

MARKETING IN KENYA:
A CASE STUDY OF THE FUNCTIONS OF RURAL MARKETS IN
KISUMU DISTRICT //

BY

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degree of Masters of Business and Administration in
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Achieng'

Leah Achieng' Muma

This thesis has been submitted for examination with my approval as University Supervisor.

Francis Kibera

Dr. Francis Kibera

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ABSTRACT

This thesis examines the functions of rural markets in a section of Kenya - Kisumu District. It describes and analyzes the sellers' and buyers' behaviour. It also describes the economic significance of these rural markets. The author hopes that such an analysis and description will bring to record the important aspects typical of a rural market, and how its trade can be improved for the benefit of traders and consumers who interact in these rural markets.

Out of the 107 markets in the district, 10 were randomly selected for the purpose of the study. The ten markets were then stratified into two groups, buyers and sellers, from which samples were drawn. A total of 586 successful interviews were carried out. As for data collection, this was done through interviews from structured questionnaires, direct observation and census counts. By interviewing the traders and consumers it was possible to collect information on consumer behaviour and trader characteristics. Three basic items have been examined in this study; First, the functional role of markets has been discussed. It was found the markets act as Economic Institutions as well as social institutions. As economic institutions, markets can be classified as Retail markets, Wholesale markets or both Wholesale and Retail.

Markets also act as a social gathering venue, where young men and women usually meet for courtship and village elders meet to discuss their homestead problems. Therefore, markets serve multifunctional roles. They are both an economic and social institutions where relatives and friends meet and gossip in a relaxed atmosphere.

The second feature analyzed is the market traders' and consumers' behaviour, the study revealed that there are two types of sellers - part time sellers who indicated that market selling was secondary to their main occupation and full time sellers who are professional traders. The part time trader usually visits one or two markets which are nearer to his homestead while the professional trader visits as many as four or five markets in a week. The professional trader earns his income through the market trade.

On the other hand for consumers the study revealed that buyers are not willing to travel to many markets to buy. That is consumers tend to visit the home market to purchase feedstuffs. However, they visit other distant markets to purchase manufactured goods such as Clothes, plates and furniture.

Third, it also describes the economic significance of these markets mainly in terms of cash generated from them, employment offered, and their role as communication centres. Sellers interviewed stated that they value the market because it is a source of cash which they can use to pay school fees, buy clothing, and food. Markets also offer self employment to unemployed.

Various hypotheses were also tested. The tests revealed that:

- (i) There is a significant relationship between population density of the location and the market size.

- (ii) The number of markets is not related to the physical size of the location.
- (iii) There is significant relationship between the number of markets in a location and the population of the location.
- (iv) There is no significant relationship between the assortment of goods in a market and the distance of the market from a major town.
- (v) The size of the market is related to the level of incomes of the people in the surrounding area.
- (vi) There is a significant relationship between the assortment of goods displayed in the market and market size in terms of attendance.

CHAPTER IINTRODUCTION:

Market place systems are conventional features of rural economic organizations throughout much of contemporary Africa. "By market place is meant a specific usually authorised site where buyers and sellers meet at regular intervals for the purpose of exchange".¹

These rural markets serve as nodal points for the distribution of a wide range of local and imported goods and services. Their accessibility is quite important for indigenous traders, farmers, herdsmen and artisans who depend on the market for their income.

Despite the importance of rural markets, Geographers, Sociologists, and Economists have generally shown little interest in this field of marketing in developing countries. As Moyer and Hollander assert, "It was either ignored, with attention shifting to production, finance and other activities presumed to contribute more towards development or it is attacked as a parasitic function not only contributing nothing to the economic system but draining its vitality as well".²

1 Good, C.M., Rural Markets & Trade in East Africa.
University of Chicago, Research Paper No. 128, 1970 P6.

2 Moyer R. and Hollander S. (Eds.), Markets and Marketing in Developing Economies: (AMA) Homewood:
ILLINOIS, 1968 P41.

However, some contributions have been made on this field recently particularly in West Africa. An example of this kind of writing is Bohannon and Dalton³ which stimulated this activity. Other important writers include Hill⁴ and Hodder and Ukwu⁵. These writers noted a great contrast between the development of market structures in East and West Africa, for example Hill refers to these contrasts as "the greatest geographical dichotomies of Africa"⁶. Since this statement was made writers have inquired into this dichotomy and although the contrast remains somewhat valid, it has to some degree been reduced. That is, some literature is now available on rural markets in East Africa. Contributions have been made by Wood⁷, Good⁸, Edyau⁹, which provide valuable insights into the market structure of various districts in East Africa.

