showing that there was a 21 % higher chance of having an uneducated soldier who had taken a WSACCO loan with personal business as compared to an unemployed soldier without a loan. The p-value was 0.00012 showing that the relationship was 95 % likely.

4.7.15 Uneducated Soldiers Who Had Taken WSACCO Loans and Satisfaction With Achievement

SATISFACTION WITH ACHIEVEM'T

WSACCOLOAN	NO	YES	TOTAL
NO	64	29	93
Row %	68.8	31.2	100.0
Col %	55.7	22.7	38.3
YES	51	99	150
Row %	34.0	66.0	100.0
Col %	44.3	77.3	61.7
TOTAL	115	128	243
Row %	47.3	52.7	100.0
Col %	100.0	100.0	100.0

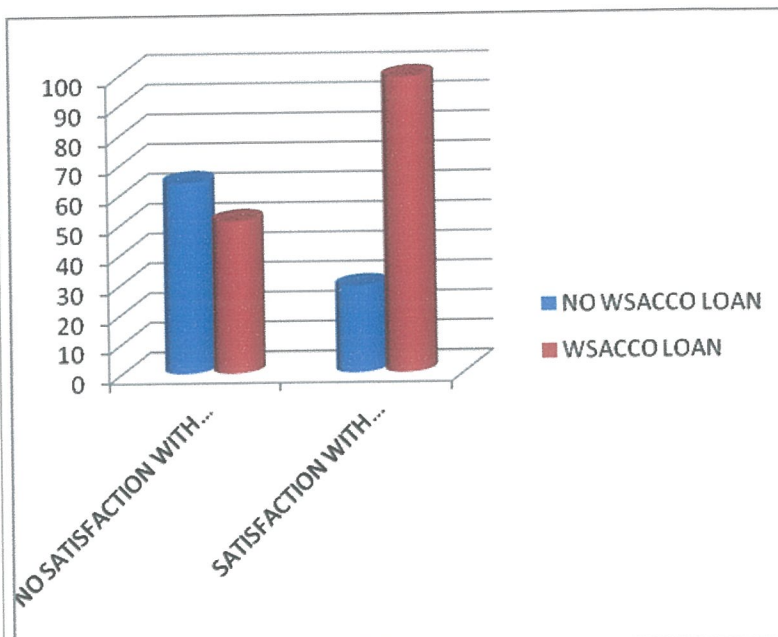


Table 4-34 Uneducated; WSACCO Loans & Satisfaction with Achievement

Figure 4-37 Uneducated; WSACCO Loans & Satisfaction with Achievement

From Table 4-34 and figure 4-37, among the uneducated soldiers that had no loans, those that had no satisfaction with personal achievement were 64 (68.8 %) and those that had a personal satisfaction were 29 (31.2 %). Among the uneducated soldiers that had taken a WSACCO loan, those that had no satisfaction with personal achievement were 51 (34.0 %) and those that had satisfaction with personal achievement were 99 (66.0 %). The odds ratio was 4.2840 at a 95 % confidence interval of 2.4624 to 7.4530. The risk ratio was 2.0240 showing that there was a 2 times a higher chance of having an uneducated soldier who had taken a WSACCO loan who was satisfied with personal achievement as compared to an uneducated soldier without a loan. The p-value was 0.00000001 showing that the relationship was more than 95 % likely; that is 99.98 % likely.

4.7.16 Uneducated Soldiers Who Had Taken WSACCO Loans and Satisfaction With services

SATISFACTION WITH WSACCO			
WSACCO LOAN	NO	YES	TOTAL
NO	51	42	93
Row %	54.8	45.2	100.0
Col %	58.0	27.1	38.3
YES	37	113	150
Row %	24.7	75.3	100.0
Col %	42.0	72.9	61.7
TOTAL	88	155	243
Row %	36.2	63.8	100.0
Col %	100.0	100.0	100.0

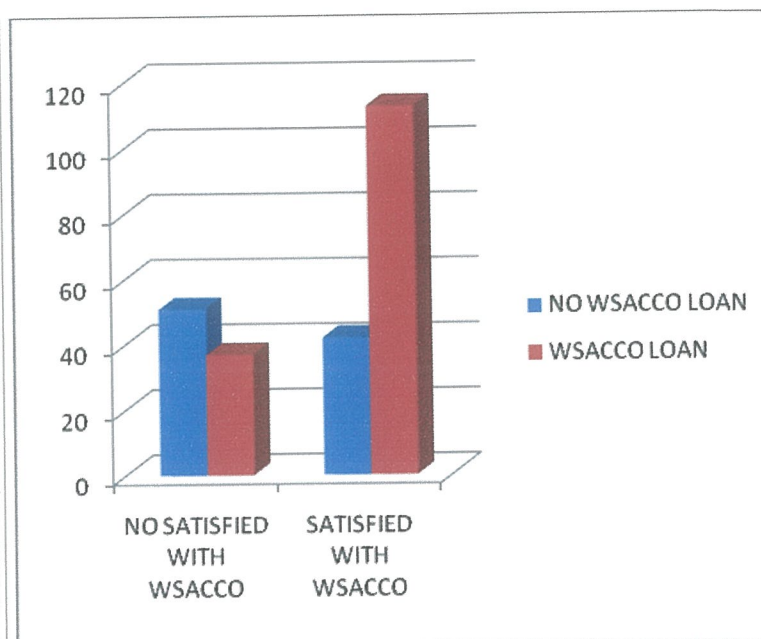


Table 4-35 Uneducated; WSACCO Loans & Satisfaction With services

Figure 4-38 Uneducated Soldiers; WSACCO Loans & Satisfaction With services

Table 4-35 and Figure 4-38, among the uneducated soldiers that had no loans, those that were not satisfied with WSACCO were 51 (54.8 %) and those that satisfied with WSACCO were 42 (45.2 %). Among the uneducated soldiers that had taken a WSACCO loan, those that were not satisfied with WSACCO were 37(25.7 %) and those that were satisfied with WSACCO were 113 (75.3 %). The odds ratio was 3.705 at a 95 % confidence interval of 2.1355 to 6.4401. The risk ratio was 2.2232 showing that there was a 2.2 times higher chance of having an uneducated soldier who had taken a WSACCO loan with mobile telephone as compared to an uneducated soldier without a loan. The p-value was 0.000002 by Fisher's test for small numbers showing that the soldier's satisfaction with WSACCO was more than 95 % dependent on having taken a WSACCO loan.

4.7.17 Unemployed Spouse and Access to WSACCO Loans

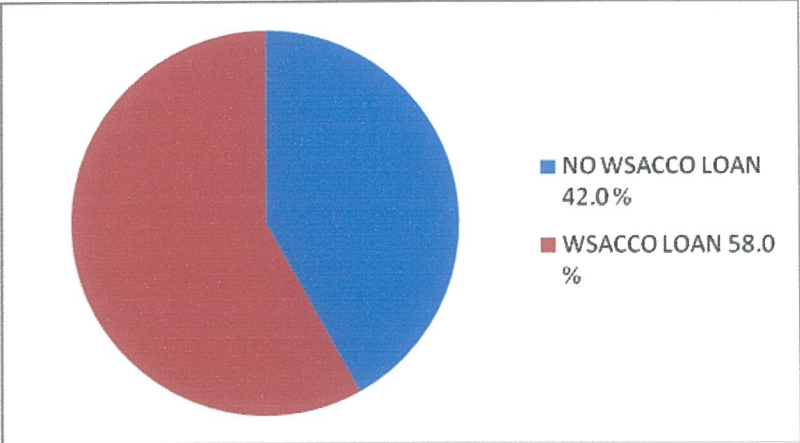


Figure 4-39 Unemployed Spouse and Access to WSACCO Loans

Among the 224 soldiers with unemployed spouses, there were 94 (42.0 %) who had not taken a WSACCO loan and there were 130 (58.0 %) who had taken one or more WSACCO loans (Figure 4-39).

4.7.18 Soldiers with an Unemployed Spouse Who Took Loans and Use of Furniture

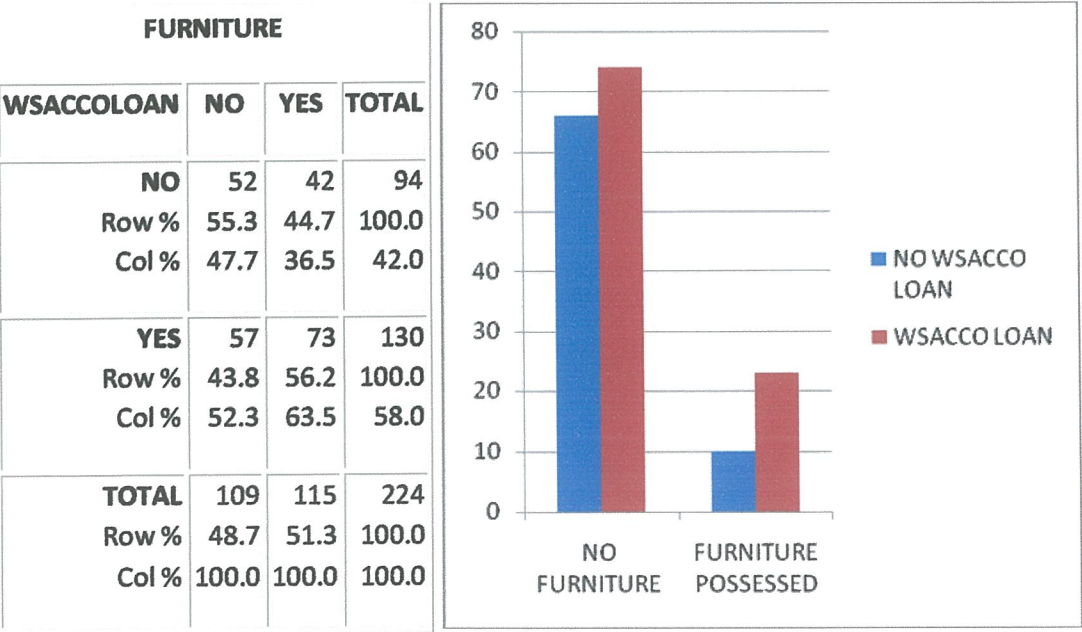


Table 4-36 Unemployed Spouse WSACCO Loans & Use of Furniture

Figure 4-40 Unemployed Spouse WSACCO Loans and Use of Furniture

From Table 4-36 and Figure 4-40, among the soldiers that had unemployed spouses and not taken loans, those that did not have furniture were 52 (55.3 %) and those that had furniture were 42 (44.7 %). Among the soldiers with unemployed spouses that had taken a WSACCO loan, those that had no furniture were 57 (43.8 %) and those that had furniture were 73 (56.2 %). The odds ratio was 1.5856 at a 95 % confidence interval of 0.9294 to 2.7052. The risk ratio was 1.2617 showing that there was a 26 % higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan with a mobile telephone as compared to a soldier with an unemployed wife without a loan. The p-value was 0.0593 showing that the relationship was more than 95 % likely.