In spite of these contributions there is still a general lack of attention to local system of exchange in this part of the world which might lead to an assumption that market places are of

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- ³ Bohannon P. and Dalton G. (Eds.) Markets in Africa. Evanston: North Western University Press, 1962.
- ⁴ Hill P. 'Markets in Africa', Journal of Modern African Studies 1 No.4 (1963).
- ⁵ Hodder B.W. and Ukwu U.I. - Markets in West Africa. Ibadan : Nigeria, Ibadan University Press.
- ⁶ Hill P. 'Markets in Africa', Journal of Modern African Studies 1 No. 4 (1963) P.443.
- ⁷ Wood L.J., Rural Markets in Kenya : Nigerian Geographical Journal, Vol.17 (1974).
- ⁸ Good C., Rural Markets and Trade in East Africa University of Chicago, Research Paper No.128, (1970).
- ⁹ Edyau J.P., Rural Periodic Markets in Kaberamaido County, Makerere Geographical Department(1971) Occasional Paper No. 19.

marginal importance to the economic structures of East Africa. Local trade in rural market places is normally not recorded although it is significant in the rural areas for large amount of cash is generated from this trade. Rural markets are also significant because they act as exchange points, distribution points for various imported and locally produced commodities and lastly but by no means the least, they act as centres for dissemination of information. For most people in Kenya and Africa at large, it is through these local markets that Agricultural products, first enter the exchange economy. For example, maize, Horticultural crops, beans, sweet potatoes and fish are exchanged for cash in rural markets. It is also through the same market places that some of the imported or locally manufactured goods reach the consumers. For instance, imported China Tea Sets, cooking pans, pens, baby sheets, napkins and clothes are sold in the open market places. Kenyan manufactured goods such as soap, salt, detergents, plates, basins, cups and foam mattresses are also sold in the market place. Thus, an attempt to analyse trade in Kenya without specific reference to local markets would ignore the institutions and processes which are of great concern to the majority of the population.

Objectives of the Present Research:

The research reported here is conducted with three objectives in mind. First, the author attempts to describe and evaluate the functional role of market places as elements of exchange and distribution in Kisumu District - a large administrative and cultural unit in Western Kenya.

The second objective of the study will be to highlight the contributions of rural markets to the economic and social life of the Luos in Nyanza Province. This objective will mainly depict the economic

significance of these markets as will be studied by interviewing the local inhabitants who attend the rural markets.

The third objective is an attempt to classify markets in terms of their sizes and periodicity. This classification will indicate the relative importance of each market within the District in terms of attendance, its period of operation and the lines of goods it offers to the market attendants. The classification in terms of size or attendance, will hopefully facilitate effective planning of the market by Kisumu County Council. Proper expansion of the market sites, construction of adequate toilets to be used by traders and buyers and provision of licences to hoteliers who will be feeding the market attendants will all be facilitated. A brief description will also be included to explain the factors governing the size and market attendance.

Rationale for the Research Objectives:

The rationale for setting the above research objectives is partly because the studies reported in the Literature have been centred in West Africa and partly because the studies are mainly descriptive. None of the studies attempted to be analytical.

In terms of scope the majority of studies have concentrated only on the marketing activity within the market place, the exchange function and the role of the market women. However, they fell short of including the economic significance of these markets to the local indigenous people.

Little interest has been shown on these rural markets by social scientists. These rural markets are quite significant because they act as exchange

points. For most people in Kenya, it is through these local markets that agricultural products first enter the exchange economy. All these functions will highlight the economic significance of these markets to the rural population and the Luos of Nyanza Province in particular.

The third objective, where the author is attempting a classification, of markets according to their sizes (attendance), functions, and locations is mainly to add on the existing Literature. There has been attempt on market classification by Skinner¹⁰, Hodder¹¹, Uzoigwe¹², and the author wanted to extend this type of classification to local markets in Kenya, especially Kisumu District.

The Research Setting:-

Kisumu District is situated in the Western part of Kenya and it borders Lake Victoria. The District is one of the four Administrative units including Siaya, South Nyanza and Kisii which make up the Nyanza Province of Kenya.

The physical features of Kisumu District consist of a pleateau of gentle relief. "The central part which is occupied by Kisumu town makes up the Kavirondo Rift, to the west the rift has been flooded and it forms the Kavirondo Gulf while to the east, the floor is above the lake level, where it forms the Kane Plains"¹³

¹⁰ Skinner G.W. - "Marketing and Social Structures in Rural China." Part 1 - Journal of Asian Studies XXIV No. 1 (November, 1964)3

¹¹ Hodder B.W. and Ukwu U.I., Markets in West Africa. Ibadan; Nigerian, Ibadan University Press (1969)

¹² Uzoigwe U.N., Pre-Colonial Markets in Bunyoro Kitara, comparative Studies in Society and History Vol.14 No.4 September, 1972.

¹³ Mergan W.T.W. East Africa. Longmans East Africa, 1973

The annual rainfall in Kisumu District is rather low, about 1134mm. which is well distributed throughout the year. The vegetation found in the region is called the Lake-shore Savanna which provide grazing ground for cattle, sheep and goats. Cattle are quite important although sheep and goats are also kept. To the Luo cattle owning has great economic and social significance. That is, the more cows you have the richer you are.