4.7.19 Soldiers with an Unemployed Spouse Who Took WSACCO Loans and Having A Personal House

PERSONAL HOUSE			
WSACCO LOAN	NO	YES	TOTAL
NO	50	44	94
Row %	53.2	46.8	100.0
Col %	44.2	39.6	42.0
YES	63	67	130
Row %	48.5	51.5	100.0
Col %	55.8	60.4	58.0
TOTAL	113	111	224
Row %	50.4	49.6	100.0
Col %	100.0	100.0	100.0

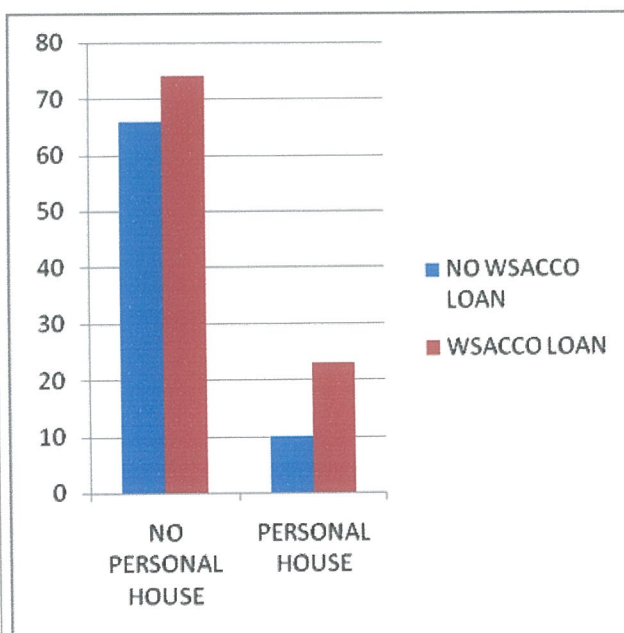


Table 4-37 Soldiers with Unemployed Spouse; Loan vs Personal House

Figure 4-41 Soldiers with Unemployed Spouse; WSACCO Loan vs Personal House

From table 4-36 and Figure 40, among the soldiers that had unemployed spouses and not taken loans, those that did not have a personal house were 50 (53.2 %) and those that had a personal house were 44 (46.8 %). Among the soldiers with unemployed spouses that had taken a WSACCO loan, those that did not possess a house were 63 (48.5 %) and those that had a house were 67 (51.5 %). The odds ratio was 1.2085 at a 95 % confidence interval of 0.7103 to 2.0562. The risk ratio was 1.0976 showing that there was a 9 % higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan with mobile telephone as compared to an soldier with an unemployed wife without a loan. The p-value was 0.2866 proving the null hypothesis correct.

4.7.20 Soldiers with an Unemployed Spouse Who Took a WSACCO Loan and Having an Iron Roofed House

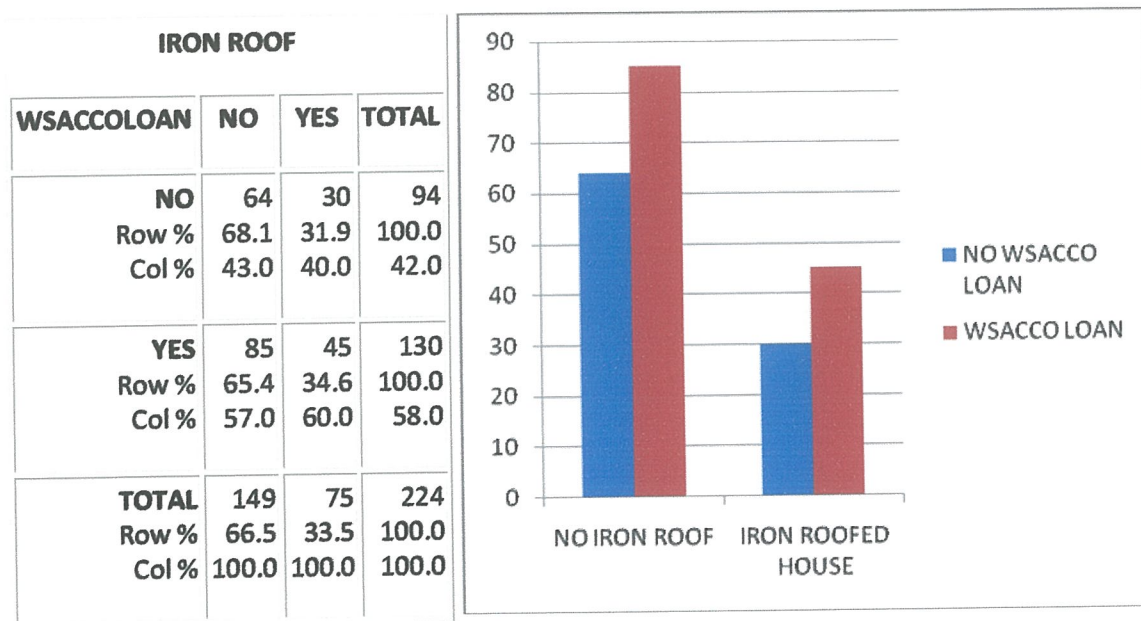


Table 4-38 Unemployed Spouse; WSACCO Loan & Iron Roof

Figure 4-42 Unemployed Spouse; WSACCO Loan & Iron Roof

From table 4-38 and figure 4-42, among the soldiers that had unemployed spouses and not taken loans, those that did not possess an iron roofed house were 64 (68.1 %) and those that had one were 30 (31.9 %). Among the soldiers with unemployed spouses that had taken a

WSACCO loan, those that possessed no iron roofed house were 85 (65.4 %) and those that had at least one were 45 (34.6 %). The odds ratio was 1.1294 at a 95 % confidence interval of 0.6422 to 1.9861. The risk ratio was 1.1288 showing that there was a 12 % higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan with an iron roofed house as compared to an soldier with an unemployed wife without a loan. The p-value was 0.3391 proving the null hypothesis correct.

4.7.21 Soldiers with an Unemployed Spouse; WSACCO Loan and Mobile Telephones

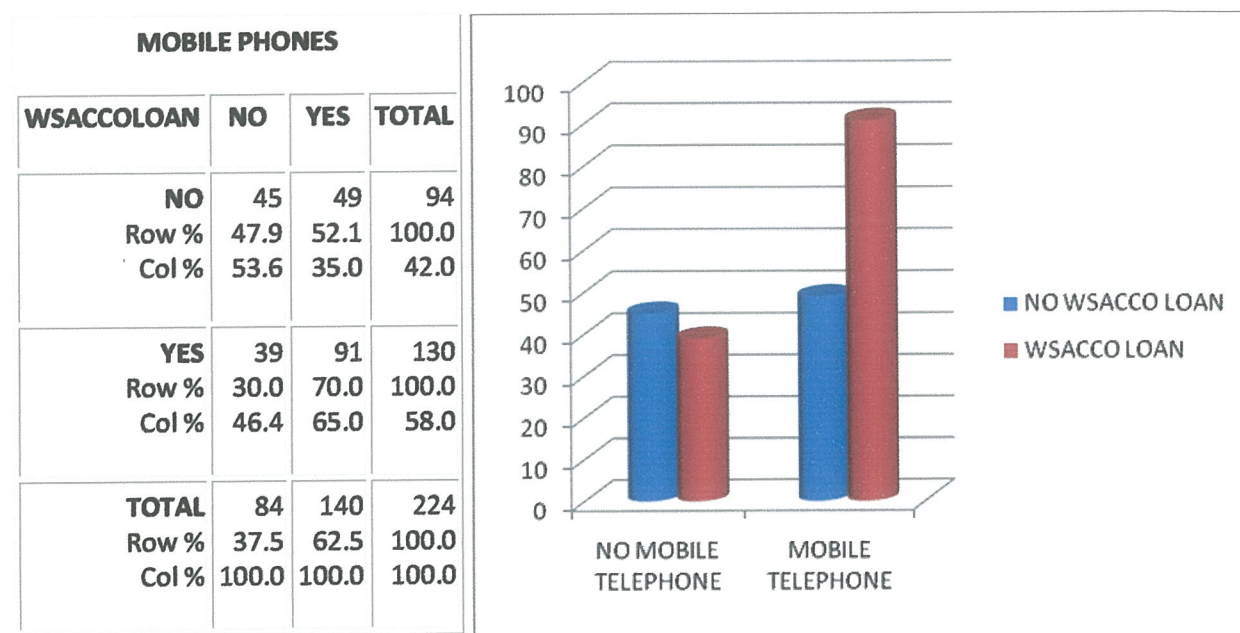


Table 4-39 Unemployed Spouse; WSACCO Loan & Mobile Telephones

Figure 4-43 Unemployed Spouse; WSACCO Loan and Mobile Telephones

From Table 4-39 and Table 4-43, among the soldiers that had unemployed spouses and not taken loans, those that did not have a mobile telephone were 45 (47.9 %) and those that had a mobile telephone were 49 (52.1 %). Among the soldiers with unemployed spouses that had taken a WSACCO loan, those that did not possess a mobile telephone were 39 (30.0 %) and those that had a mobile telephone were 91 (70.0 %). The odds ratio was 2.1429 at a 95 % confidence interval of 1.2341 to 3.7208. The risk ratio was 1.5957 showing that there was a 60 % higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan with

mobile telephone as compared to an soldier with an unemployed wife without a loan. The p-value was 0.004889 showing that the relationship was 95 % likely.