In addition to cattle keeping the Luos cultivate sorghum, cassava, and maize for consumption. For cash they grow cotton, sugarcane and rice. Besides cattle rearing and cultivation, fishing is carried out. Fishing is important both in the lake, rivers and swamps. A wide variety of fishing methods is used including elaborate traps. Needless to say, fish is a major food of the Luos and Luhyas.

Evolution of the Rural Economy in Kisumu District:

At the beginning of the twentieth Century, the Luos were both cattle keepers and agriculturalists. The Luo men emphasized cattle rearing for cattle were a symbol of status and wealth.

Besides cattle keeping and crop farming inter-clan trade was carried out. The meeting places for trade were organized by adjacent clan elders or by adjacent war leaders. There was also intra-clan trade which was organized by the elders. This point is well illustrated by Were when she states that " the system of trade was by barter and commodities for exchange were groundnuts, simsim, sorghum, peas, papyrus, mats, beans, grass woven bowls (Ogudu), pots, clay pipes, baskets, iron bankles and hoes from Samia and Kaksingri."¹⁴ Trade and marketing were based on village life of a mixed economy system. This was the economic set up when the Europeans arrived in 1900.

¹⁴ Were P.(Mrs) " The origin and Growth of Iron Industry and Trade in Samia (Kenya)", (Unpublished B.A. Dissertation, University of Nairobi), 1973, P.51

However, the Europeans wished to establish an export economy that would make their occupation of the land pay and they desired to interest the Luos in consumer goods so that the new rupee currency would circulate in the countryside.

The Europeans, therefore, introduced cotton in Kano, Kajulu, Seme, Alego, and Kanyada locations between 1908 and 1928. Subsequently ginneries were installed at Kibos and Kamito. However, the Luos were not enthusiastic. On subsistence side there was little improvement in the farming methods of the Luos, except for the purchase of English hoe and the wheel plough. Therefore, cash economy by 1930 made minimal impact on the life of an ordinary man in the Luo land. Thus there was not much change noticeable in the consumer behaviour of the rural people in the 1930s. On consumer side, life was still essentially simple. However, one discernible development was the increase of African bicycle permit holders (Joringi) who brought fish from the lake shore, smoked it and then cycled over fifty kilometres to sell them at the rural markets.

After 1940 various improvements were observed. For example, permanent market places were established. The African District Council of Kisumu was given responsibility of fencing the market, collecting the market fees, and keeping the market tidy. After the establishment of the permanent market places, local residents began to acquire plots through the African District Council and constructed permanent and semi-permanent shops in a rectangular manner surrounding the market place. It is therefore usual to find a

a rectangular line of shops surrounding a fenced open ground which is the market place, in any rural shopping centre such as Ahero, Sondo, Mambaleo and Kiboswa.

Anticipated Contribution of the Study:

Owing to lack of information on Kenya's rural markets, first the author believes that by undertaking this research, the findings will increase an understanding of the importance of market places in Kenya by economists, anthropologists, geographers, and students of Business Administration.

Secondly, for academicians, the thesis is expected to stimulate those who are interested in learning more about rural markets to carry out research in other parts of Kenya and compare their findings with those of the present author.

Third, the research will help the local county council to evaluate the market distributions and how they allocate the days of market operation.

Fourth, the study will, it is hoped be of great help to those who are actually concerned with local marketing, that is to traders in the various market places. They will, it is hoped, be able to identify the forces which determine the economic conditions of the markets.

Another anticipated contribution is that the findings of the present research will encourage research in other areas, for example, on rural African run shops or businesses, the role of market places as service centres and the economies and diseconomies of marketing institutions.

It is also anticipated that the research finding will prove helpful to the Central Government which is committed to the development of rural areas in the current Development Plan. It will show them that the growth poles or growth centres should be the market places for it is through the market places that information can be disseminated to the rural population and it is through the same centres of local trade that new products and practices can be introduced to the rural population.

Plan of Materials in Subsequent Chapters:-

The remaining materials reported here are divided into four chapters. Chapter II contains the theoretical framework of the rural markets. This discussion is centred around market classification and functional analysis. The subheadings in this chapter are market typology, functions of rural markets, market distribution and conceptual hypotheses. Hence it is in this chapter that the bulk of the relevant literature is reviewed.

Chapter III contains the Research Design for the study. In this chapter, Data Collection Instrument is discussed, and pretesting of questionnaire, sampling design and methods of data analyses are delineated.

Chapter IV analyses the data on market sellers and trade organization. The results of the study are examined with respect to types of market sellers, the organization of trade and supply and sale of goods.

The final chapter deals with summary and conclusions. It discusses the research findings and the implications of the research findings to various groups.

CHAPTER IITHEORETICAL FRAMEWORK ON RURAL MARKETSMarket Classification:-

Rural markets are nodes of economic and social activity for a large portion of Africa's population. It is often the sole point of contact an African individual has with the national economic structure. Yet very little has been written on the functions and characteristics of these rural markets. However, some writers have contributed to this aspect and some literature is now available and is reviewed next.

Hodder stresses the significance of these rural markets by stating that, "it is through these markets that goods from abroad are absorbed and it is through these same markets that most local products, agricultural and cottage industrial products enter the economy."¹ He further attempts a classification of markets on the basis of functions for instance, retail, wholesale and distributive chain. However, this classification is not complete since a market can function both as a retail and wholesale institution. Hodder reviews his classification and attempts to classify markets according to locations and periodicity.

Thus he classified the Yoruba markets as:

1. The urban daily markets, which take place everyday and are characteristic of large towns like Ibadan.
2. The urban nightly market which is held every evening, beginning soon after dark and continues about ten o'clock.
3. The rural night market, which is held at regular intervals as at Ikereku.

¹ Hodder B.W., "The Yoruba Rural Market" in Bohannon and Dalton (Eds.) Evanson University Press, 1962.

4. The rural daily market, which often is primarily for providing fresh meat.
5. The rural markets which take place at regular intervals of several days at Akimyele.

Another study on market classification was made by Skinner in China. She identified a hierarchical set of marketing system comprising standard, intermediate and central marketing systems in ascending order. According to Skinner these Chinese rural markets can be classified as 'minor', standard, intermediate and central. These terms refer to the location of settlements. To Skinner a "minor market specializes in the horizontal exchange of peasant produced goods"² A standard market on the other hand is a rural market which meets all the trade needs of the peasant household. While a 'central' market is normally situated at a strategic site in the transportation network and has important wholesaling functions. Skinner noted that, "market systems..... are discrete only at basic level and each lower level system is typically oriented to two or three systems at each ascending level. As a result, marketing structures... take the form of interlocking networks."³

Uzoigwe⁴ also attempts a market classification of Bunyoro-Kitara. What Skinner calls a 'minor' market and/or 'standard' market, Uzoigwe identified them as a local market. This served a village or a group of villages. Here peasant produced goods were horizontally exchanged, but it was also a retail for salt and other commodities. A 'local' market was usually owned by

² Skinner G.W. Marketing and Social Structure in Rural China, Part 1 - Journal of Asian Studies XXIV No. 1 (November, 1964)3.

³ Skinner G.W., Op. Cit.P.68

⁴ Uzoigwe, U.N., " Precolonial Markets in Bunyoro Kitara", Comparative Studies in Society and History, Vol.14 No. 4 September, 1972.

the Saza chief and not by the community as in the Iboland. There were some markets in Bunyoro which he calls the 'royal' markets. Individuals were drawn from many parts of the empire to trade in such a market. These markets were established by royal sanction near the palace. To trade in a royal market was tantamount to trading near the source of power...

Uzoigwe⁵ refers to some markets as 'specialized' markets. By specialized, he did not mean that such markets sold only specialized items but that they were situated in a locality of certain goods such as iron implements, (hoes, knives, mats and so forth). Under this category he includes the riverain markets which arose in response to the trade in fish. Such markets were owned by a community as a whole and they have no equivalent in Skinner's classification.

The next category of markets in Bunyoro he calls 'frontier' markets which served different regions of a given political authority or two different regions of a given political authority or two different political authorities. Like Skinner's 'central' market, a frontier market was normally situated at a strategic site in the transportation network. These markets were owned by the ruler.

Uzoigwe's final category of markets are 'satelite' markets. These were markets established by the rulers of Kitara outside the boundaries of the empire and effectively controlled by them. He refers to them as 'satelite' because these rulers (Abakama) must have exercised some sort of influence in these parts to be able to establish markets in them and to control their operations.

Functional Analysis:

The second important aspect which many writers have dealt with is the functional analysis of markets.

⁵ Uzoigwe, U.N., Op Cit. P.37

Mikesell⁶ discusses the weekly markets or the (suq) in Morocco. These markets are held in the open, at pre-determined sites, which are deserted during the rest of the week. She states that, "the 'suq' is much more than a market in the economic sense, it is also a social and political assembly of great importance in tribal life".⁷ The local 'suq' also serves as an exchange point for sugar, salt, cooking oil and kerosene which are primary commodities that must be brought in from outside. Mikesell summarises that each market has four main functions.

- i) Distribution of local products
- ii) Exchange of rural surplus for urban goods.
- iii) Circulation of articles such as pottery and millstones from special places within the country, and
- iv) Dissemination of foreign imports.

These open air markets of the Moroccan type represent an attempt to reconcile desires for security and for commercial exchange.