4.7.22 Soldiers with an Unemployed Spouse Who Took a WSACCO Loan and a Personal Business

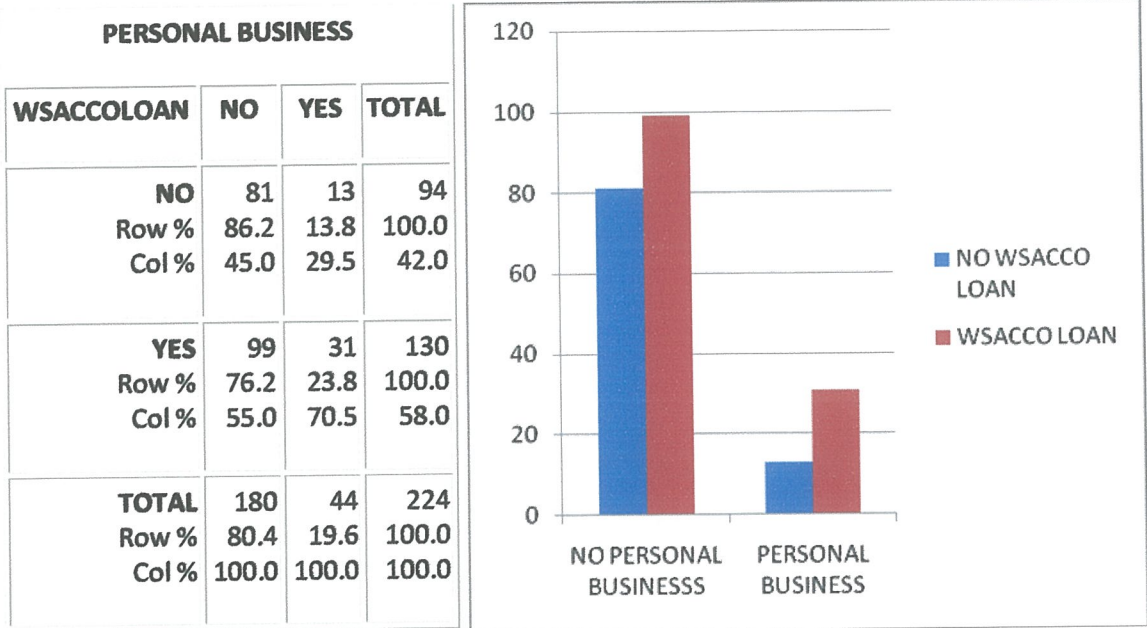


Table 4-40 Unemployed Spouse; WSACCO Loan & Personal Business

Figure 4-44 Unemployed Spouse; WSACCO Loan & Personal Business

From table 4-40 and Figure 4-44, it can be seen that among the soldiers that had unemployed spouses and had not taken loans, those that did not have a personal business were 81 (86.2 %) and those that had a personal business were 13 (13.8 %). Among the soldiers with unemployed spouses that had taken a WSACCO loan, those that did not have a personal business were 99 (76.2 %) and those that had a personal business were 31 (23.8 %). The odds ratio was 1.9510 at a 95 % confidence interval of 0.9582 to 3.9728. The risk ratio was 1.1315 showing that there was a 13 % higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan with mobile telephone as compared to an soldier with an unemployed wife without a loan. The p-value was 0.0439 showing that the relationship was 95 % likely.

4.7.23 Soldiers with Unemployed Spouse with a WSACCO LOAN and Satisfaction with Achievement

SATISFACTION WITH ACHIEVEMENT

WSACCO LOAN	NO	YES	TOTAL
NO	64	30	94
Row %	68.1	31.9	100.0
Col %	52.5	29.7	42.2
YES	58	71	129
Row %	45.0	55.0	100.0
Col %	47.5	70.3	57.8
TOTAL	122	101	223
Row %	54.7	45.3	100.0
Col %	100.0	100.0	100.0

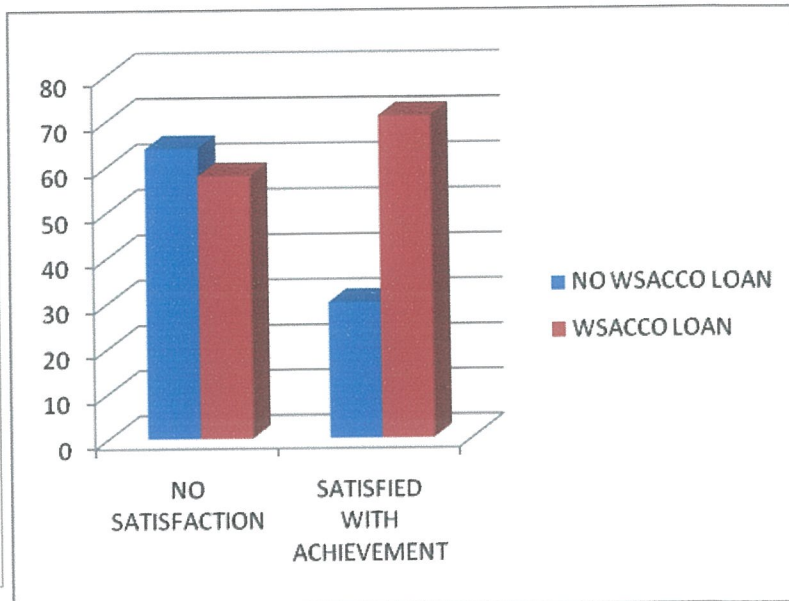


Table 4-41 Unemployed Spouse; WSACCO Loan & Satisfaction with self

Figure 4-45 Unemployed Spouse; WSACCO Loan & Satisfaction with Achievement

Among the soldiers that had unemployed spouses and not taken loans, those that were not satisfied with their achievement were 64 (68.1 %) and those that were satisfied were 30 (31.9 %) (Table 4-41 & Figure 4-45). Among the soldiers with unemployed spouses that had taken a WSACCO loan, those that were not satisfied were 58 (45.0 %) and those that were satisfied were 71 (55.0 %). The odds ratio was 2.6115 at a 95 % confidence interval of 1.4987 to 4.5507. The risk ratio was 1.5143 showing that there was a 51 % higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan who was satisfied with his or her achievement compared to a soldier with an unemployed wife without a loan. The p-value was 0.00031 showing that the null hypothesis was 95 % likely to be wrong.

4.7.24 Soldiers with Unemployed Spouse Who Took A WSACCO Loan and Satisfaction with WSACCO Services

SATISFACTION WITH WSACCO

WSACCO LOAN	NO	YES	TOTAL
NO	51	43	94
Row %	54.3	45.7	100.0
Col %	59.3	31.2	42.0
YES	35	95	130
Row %	26.9	73.1	100.0
Col %	40.7	68.8	58.0
TOTAL	86	138	224
Row %	38.4	61.6	100.0
Col %	100.0	100.0	100.0

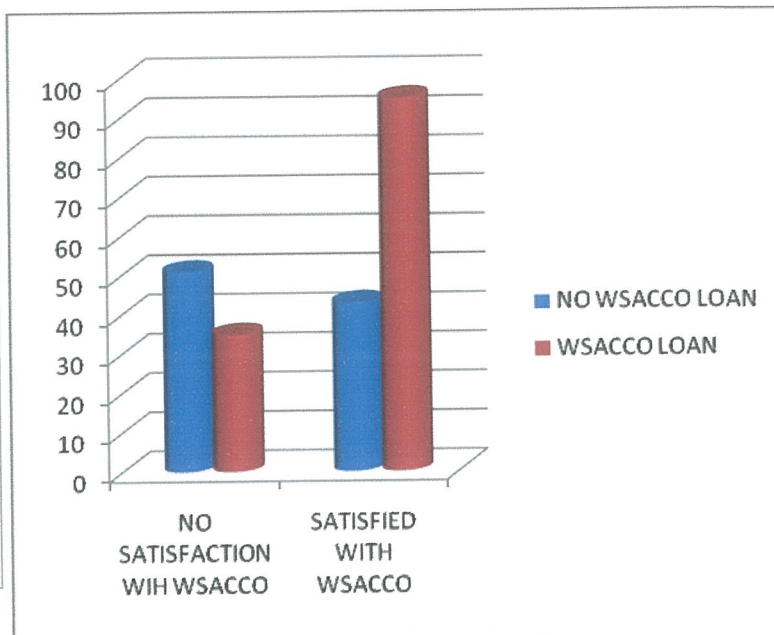


Table 4-42 Unemployed Spouse; WSACCO Loan & Satisfaction with Services

Figure 4-46 Unemployed Spouse; WSACCO Loan & Satisfaction with Services

Among the soldiers that had unemployed spouses and not taken loans, those that were not satisfied with WSACCO were 51 (54.3 %) and those that were satisfied were 43 (45.7 %) (Table 4-42 and Figure 4-46). Among the soldiers with unemployed spouses that had taken a WSACCO loan, those that were not satisfied with WSACCO were 35 (43.8 %) and those that were satisfied with WSACCO were 95 (73.1 %). The odds ratio was 1.8368 at a 95 % confidence interval of 1.8638 to 5.6422. The risk ratio was 2.0152 showing that there was a two-fold higher chance of having a soldier with an unemployed wife who had taken a WSACCO loan with mobile telephone as compared to an soldier with an unemployed wife without a loan. The p-value was 0.000029 showing that the relationship was 95 % likely.