Another important writer, Levine⁸ discusses the functional role of Keumbu market in Kisii. He stated that the market fulfills four Socio-Economic functions in terms of the general population. First it acts as a specialized economic institution where some crops may be sold for cash and various non-agricultural goods may be purchased. Second, the market gratifies the desires of many especially the young to have daily contacts with the appurtenances of Western culture through the purchase of articles such as cigarettes, bottled drinks, sweets and also through interaction in a relatively sophisticated commercial atmosphere.

⁶ Mikesell Marvin - "The role of tribal markets in Morocco, Geographical Review, Vol.48 P.243

⁷ Ibid. P. 246

⁸ Levine R. "Wealth and Power in Gusii Land," in Bohannan and Dalton, Markets in Africa, PP.534

Third, the market place is a meeting/^{place}where in the absence of traditional feeling concerning homesteads, privacy and inter-clan hostility, elders may gather, hererosexual liaisons may be initiated, local people can come into contact with those who are passing through the area and gossip may be passed on."⁹ In this sense a market place is viewed as freer than the local community homesteads.

Fourth, the government uses the market as a focal point for some of the services it provides. Adult literacy and community development programmes operated in rural markets and local inhabitants usually were required to bring their cattle to the market place to be branded as a safeguard against inter-district stock theft.

From these studies, one can conclude that markets serve several functions. It is both an Economic institution where trade or exchange takes places and a social venue where relatives, and friends meet to gossip in a relaxed atmosphere.

Hodder¹⁰ also agrees that Yoruba markets are not merely 'economic' institutions or phenomena, but are multifunctional institutions associated with several non-economic aspect of Yoruba culture. He argues that "Yoruba markets in fact demonstrate those characteristic of social institutions and that term is used by social anthropologists. That is markets have social organizations, values, material objects, and even sequence"¹¹. The Yoruba markets m demonstrate that:

- i) Each market has a social organization.
- ii) There is a set of notions and ideas or values about what a market should be.

⁹ Levine, R., Op Cit.P.535

¹⁰ Hodder B.W., and Ukwu, Markets in West Africa, Ibadan University Press, 1969.

¹¹ Ibid. P.40

- iii) Centering on each market there is a set of events which follow one another in a regular and predictable pattern, and
- iv) Material objects are exchanged in the market.

Hodder continues to illustrate that "the dominant economic function of periodic markets is bulk-building as well as bulk-breaking of local food products and local craft industrial products."¹² The market also act as distributing points of goods imported from other parts of the same country and from abroad.

In addition to the functional analysis and classification of the markets some writers like Wood¹³ have contributed towards consumer behaviour in rural market centres. Wood states that in the rural areas of developed countries consumers are usually within a range of a number of centres each of which offers a particular mix of goods and services. On the other hand, in the rural areas of developing countries markets are important service centres and other factors may influence the market visiting decisions. For instances, people frequently have to sell before they can buy. Thus the market which they choose to visit must offer a favourable opportunity for selling goods since many centres only offer marketing facilities periodically. Therefore rural residents are placed in a situation where they must weigh the merits of visiting a distant market today or waiting two days to visit a close market.

To summarise, markets act as bulk building centres, distribution points, exchange institutions and as a social gathering institution.

12 Hodder B.W. and Ukwu U.I., "Markets in West Africa". P.46

13 Wood L.J., "Spatial Interaction and Partitions of Rural Market Space", Journal of Economic and Social Geography, Vol.65, 1974.

Some writers discussed the relationship between Market Distribution and population, as well as market size and population. Several research studies tend to reveal that there does not exist any form of relationship between population and market places. For example, Hodder says that in Yorubaland, Western Nigeria, the distribution of periodic markets show little correspondence either with the distribution size of hierarchy or rural or urban settlement ,....."14. Mikesell also agrees with Hodder's finding that "in rural Morrocco where towns are virtually non-existing the bulk of the population lives far away from the actual market site....."15.

Wood on the other hand, found that the larger markets in Meru District occur in the areas of highest population density. He states that " the largest markets in each Tigania, Igembe, Makinduri and Maua occur in areas of highest population density which are in effect the traditional homelands of two sub groups"16 Both Maua and Makinduri were early nodes of infrastructural development and both are accessible to a large portion of the Meru population. Rural markets are usually located in the centre of trading centres. Some writers like Good¹⁷ have proposed that the existence of many shops in a trading centre with almost empty shelves shows clearly uneconomic use of labour.

14 Hodder, B.W. Op Cit P.51

15 Mikesell, "The role of Tribal Markets in Morrocco, in Bohannan and Dalton, Markets in Africa," P.494.

16 Wood L.J., "Spatial Interaction and Partitions of Rural Market Space," Journal of Economic and Social Geographers, Vol.65 No.1, 1974, P.24

17 Good, C.M. Op Cit. PP.48.

Bauer¹⁸, on the other hand, argues that the "Multiplicity of petty trading concerns which is a conspicuous feature of many contemporary African economies represent a highly productive use of redundant resources (labour) in a situation of capital scarcity." Wood found that there is a fairly regular decrease in market size along the main road from Meru town to the farthest range reflecting higher levels of market activity in areas close to town. His other finding shows that the smallest markets are those which lie either near the terminals of regular motorable tracks or away from the road network altogether. His findings confirm that there is some relationship between markets and means of communication.

Several writers have contributed on the role of women on market trade. Since the majority of market attendants are women the author decided to assess their importance as delineated in the literature. Melville states that "the energy these women expend in carrying out the market activities express the importance of their effort both for themselves and for the economy as a whole."¹⁹ Hodder²⁰ also gives some indication of the distances traversed by women in the course of their trading activities. He estimates that in a typical case, a woman who walks nine miles to various markets will cover some, "fifty miles or more a week..... usually more with a basket or calabash of goods on her head.....". Thus in West Africa the high degree to which women participate in the distributive process also reflects the longevity of market institutions in that region.

¹⁸ Bauer, P.T., West African Trade, London Routledge Kegan Paul, 1963.

¹⁹ Melville, J.H., Markets in Africa, Bohannan and Dalton (Eds.), PP.xi.

²⁰ Hodder B.W. "The Yoruba Rural Markets" in Bohannan and Dalton (Eds.), Markets in Africa, Evanson University Press, 1962 PP. 109.

Conceptual hypotheses:

As per the objectives set and the discussion presented the author now states the conceptual hypotheses.

These hypotheses are that:

1. There is a high relationship between population size of the location and the market size.
- 2.a. The number of markets in a location is highly related to the geographic size of that location.
- b. The number of markets in a location is highly related to the population of the location.
- 3.a. The assortment of goods sold in a market place is related to the distance of that market place from the biggest town in the region.
- b. The assortment of goods sold in each market is highly related to the market size in terms of attendance.
4. The size of the market is related to the level of the incomes of the people in the surrounding areas.

CHAPTER III

THE RESEARCH DESIGN:

In the previous chapter it has been stated that Kisumu District is fairly large with various economic activities seen during the rural market day. This chapter focuses attention on data collection instruments, sampling design and methods of data analysis all of which blend into the Research Design.

In this section brief mention is made of various techniques of collecting primary data in order to justify preference to the one adopted in this survey. Important methods are interviewing through questionnaires, census counts and direct observation.

Data Collection Instruments

Interviewing through questionnaires

This involves administering a prepared questionnaire to respondents chosen in a market place. This technique was applied in this study. Its positive attributes include the high probability of eliciting response. This technique is also quite adaptable to prevailing circumstances. Sometimes the buyers and sellers are too suspicious of or too sensitive to interviews especially when these hinge on such personal characteristics as name, age, sex and number of children. However, this interviewing using questionnaires has its own bias. For instance, the tendency for respondents to answer incorrectly in order to dispose of interviewers who might be interfering with their businesses. On the other hand, the technique enables the research assistants to probe into questions that are vague to respondents, to spot and to re-interview doubtful cases as well as completing inadequate information. It is for the latter set of reasons that interviewing using administered questionnaire was considered superior to other data collection instruments. This primary source of data was a most vital supplement to secondary sources such as the County Council records,

library research and other publications.

Direct Observation.

This was employed to count the number of people entering through the market gate and the number of items displayed in the market for sale. First, the market attendants were recorded on sheet of paper by marking a tally on the paper whenever one enters the market. For larger markets which operated a whole day, it was carried out till three o'clock after which we noticed that market population was reducing for the majority of traders were packing to leave. For smaller markets which operated between two and six o'clock, the counting was done until half-past five. The second feature was the recording by the observers. Research assistants were asked to list down all the items displayed in the market place. Through this method the author was able to compile a list of goods or items displayed in all the rural markets in the sample.

Census Counts:

The 1979 census data made a useful contribution to this study. The census data was used as a basis of comparing relationship between population of a location and market attendance or with the number of markets in a location.

Pretesting Questionnaire:

Before the actual survey took off, it was important to make a few pre-survey arrangements which were vital for the success of the research. First, a visit was made to the Kisumu County Council Offices whose officials provided a list of markets in the district, their days and time of operation.

Secondly, a visit was made to various markets specifically to test the questions in different markets

within the sample group. This was aimed at assessing respondents understanding of questions, duration of interviewing the buyers and sellers, whether they would be patient in the main study or not, repercussions of some questions which appeared too searching and likely to antagonize respondents.

Experience gained in this pre-testing period revealed certain weaknesses of the questionnaire and it also revealed some fear on the part of respondents. Therefore, in the main survey research assistants were instructed to explain to the selected respondents the purposes of the research to dispel this fear. Pre-testing also dispelled one major fear namely, the possibility of the survey failing to satisfy its main objectives.