4.7.25 Soldiers Taking Loans with Family Less than Seven Members

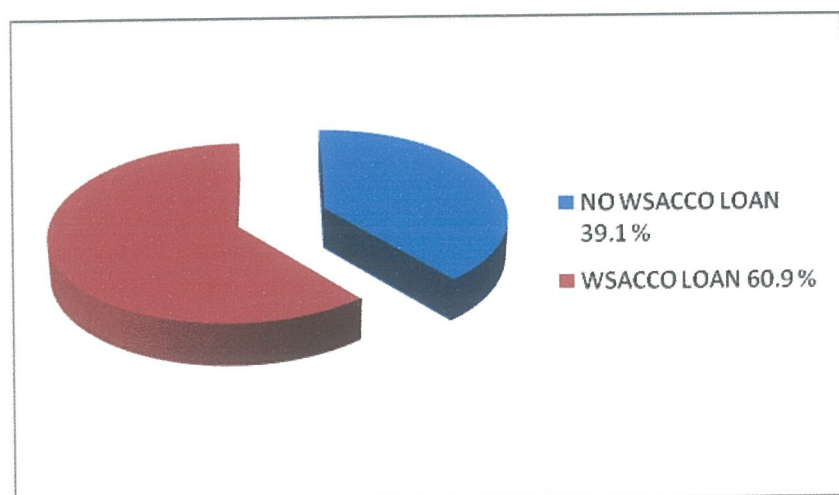


Figure 4-48 Pie-chart showing Access to WSACCO Loans by Soldiers with Family Less than Seven Members

As in figure 4-48, among soldiers interviewed, there were 230 soldiers with the family size less than seven. Of these, those who did not take loans were 90 (39.1 %) and those that took loans were 240 (60.9 %)

4.7.26 Soldiers With A Family Size Less Than Seven Who Took A WSACCO Loan Related To Those Who Had Furniture

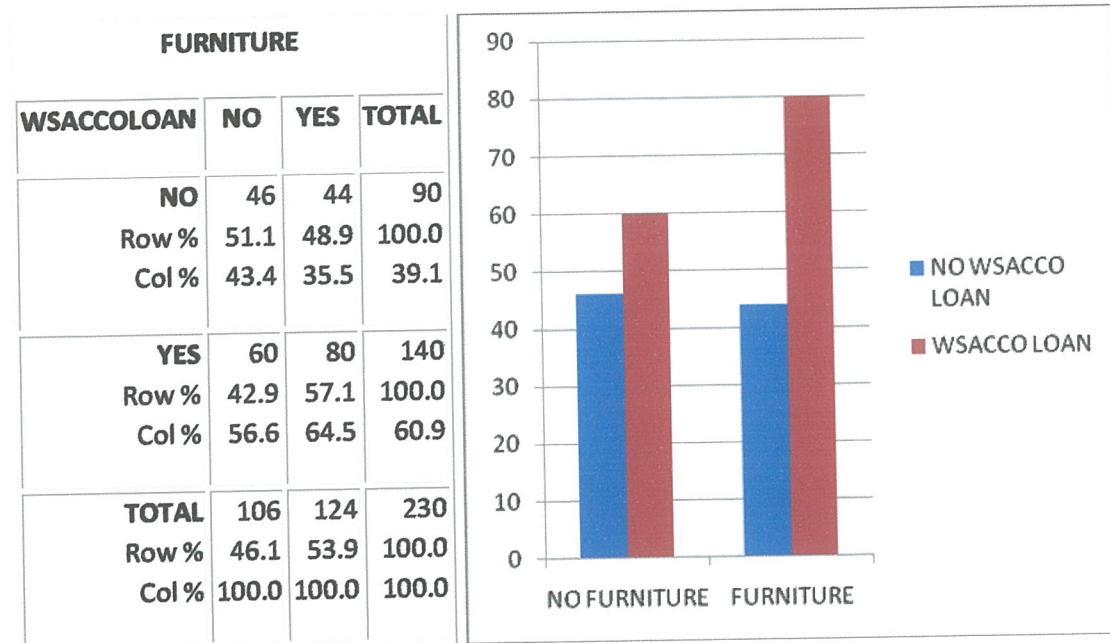


Table 4-43 Small Family;

figure 4-49 Small Family;

WSACCO Loan and Furniture use

WSACCO Loan and Furniture use

From Table 4-43 and Figure 4-49, we see that among the soldiers that had families of less than seven members and had not taken loans, those that did not have furniture were 46 (51.1 %) and those that had furniture were 44 (48.9 %). Among the soldiers with less than five family members that had taken a WSACCO loan, those that had no furniture were 60 (42.9 %) and those that had furniture were 80 (57.1 %). The odds ratio was 1.3939 at a 95 % confidence interval of 0.8190 to 2.3726. The risk ratio was 1.1926 showing that there was a 19 % higher chance of having a soldier with a family of less than seven who had taken a WSACCO loan with

furniture as compared to an soldier with a family of less than seven members without a loan. The p-value was 0.1123 showing that the relationship was by mere chance.

4.7.27 Soldiers with a Family Size Less Than Seven Who Took a WSACCO Loan Related to Having a Personal House

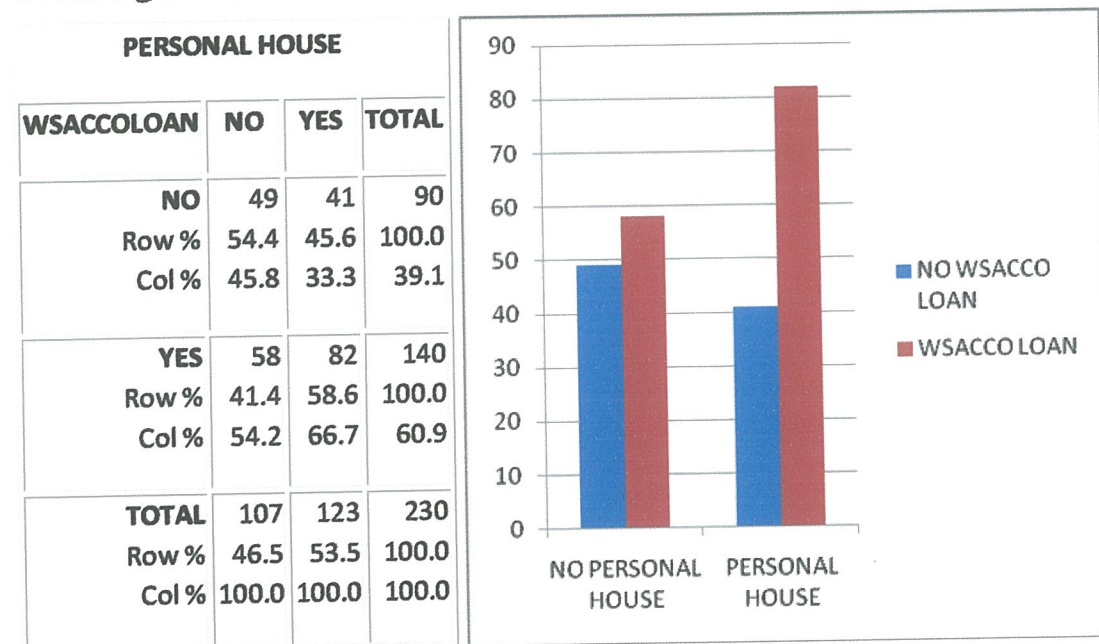


Table 4-44 Soldiers with a Small Family; WSACCO Loan and a Personal House

Figure 4-50 Soldiers with a Small Family; WSACCO Loan and a Personal House

Form table 4-44 and Figure 4-50, among the soldiers that had families of less than seven members and had not taken loans, those that did not have a personal house were 49 (54.4 %) and those that had a personal house were 41 (45.6 %). Among the soldiers with less than five family members that had taken a WSACCO loan, those that did not have a personal house were 58 (41.4 %) and those that had a personal house were 82 (58.6 %). The odds ratio was 1.6897 at a 95 % confidence interval of 0.9905 to 2.8822. The risk ratio was 1.3142 showing that there was a 31.4 % higher chance of having a soldier with a family of less than seven who had taken a WSACCO

loan with a personal house as compared to an soldier with a family of less than seven members without a loan. The p-value was 0.03623 showing that the relationship was statistically significant.

4.7.28 Soldiers with A Family Size Less Than Seven Who Took A WSACCO Loan Related To Those Who Had A House With An Iron Roof

Iron Roof			
Wsaccoloan	No	Yes	Total
No	63	27	90
Row %	70.0	30.0	100.0
Col %	43.2	32.1	39.1
Yes	83	57	140
Row %	59.3	40.7	100.0
Col %	56.8	67.9	60.9
Total	146	84	230
Row %	63.5	36.5	100.0
Col %	100.0	100.0	100.0

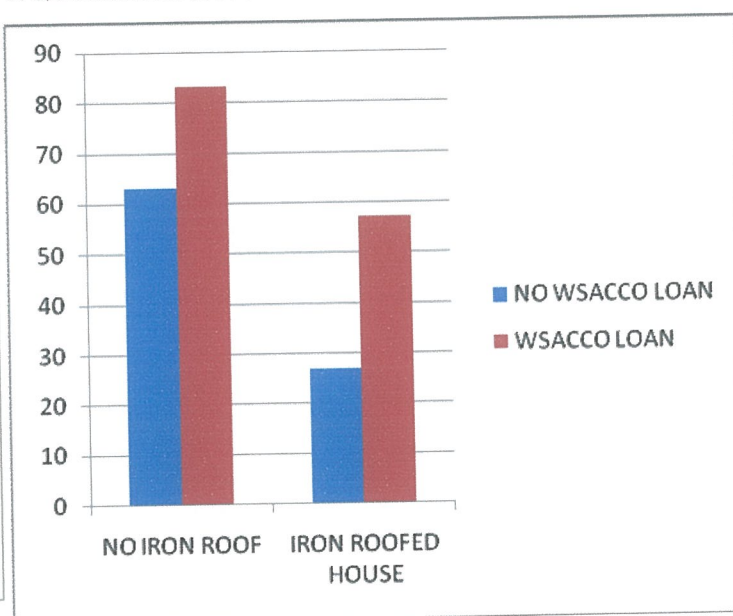


Table 4-44 Soldiers With Small Family; A WSACCO and Iron Roof

Figure 4-50 Small Family; WSACCO Loan and Iron Roof

As in table 4-45 and figure 4-51, among the soldiers that had families of less than seven members and had not taken loans, those that did not have an iron roofed house were 63 (70.0 %) and those that had an iron roofed house were 27 (30.0 %). Among the soldiers with less than five family members that had taken a WSACCO loan, those that did not possess an iron roofed house were 83 (59.3 %) and those that had an iron roofed house were 57 (40.7 %). The odds ratio was 1.5992 at a 95 % confidence interval of 0.9126 to 2.8137. The risk ratio was 1.1807 showing that there was an 18 % higher chance of having a soldier with a family of less than seven who had taken a WSACCO loan with furniture as compared to an soldier with a family of less than seven members without a loan. The p-value was 0.0654 showing that the relationship was by mere chance.

4.7.29 Soldiers With a Family Size Less Than Seven; a WSACCO Loan and a Mobile Telephone

MOBILE PHONES			
WSACCOLOAN	NO	YES	TOTAL
NO	40	50	90
Row %	44.4	55.6	100.0
Col %	46.0	35.0	39.1
YES	47	93	140
Row %	33.6	66.4	100.0
Col %	54.0	65.0	60.9
TOTAL	87	143	230
Row %	37.8	62.2	100.0
Col %	100.0	100.0	100.0

Table 4-46 Small Family; WSACCO Loan and Mobile Phone

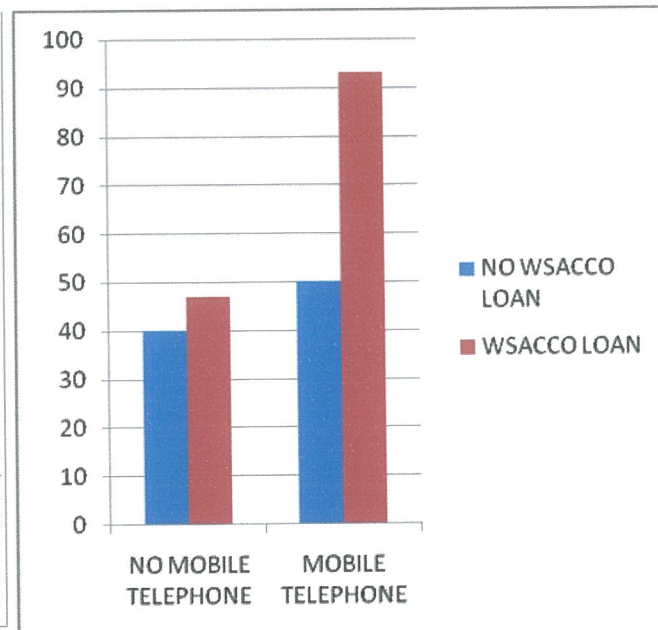
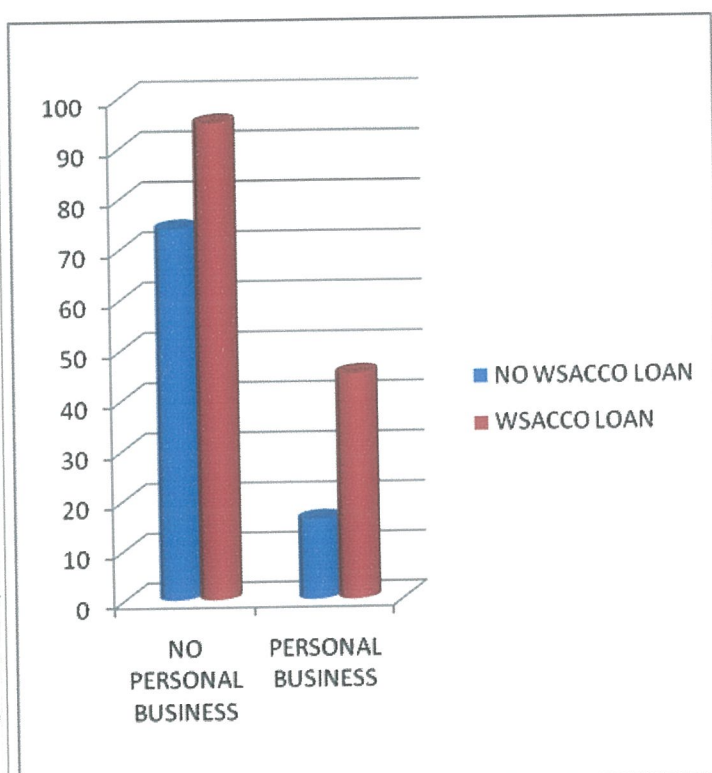


Figure 4-52 Small Family; WSACCO Loan and a Mobile Phone

As in Table 4-46 and Figure 4-52, among the soldiers that had families of less than seven members and had not taken loans, those that did not have mobile telephones were 40 (44.4 %) and those that had mobile telephones were 50 (55.6 %). Among the soldiers with less than five family members that had taken a WSACCO loan, those that had no mobile telephone were 47 (33.6 %) and those that had a mobile telephone were 93 (66.4 %). The odds ratio was 1.5830 at a 95 % confidence interval of 0.9188 to 2.7272. The risk ratio was 1.3239 showing that there was a 32 % higher chance of having a soldier with a family of less than seven who had taken a WSACCO loan with a mobile telephone as compared to an soldier with a family of less than seven members without a loan. The p-value was 0.06451 showing that the relationship was by mere chance.

4.7.30 Soldiers with a Family Size Less Than Seven with WSACCO Loan and Personal Business

PERSONAL BUSINESS			
WSACCO LOAN	NO	YES	TOTAL
NO	74	16	90
Row %	82.2	17.8	100.0
Col %	43.8	26.2	39.1
YES	95	45	140
Row %	67.9	32.1	100.0
Col %	56.2	73.8	60.9
TOTAL	169	61	230
Row %	73.5	26.5	100.0
Col %	100.0	100.0	100.0



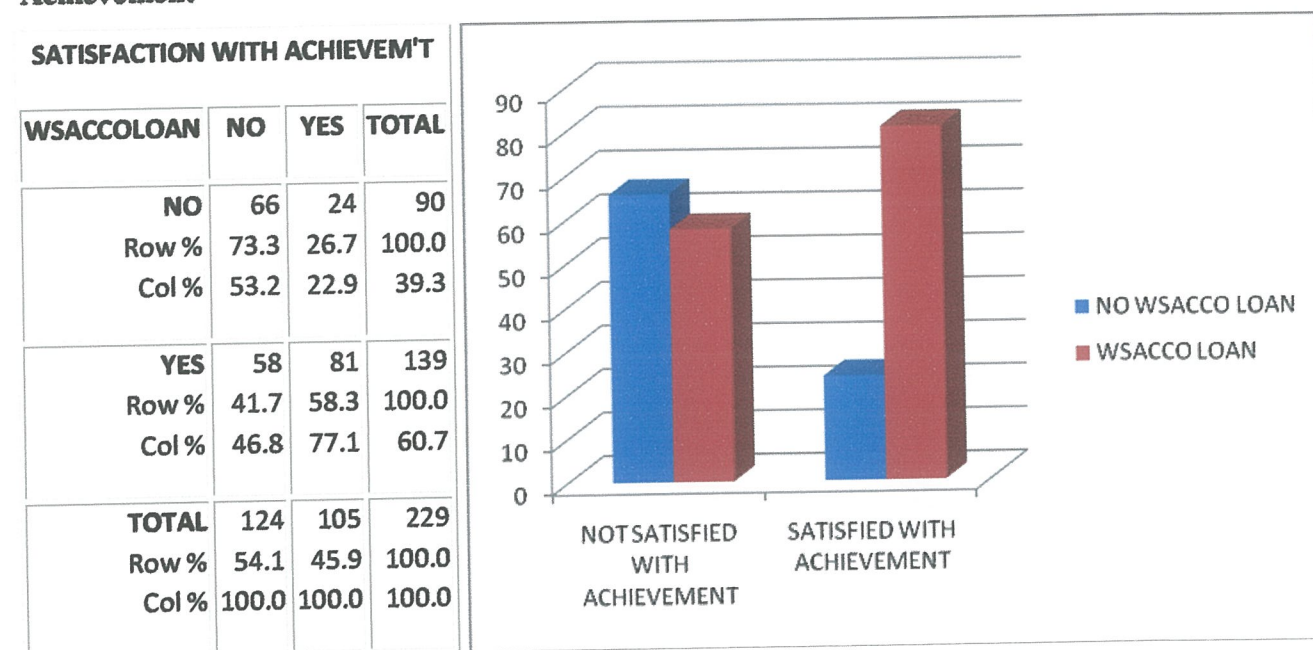
**Table 4-47 Small Family;
WSACCO Loan &
Personal Business**

**Figure 4-53 Small Family;
WSACCO Loan & Personal Business**

From Table 4-47 and figure 4-53, among the soldiers that had families of less than seven members and had not taken loans, those that did not have a personal business were 74 (82.2 %) and those that had a personal business were 16 (17.8 %). Among the soldiers with less than five family members that had taken a WSACCO loan, those that did not have a personal business were 95 (67.9 %) and those that had a personal business were 45 (32.1 %). The odds ratio was 2.1908 at a 95 % confidence interval of 1.1478 to 4.1814. The risk ratio was 1.2117 showing that there was a 21 % higher chance of having a soldier with a family of less than seven who had taken a WSACCO loan with a personal business as compared to an soldier with a family of less

than seven members without a loan. The p-value was 0.01111 showing that the relationship disproved the null hypothesis.