Sampling Design:

The procedure adopted in this study is probability sampling. This refers to "a formal procedure for selecting one or more samples from the population in such a manner that each individual or sampling unit has a known chance of appearing in the sample"¹. All sampling methods were critically considered but only three proved useful in the present study.

The more commonly used sampling methods include simple random, stratified random, systematic, cluster and quota. Here only area sampling combined with multi-stage sampling were used.

¹ Harvey D. Explanations in Geography, London, Edward Arnold, 1969, P.361

Area Sampling

Kisumu District is divided into five Administrative Divisions. So markets were selected from each Division. This method was used mainly to avoid selecting all markets from the Division nearer to Kisumu Town.

This technique was favoured because of various reasons. First, its administrative convenience facilitated supervision of sampling units which comprise each stratum, in the context of my research these units were markets found within each Division. This made the selection of sample markets vary from markets in fertile areas, as well as markets in less fertile areas - both have equal chances of being selected.

Combine Multi-Stage Sampling:

After the stratification of the study area into various administrative Divisions, each Division had a number of markets under it and from each Division two markets were selected using the lottery method. There are 107 markets in the District out of which ten were selected randomly using the 'lottery'² method. These markets acted as the framework on which various analyses were based.

² lottery - All the market names were printed on the papers, after which two markets were picked from each Division in a box.

TABLE 1 : LIST OF MARKET NAMES ACCORDING TO DIVISIONS:1. MASENO DIVISION

1. Kombewa *	9. Sigoti	17. Koliech
2. Kondik	10. Paw Akuche *	18. Kitmikayi
3. Reru	11. Kaluore	19. Kagimba
4. Maseno	12. Manywanda	20. Chulaimbo
5. Awach	13. Mirieri	21. Rata
6. Lela	14. Wang'arot	
7. Ngere	15. Bodi	
8. Urudi	16. Kaonje.	

II. WINAM DIVISION

1. Rabuor	10. Nyang'ande	18. Korowe
2. Migingo	11. Mamboleo *	19. Daraja Mbili
3. Kiboswa *	12. Dago	20. Sinyolo
4. Nyamware	13. Orinde	21. Kaloka
5. Apoko	14. Nyakongo	22. Gari
6. Keyo	15. Ober Jowi	23. Kanasia
7. Kapsi	16. Bop	24. Kanyamlori
8. Nyahera	17. Kamarara	25. Wathorego
9. Ong'eche		

III. MUHORONI DIVISION

1. Muhoroni	7. Masogo *	12. Nyaguda
2. Famu	8. Chemelil	13. Bwanda
3. Koru	9. Nyarindi	14. Olando
4. Songhor Daraja Mbili*	10. Ramula	
5. Kibigori	11. Kango	
6. God Abuor		

IV. NYANDO DIVISION

1. Ahero *	8. Awach	14. Alakanyadhi
2. Awasi	9. Lunga	15. Kasese
3. Onjiko	10. Apoko	16. Holo Orucho
4. Miwani	11. Keyo	17. Yawo
5. Kibos	12. Ogenya	18. Nyangeta
6. Rabuor	13. Kango ✓	19. Ranjira
7. Okana		20. Kabega.

V. NYAKACH DIVISION

1. Sondu/Atela *	10. Katito	18. Pap Onditi *
2. Kusa	11. Okanwach	19. Nyamarimba
3. Nyakwere	12. Oboch	20. Bodi (Nyakach)
4. Wigot	13. Ramula "	21. Ondonga
5. Onyuongo	14. Kokelo	22. Gapsarok
6. Nyamroka	15. Reru	23. Huma
7. Anding'o	16. Store-Pamba	24. Tura
8. Oneno	17. Naki	25. Bunde
9. Olute.		

* Markets included in the sample.

Sampling Frame:

In order to draw samples the research requires some sort of sampling frame which locates the individuals in the population.

The sample frame which was used was a list of markets authorized by Kisumu County Council. On the list there are 107 markets out of which 10 were selected randomly. This is a small sample but due to limited finance, high cost of transport and limited time, the author had no alternative but to use it.

After selection of markets, the interviewers were instructed to interview the sellers, they came across and to interview one seller per item sold. The interviewers were also instructed to interview any buyer they came across in the market.

Out of the selected ten markets, a total of 586 successful interviews were carried out and only 18 refusals by buyers.

TABLE 2 : SAMPLE SIZE INTERVIEWED.