4.7.31 Soldiers with a Family Size Less Than Seven, WSACCO Loan and Satisfaction with Achievement



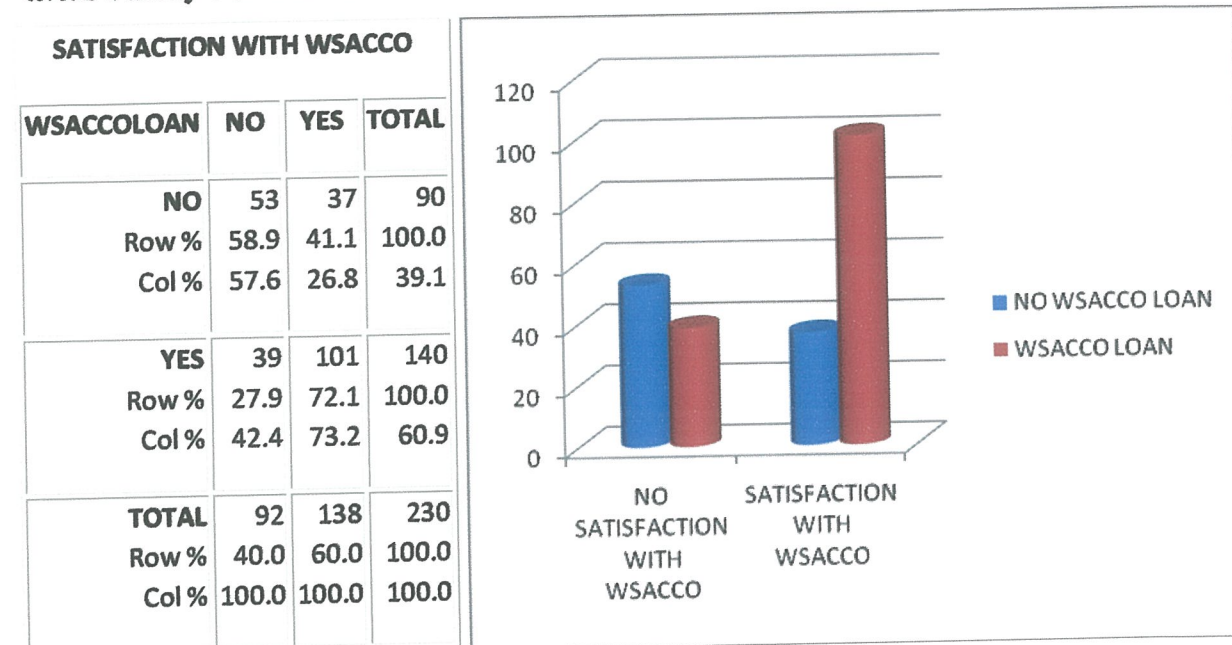
**Table 4-48 Small Family;
WSACCO Loan & Satisfaction
with Achievement**

**Figure 4-54 Small Family; WSACCO Loan
& Satisfaction with Achievement**

From Table 4-48 & Figure 4-54, it can be seen that Among the soldiers that had families of less than seven members and had not taken loans, those that were not satisfied with personal achievement were 66 (73.3 %) and those that were satisfied with personal achievement were 24 (26.7 %). Among the soldiers with less than five family members that had taken a WSACCO loan, those that were not satisfied by personal achievement were 58 (41.7 %) and those that were satisfied by personal achievement were 81 (58.3 %). The odds ratio was 3.8405 at a 95 % confidence interval of 0.1586 to 6.8329. The risk ratio was 1.7575 showing that there was a 75 % higher chance of having a soldier with a family of less than seven who had taken a WSACCO

loan with personal satisfaction as compared to an soldier with a family of less than seven members without a loan. The p-value was 0.0000001 showing that the relationship was by statistically significant.

4.7.32 Family Size Less Than Seven, WSACCO Loan and Satisfaction with Services



**Table 4-49 Small Family;
WSACCO Loan and
Satisfaction with Services**

**Figure 4-55 Small Family; WSACCO Loan
and Satisfaction with Services**

From Table 4-49 and figure 4-55, among the soldiers that had families of less than seven members and had not taken loans, those that were not satisfied by WSACCO were 53 (58.9 %) and those that were satisfied by WSACCO were 37 (41.1%). Among the soldiers with less than five family members that had taken a WSACCO loan, those that were not satisfied by WSACCO were 39 (27.9 %) and those that were satisfied by WSACCO were 101 (72.1 %). The odds ratio was 3.7096 at a 95 % confidence interval of 2.1204 to 6.4900. The risk ratio was 2.114 showing that there was a two-fold higher chance of having a soldier with a family of less than seven who had taken a WSACCO loan satisfied with WSACCO as compared to a soldier with a family of less than seven members without a loan. The p-value was 0.000003 showing that the relationship was statistically significant.

CHAPTER FIVE

DISCUSSION

5.1 ACCESS TO WSACCO LOANS

The overall access to WSACCO loans was 61.7 % and this could be due to many reasons including failure to have saved before being able to have a loan. Another study may indicate the failure to access loans but the current study concentrated on the relationship between those with loans and those who have not taken loans. Refer to Table 4.4.

5.1.1 Relation between Rank of Soldiers and Taking of WSACCO Loans.

The higher chance of having a WSACCO loan when a soldier was at a rank higher than Private was 25 %; at a p-value of 0.04339 and could be due to several factors. Access to where WSACCO loans can be cleared is mainly easier for higher rank soldiers who are more likely to be in administrative posts or at unit headquarters. On the other hand, the higher the rank, the more likely one to have served long enough to have saved the amount required to take a loan. This is different to what is in the US army probably due to the fact that their loans are accessed any where via the internet whereas in Uganda there is a lot of brick-and-mortar-banking.

5.1.2 Gender and Access to WSACCO Loans

The higher chances of a man taking a loan being two fold indicate that the ladies were less reluctant to take loans. The family burden tends to be on the male counterpart. Therefore, women tend to get contented with much less income.

5.1.3 Relationship between Soldiers Who Took WSACCO Loans and Marital Status.

Whereas in the United States married people are less likely to take loans since they many times may be in unstable relationship jeopardizing the future ownership of the property purchased according to Guttentag and having more rigorous consent according to Scarborough, married people significantly accessed loans at a 54 % higher rate than unmarried people. (Guttenttang J, March 6, 2014) (Scarborough J 2014) The responsibility of married soldiers could

have driven them to take loans. To get these loans, the consent from the spouse is not a requirement. Consent of the spouse ; unlike in America does not deter soldiers from getting loans. In addition, unlike in America, legal repercussions of taking a property loan have not been dire so far. Thus the soldiers with a family burden do not avoid loans because they may lose property acquired. But rather, they consider the need at hand. Nevertheless, the relationship could have been by chance as the p-value of 0.0533 was just near significance. In contrast to the Vietnamese house hold survey study, where the loans were used by mainly unmarried women as they were the ones in need of such little money to start a small business.

5.1.4 Relationship Between Level Of Education And WSACCO Loan Usage.

Since the uneducated tended to be paid more as explained in the context of the study, it may reflect on the usage of WSACCO loan by the less educated (69 %) as a means of consolidating their meager income. However, on further analysis of the different education levels, the highly educated of masters and graduates had a very high usage of loans coming to 100 % by the masters level soldiers indicating a reasoned crave for the WSACCO loans. Nevertheless, the small numbers of the highly educated had a very small effect on the overall picture. Noteworthy, at the lower end of the education strata where the numbers are large, among the slightly educated, the access was less for the learnt as evidenced by the risk ratio of 0.9965! Nevertheless, the relationship was not statistically significant at a p-value of 0.9965.

5.2 THE NUMBER OF FAMILY MEMBERS

The average size of a soldier's family of seven is higher than that of an average Ugandan Family which is five. This may be due to the difference in definition of family members who as defined by the national bureau of statistics is the people who have stayed in the family for longer than 6 months in the last 12 months or have stayed for less than six months but have an intention of staying longer than six months. Needless to say, is reflective of the average burden the soldier has.

5.3 STANDARD OF LIVING

5.3.1 Relationship between Having Taken a WSACCO Loan And Possession Of Household Furniture

The strong relationship between having taken a loan and a 25 % higher chance of possession of furniture at a p-value of 0.0419 serves to indicate that the furniture could have been procured after consolidating income. This is what a loan does; forced saving, as the money given to you is lump-sum and paid back in bits over a long period. However, when possession of furniture was tested among private soldiers, the relationship became statistically insignificant although those who had taken loans were 17 % more. This could be due to the fact that the private soldier may not be able to get a reasonable accommodation where he can keep the furniture procured. This and other factors like mobility may affect his decision to purchase furniture. On the other hand, when controlled for education, the possession of furniture was dependent on having taken a loan among the soldiers that were below senior four standard. Since education determines the salary, this tends to show that the WSACCO loan was rightly expressed as a means of supporting those soldiers with lower pay at a 35 % higher rate. But when it came to soldiers with unemployed spouses WSACCO loans did not have a reasonable effect. This may mean that the spouse's ability to work may have a lot of factors that may influence the ability to harness the benefits from the loan. Soldiers with family members less than seven, did not benefit from WSACCO loans as far as furniture is concerned. This may be due to the confounding effect of members with a small family that was looked at having an added advantage of having fewer expenses to make and therefore not depending on a loan to do what they need.

5.3.2 Relationship Between Having Taken a WSACCO Loan and Possession of a Mattress

Whereas there were more people who had taken a WSACCO loan and had a mattress compared to those that who had not taken a loan at a 25 % higher chance, the p-value was 0.3413 and had a mattress relative to the contrary. This relationship was not statistically significant. Compared to furniture, mattresses are an essential need that one can only lack if they cannot afford. As already known, the more necessary a good is the more its demand tends to be perfectly income inelastic.

(Ferguson C E, 1972) Thus, it is not surprising that the relationship was trivial. In real life, one would rather have no furniture but have a mattress.

5.3.3 Relationship Between Soldiers Using WSACCO Loans and Possession of a Personal House

The significantly higher number of soldiers; 27 %, with WSACCO loans and houses as compared to those without loans at a p-value of 0.05; is probably due to the fact that these soldiers needed a form of saving that WSACCO loans impose on soldiers by giving them low-interest loans. In the case of a house, one would need a lot of money to build a house in comparison to having furniture or a mattress. And a house needs more determination and time compared to buying a bed or a mattress. Controlling for rank, giving a private soldier a WSACCO loan did not significantly increase his chance of possessing a house. The loan taken by a private soldier seemed to be too small to enable him acquire a house. Alternatively, this difference may be recognized after several loans or when the soldier first saves and then gets a loan to top up the saved money. This is what is called target saving. The uneducated group was also not helped significantly by WSACCO loans probably because they generally get small loans which are based on their relatively meager salary. But when it came to small families of less than seven members, personal houses were significantly more among soldiers with WSACCO loans at a 23 % higher rate and a p-value of 0.0362. From that angle, the members were able to utilize the loan if not overburdened by large families.

5.3.4 Relationship Between Having Taken a WSACCO Loan and Having A House With A Ceiling

Among the soldiers who had not taken WSACCO loans, there was actually a slightly higher ratio of soldiers 1% with houses with a ceiling as compared to those without a ceiling. But the difference was negligible at a p-value of 0.7606. Needless to say, the ceiling is a factor that many low rank soldiers may not consider important especially if they have constructed a house of their own. Rented houses if accidentally included are more likely to have a ceiling.

5.3.5 Relationship Between WSACCO Loan And Possession Of A Brick Walled House

At a risk ratio of 1.0002, there was almost no difference in chance of having a brick walled house when they had taken a loan as compared to the group that had not taken a loan. The house seems to still hold more importance as compared to having it brick walled. The larger number of lower ranked soldiers makes the mud and wattle houses have a bigger effect on the statistics as the numbers determine the outcome.

5.3.6 Relationship Between Having Taken a WSACCO Loan and Having a House With a Cemented Floor

The higher ratio of soldiers with a house among the group with WSACCO loans is expected as it occurred. However, the difference remains subtle at 13 % as evidenced by the p-value of 0.1313. Nevertheless, the cemented house still stands out as more crucial to the low ranking soldiers than the ceiling and brick wall. The Uganda National Bureau of statistics figures on houses were not available for comparison.

5.3.7 Relationship Between Having Taken a WSACCO Loan and Having a House with an Iron Roof

The high chances of finding a house with an iron roof among those who had taken a WSACCO loan standing at a risk ratio of 1.1706 shows that WSACCO loans have helped soldiers harness funds for roofing their houses by 17 %. Possession of an iron roof is the one statistically borderline factor that becomes statistically insignificant when controlled for rank, education, having an unemployed spouse and having a family of less than seven. Nevertheless, there are a larger number of those with loans and a personal house. It is important to note, that loans have a bigger effect at a higher rank and education status. On the other hand, Soldiers with lower ranks are more likely to have unemployed spouses and fewer family members.

5.3.8 Relationship Between WSACCO Loan and Having Running Water in Their House

There were very few soldiers with running water and is 8.4 %. But this is similar to the National rates given by the UN-Water document of 1990 which is rather outdated and gave the access to piped water to be 10 %. This rate could have doubled by the time of the data collection

making soldiers to beat a very low piped water rate. On the other hand, WSACCO loans did not do much about the abysmal rate. There were five percent higher number of soldiers with piped water in the group that had taken WSACCO loans. Nevertheless the statistical significance was near significance. It must be considered here that it is more difficult to install water in the villages where these houses for soldier are built. This makes the chance of loans affecting running water to be dependent on the rural tap water network; which is still a long way.

5.3.9 The Relationship Between Soldiers Having Taken a WSACCO Loan and Having Electric Equipment in The House

There were more people that had taken WSACCO loans that had electricity as compared to the group that had not taken WSACCO loans. However, the chance of having electric equipment was only 1.2 % higher in the group that had taken a WSACCO loan. The p-value was 0.8410 showing that the relationship was statistically insignificant. Electric equipment are used in upscale life in Uganda. This is in tandem with the electrification statistics which indicate that 6% of the general population access power (Ojambo F, 2001). Whereas most barracks have power, this assessment was for their homes upcountry. In comparison to furniture, electrical equipment is more expensive, require an electrical grid and are not very essential.

5.3.10 Relationship Between Soldiers Having a Wsacco Loan and Those Having Electricity

Whereas the percentage of soldiers that had electricity among the group that had taken WSACCO loans was higher by 2.7 % in the group that taken loans than in the group that had not taken loans. The relationship was not statistically significant at a p-value of 0.2779. This may be related to the possession of a personal house or access to an electric grid on top of capability to pay. However, if electricity was very essential for life, the soldiers would have taken trouble to purchase generators or solar panels. Since electricity is not critical for life, it is likely that the soldiers did not consider it a factor for taking loans. The total percentage of soldiers with electricity stands at 9.7% which is slightly higher than the 6 % which is the National access rate (Ojambo F, 2001). This is not surprising as the soldiers have exposure to electrical usage to the least and a reasonable finance support to be able to pay for what it takes to have domestic power.

5.4 POSSESSION OF PROPERTY

5.4.1 The Relationship between Soldiers Taking WSACCO Loans and Those Possessing Land

Among the soldiers that had taken soldiers with WSACCO loans, there was a 13 % higher number of soldiers that had personal land compared to the group that had not taken a WSACCO loan. However, the relationship was not statistically significant at a p-value of 0.4381. Noteworthy, the possession of land depends so much on inheritance since it is the one factor that rarely depreciates or gets old. For that matter, land does not get out of fashion, neither becomes unserviceable and rarely gets spoiled. This means there are chances that the data is much more affected by inheritance than the other items that would be useless by the time they cross generations. Whereas the principal investigator tried to exclude the soldiers that inherited property, there are high chances that some information could not be obtained. Indeed the fear of absolute transparency about land matters is evidenced by the fact that some soldiers declined to mention whether they had land or not. With more support, more soldiers may have land if more vendors that can be paid by WSACCO and the soldiers acquire personal land.

5.4.2 Relationship between Having a WSACCO Loan and Possession of Four or More Cows

Among the people that had taken WSACCO loans a larger percentage of 10 % had four or more cows compared to those that had not taken loans. Nevertheless, the relationship was not statistically significant at a p-value of 0.05744. The chance effect was therefore only augmented probably by those who culturally have to possess cows. These are mainly from Western Uganda; who make up a relatively large percentage of the Ugandan population from which the soldiers came.

5.4.3 The Relationship between a Having Taken A WSACCO Loan and Having a Mobile Telephone

There was a 42% higher number of soldiers with mobile telephones in the group that had taken WSACCO loans as compared to the group that had not taken loans. The p-value shows very high statistical significance at 0.0069. Whereas the telephone is not in the standard means of assessing poverty, it stands out as a means of accessing a lot of services that it was imperative

that it be looked at separately. Clearly the soldiers that had taken loans had been assisted by WSACCO loans to acquire this asset. This result was echoed by the private soldiers, education below senior four and the unemployed spouses groups. What is uniform in all these groups is the effective improvement of income by WSACCO loans as expressed by the significance of this relationship. However, in the family members less than seven group, the WSACCO loan was not effective in improving access to mobile telephones. This could be explained that among soldiers with a small family, the mobile telephone was not necessarily purchased after accessing a loan. This could be due to the fact that they did not have a large family burden.

5.4.4 The Relationship between WSACCO Loan Usage and Possession of a Personal Business

A personal business helps a soldier to multiply his salary. In addition, he can be able to supplement the salary in the last days of the month when the salary is finished. Personal business turned out to be possessed by more soldiers that had taken WSACCO loans by 20 % as compared to those that had not taken the loans. The p-value was 0.00194. In reality, WSACCO loans helped the UPDF soldier to get a personal business as compared to those soldiers that had not taken a WSACCO loan. Personal businesses are the one factor that was improved significantly even when we considered private soldiers, those whose education is below senior four standard, those with unemployed spouses and those with family members less than seven. This is in line with the fact that Uganda has one of the highest rates of formation of enterprises in the World. This is mainly because most peoples' salaries are sufficient after supplementation with a private business. But also the good weather and availability of food allows one to survive even after having invested the salary.

5.6 SATISFACTION

5.6.1 The Relationship between Soldiers That Had Taken a WSACCO Loan to Satisfaction with Achievement

There was a very high statistical relation between soldiers that were satisfied with personal achievement and acquisition of WSACCO loans. In the group that had taken loans, those that were satisfied were twice as many as in the group that had not taken loans and the p-value was 0.0000000001. Soldiers that had seen the light had acquired assets or personal business. It is therefore not surprising that the soldiers that had saved were able to borrow and derive the intended satisfaction. Satisfaction with achievement is statistically significant in all the controlled groups. This means that WSACCO salary loans universally improve self appreciation. Whereas loans tend to have a negative psychological effect when people fail to pay, these loans were deducted from a salary and soldiers did not have such a large burden of repayment or failure to pay. On the other hand, the soldiers had taken loans that had been calculated to be within the means for the soldier to pay.

5.6.2 The Relation Between Having Taken WSACCO Loan And Satisfaction With WSACCO

Customer care has many times been a problem to WSACCO as an institution that necessitated a comparison of what may determine membership satisfaction. Important is the fact that the source of the funds to lend is the members' contribution; which the members have to do willingly. There was a very high statistical relation between members' satisfaction in the group that had taken WSACCO loans compared to the group that had not taken loans. Indeed, there was 2.3 times the number of soldiers satisfied in the group that had taken loans compared to the one that had not taken loans. Statistical significance was at a p-value of 0.0000000004. Therefore, the member satisfaction depended a lot on members having taken a loan. This means that the soldiers have derived significant satisfaction from WSACCO when they take loans from the cooperative. This disproves the theory that loans bring dissatisfaction and stress due to failure to pay.

6.0 CONCLUSION

- 6.1 Access to WSACCO loans is 61.7 % in UPDF.
- 6.2 The Rank of the soldier influenced access to WSACCO loans by 25 %.
- 6.3 The percentage of men accessing loans is two-fold (100 % higher than) females.
- 6.4 Married soldiers take WSACCO loans more than unmarried soldiers at a 54 % higher rate.
- 6.5 Education increased access to WSACCO loans among the highly educated and is 100 % among masters and PHD graduates. However, access was reduced at a middle level 55% and is higher among the uneducated (69 %).
- 6.6 Soldiers have an average of seven family members.
- 6.7 WSACCO loans improved acquisition of furniture by soldiers below senior-four standard by 25 %, but not those with unemployed spouses or small families.
- 6.8 WSACCO loans increased acquisition of personal houses by soldiers by 27 % especially those with small families but not among privates and uneducated soldiers.
- 6.9 WSACCO loans did not significantly increase the number of soldiers with houses with a ceiling, brick walls, a cemented floor, running water, electric equipment, domestic electricity nor mattresses, personal land and possession of more than four cows.
- 6.10 Loans improved acquisition of iron roofed houses by soldiers by 17 % but not among soldiers with lower ranks, lower education status, with unemployed spouses or fewer family members.

6.11 WSACCO loans improved acquisition of mobile telephones by soldiers by 42 % and when controlled for rank, education and employment of spouses.

6.12 WSACCO loans improved acquisition of personal businesses by 20 %.

6.13 Personal gratification and satisfaction with WSACCO was improved two-fold by acquisition of loans.

In a nutshell, WSACCO loans were accessible to most soldiers, improved almost all parameters of standard of living, improved possession of property, personal business and psychological satisfaction. This proves the theory that WSACCO salary loans improve soldiers' welfare. Therefore, the null hypothesis is not true for UPDF soldiers in Uganda.

8.0 SUMMARY

8.1 Background: In Uganda, like in many third world countries, many salaried employees cannot have a reasonable standard of living despite the fact that their salaries are reasonable. Many employees take loans to finance their welfare projects and may improve welfare only if used well. It is on these premises that it is necessary to find out if loans make a difference in a soldiers' lives. In the army, loans have always been given by loan sharks, commercial banks and currently WSACCO; a microfinance institution.

8.2 Methods: After multi-stage sampling, soldiers in ten barracks were interviewed for loan usage, property and documents inspected and evaluated in a cross-sectional prospective study by Chi-square and Fisher's tests in a logistic regression model.

8.3 Results: WSACCO loans are accessed by 61,7 % of soldiers. A soldier's rank being higher than Private, a soldier being married or masculine, increases access to WSACCO loans by 55 % and two fold respectively; p-value 0.04339, 0.0386 and 0.0533 respectively. However, marriage and low level of education did not increase access to WSACCO loans; p-values 0.10015 and 0.0533 respectively (Table 8-1). The average number of family members is seven, the median six and the commonest was five. WSACCO loans were not associated with an increase in the number of soldiers with mattresses, ceiling, brick-walled house, cemented floor, running water, electric equipment, electricity, land and four or more cows; p-values 0.3413, 0.7606, 0.4995, 0.1313, 0.1053, 0.8410, 0.4381, 0.1753 and 0.1141 respectively. WSACCO loans were associated with an increase in the number of soldiers with furniture, personal house, iron roofed house, mobile telephone, personal business, satisfaction with achievement and those satisfied with WSACCO; p-values 0.0419, 0.0500, 0.0321, 0.0069, 0.0019, 0.0001 and 0.0001 respectively (Table 6-2). Among Private soldiers, soldiers with WSACCO loans were not associated with possession of furniture, personal house or iron roofed house and the p-values were 0.2544, 0.1140 and 0.0759 respectively. The private soldiers with a WSACCO loan were associated with possession of a mobile telephone, personal business, satisfaction with achievement and satisfaction with WSACCO; p-values 0.0461, 0.058, 0.0001 and 0.0001 respectively (Table 8-2). Soldiers whose education was below form four with WSACCO loans were not associated with possession of personal house and iron roof and the p-values were 0.179 and 0.2662 respectively. Soldiers with education below senior four were associated with possession of mobile telephone,

personal business, satisfaction with achievement and WSACCO p-values 0.0231, 0.00012, 0.0001 and 0.0001 respectively. Soldiers with an unemployed spouse were not associated with possession of furniture, personal house and iron roof; p-values 0.0593, 0.2866, 0.3391 respectively. Soldiers with unemployed spouses were associated with possession of a mobile telephone, personal business, satisfaction with achievement and satisfaction with WSACCO; p-values 0.049, 0.0439, 0.0003 and 0.0001 respectively. Soldiers with less than seven family members who had WSACCO loans were not associated with possession of furniture, an iron roofed house and a mobile telephone; p-values 0.1123, 0.0654 and 0.06451 respectively but were associated with the possession of a personal house, personal business, satisfaction with achievement and WSACCO; p-values 0.0362, 0.0111, 0.0001 and 0.0001.

8.3.1 Factors Affecting Access to WSACCO Loans in a Nutshell

Table 8-1 Summary of Factors Affecting Access to WSACCO Loans

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	ITEM	ODDS RATIO	RISK Ratio	CONFIDENCE INTERVAL		P-VALUE	REMARKS
				Lower	Upper		
(1)	Rank Higher Than Pte	1.5330	1.2519	1.0118	2.3226	0.04339	Sig
(2)	Gender	4.9929	1.9982	0.9940	25.0784	0.0386	Sig
(3)	Marriage	1.6525	1.545	0.9042	3.0198	0.10015	Insig
(4)	Education S4 or more	0.9943	0.9965	0.6471	1.5280	0.0533	Insig

8.3.2 Statistical Summary of Occurrence of Different Family Sizes

Obs	Total	Mean	Variance	Std Dev
380	2576.0000	6.7789	45.0328	6.7106

Minimum	25%	Median	75%	Maximum	Mode
1.0000	4.0000	6.0000	8.0000	80.0000	5.0000

Table 8.2 Statistical summary of family size

Overall, a there were significance association of taking and WSACCO loans and possession of furniture, possession of a house, iron roof, mobile telephone and a personal business, satisfaction with own achievement and WSACCO services (Table 8-2).

8.3.4 Controlled Factors and How WSACCO Loans Affect Those That Have Statistically

Significant Factors

Table 8-3 Summarizing Controlled Factors and How WSACCO Loans Affect Those That Have Statistically Significant Factors

Private Soldiers							
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	RELATED TO	ODDS RATIO	RISK Ratio	CONFIDENCE INTERVAL		P-VALUE	REMARKS
				Lower	Upper		
(1)	Furniture	1.4220	1.172	0.7754	2.6077	0.2544	Insig
(2)	Personal House	1.6312	1.25	0.8877	2.9973	0.1140	insig
(3)	Iron Roof	1.7614		0.8770	3.5375	0.0759	Insig
(4)	Mob phon	1.7714	1.3857	0.9611	3.2650	0.0461	Sig
(5)	Personal Business	2.0514	1.138	0.0906	4.6261	0.058	Near significance
(6)	Satisfaction with achievement	3.8813	1.6824	1.3079	2.1641	<0.0001	Sig
(7)	Satisfaction with WSACCO	3.5583	2.188	1.8792	6.7377	<0.0001	Sig
Education Below Senior Four							
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	RELATED TO	ODDS RATIO	RISK Ratio	CONFIDENCE INTERVAL	P-VALUE	REMARKS	
				Lower	Upper		
(8)	Furniture	1.9093	1.3520	1.1275	3.2332	0.01094	Sig
(9)	Personal House	1.3650	1.2028	0.8213	2.3355	0.1379	Insig
(10)	Iron roof	1.1915	1.0638	0.6919	2.0517	0.2662	Insig
(11)	Mob Phon	1.7648	1.3783	1.0441	2.9831	0.0231	Sig
(12)	Personal business	3.0182	1.2170	1.4267	6.3848	0.00012	Sig
(13)	Satisfaction with achievement	4.2840	2.0240	2.4624	7.4530	<0.0001	Sig

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APPENDIX I
QUESTIONNAIRE

TITTLE: THE EFFECT OF WAZALENDO SACCO LOANS ON THE WELFARE OF SOLDIERS.

Identification

Date (dd/mm/yyyy)...../...../..... Serial No.....Army No.....Rank.....
Home District.....Department.....Tel No(s).....Sex.....
Unit.....Tribe.....

Objective Findings

WSACCO loan (Y/N).....If yes, when(dd/mm/yyyy).....How much...
.....Years served in the army.....Total balance in bank account possessed
on 20th this month.....
No of Family members.....Marital status.....Age of spouse.....Illness in last year.....
Mental illness in family.....Domestic animals possessed and Nos
Education of spouse.....Occupation of
spouse.....Education of soldier..... Appointment in the army.....

Personal house (Y/N).....h/o fire, floods , burglary or any disaster.....
Roofing material.....Electricity (Y/N).....Running (tap) water(Y/N).....
Wall material.....Floor material Ceiling (Y/N).....

Military house House hold furniture: Chairs.....Sofa chairs.....Tables.....
Beds.....Mattresses.....
Electronic equipment (minus mobile phones) seen.....

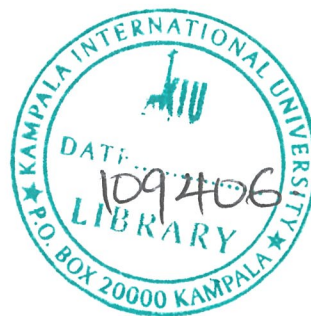
Personal property.....cost.....Current Value.....
Personal business.....weekly income.....
Source..... WSACCO loan/ other bank/ Family assets / Salary/ Saving / Other (specify)
Mobile telephone(s) (Y/N).....Total air-time available on all phones in the house.....

Satisfaction with achievements (Very, Fairly, not sure, Unsatisfied, Very unsatisfied).....

Satisfaction with WSACCO (Very, Fairly, not sure, Unsatisfied, Very unsatisfied).....

Examiner's name.....Signature.....

Principal investigator's name.....Signature.....



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