MARKET NAME	NUMBER INTERVIEWED	PERCENT
Rabuor	100	19.5
Mamboleo	41	5.1
Kiboswa	78	8.2
Ahero	105	10
Masogo	32	5.3
Kombewa	41	9.1
Paw Akuche/Holo	46	9.5
Daraja Mbili	49	15.2
Sondu/Atela	58	5.9
Pap Onditi	36	8.6
Total	586	

Interviewers:

Interviewing was a vital stage subsequent to the sampling design. Interviewers were selected, trained and equipped for the survey work immediately before the actual survey began. In all four male interviewers were selected on the basis of knowledge of Kisumu District, ability to speak Luo, Kiswahili and English fluently, and a successful attempt to translate the English questionnaire into Luo and Kiswahili. Luo is the language of the predominant tribal group in Kisumu District. Swahili was also necessary particularly when enumerators met the Bantu group in the markets near Western Province such as Kiboswa and Mamboleo. The interviewers had to translate the questionnaire into the three languages, English, Luo and Kiswahili (Appendix A -1). Interviewers were instructed to speak in Luo unless one tells them that she/he does not understand Luo. For consistency sake, all the responses we marked in the English translation of the questionnaire. Training period lasted for two days after which markets were visited to pre-test the questionnaire.

METHODS OF DATA ANALYSIS:

This section considers data processing procedure as well as quantitative methods of analysis used in reaching objective conclusions.

Data Processing:

"Three stages are involved in data processing namely, editing, coding and tabulation"². All these stages were followed by the author manually.

² Moser, C.A. and Kalton, Survey Methods in Social Investigation, London English Language Book Society, 1971, PP.410-438.

Editing:

Research assistants returned the completed questionnaires every evening between 6.30 and 7.30 p.m. In the process quick editing of data resulted. Each night, the author made further editing of questionnaire as to their completeness, accuracy and uniformity. Doubtful cases were usually discussed further with the interviewer concerned and remedy sought.

Coding:

The concept of coding is largely " a process of translating word classification into numbers so that ~~it~~ is feasible to transfer information on the questionnaire to a card or other record for tabulation."³.

In this study since the whole data processing was done manually, coding involved transferring of information to records rather than the card. Two separate systems of coding were adopted. In the first place, questions were pre-coded by indicating all the possible response next to the corresponding question. These were numbered A to E or F. This facilitated fairly quick interviews. Later when the survey had been completed, another coding procedure was used in order to identify variables that were used in tabulating and other analysis. This stage of data processing required much keenness and for concentration so as to check consistency and proper interpretation of questions and respondents.

Tabulations:

It was necessary to execute some judgement in the number of tabulations. Naturally tables which were finally adopted were selected from an immense assemblage of simple tabulations of a total of twenty eight variables. Whereas most of the tables present

the results of the survey and are basically descriptive a few of them are highly analytical.

The first set of tabulations show frequencies and percentages of single variables. The second set is prepared from computation of correlation coefficient (r) regression analysis. Electronic calculator was used for compiling the tables.

QUANTITATIVE METHODS:

Data in this study have been analysed by statistical methods which are both descriptive and inferential. The form of inferential statistic used in this study is the correlation coefficient and regression analysis. These involved the examination of two variables and assessing the extent to which they are related. This relationship can be shown through scatter graph, regression lines and coefficient of correlation. "The knowledge of relationship enables us to predict and to be able to control certain events."⁴. If we know there is a relationship between population and number of market attendance, the County Council can either enlarge a market as a result of increase population or even increase the number of markets in a densely populated area.

The hypotheses were tested by using simple Linear regression and the correlation coefficient model. These hypotheses reinforce conclusions made in distribution of markets or their economic significance.

The operational Hypotheses:

On the basis of what has been discussed thus far, both in the previous chapter and present chapter it is possible to state the conceptual hypotheses.

⁴ Harper, W.M. Statistics (Macdonald and Evans Ltd., 8 John Street London W.C.I.) 1971. PP. 120.

Plausibility of Hypothesis

In relation to market attendance the author wanted to know why some markets have higher attendance and others have a low attendance. The variables likely to influence the market attendance are population density of a location and sub-location in which the market is situated, the average income of the people in the surrounding area and the availability of goods on that particular market. The hypothesis is expected to reveal that the amount and variety of goods received by a market and displayed strengthen the position of that market.

Hypothesis 1

There is a significant relationship between population density of the sub-location and the market size.

The null hypothesis to be tested here is:

Ho:

High and low population density sub-locations have markets of equal sizes.

Hypothesis 2 (a)

The number of markets is highly related to the size of the location.

The null hypothesis to be tested here is:

Ho:

Large and small locations have equal number of markets.

Hypothesis 2(b)

The number of markets in a location is highly related to the population of the location.

The null hypothesis to be tested here is:

High and low population areas have equal number of markets

Hypothesis 3(a)

The assortment⁵ of goods sold in market places are related to the distance in kilometres from the biggest town in the region.

The null hypothesis to be tested here is:

Markets near and far from the major town have the same assortment of goods.

Hypothesis 3(b)

The assortment of goods sold in each market is related to the market size⁶ in terms of attendance.

The null hypothesis to be tested here is:

The attendance in markets with few goods or many goods is the same.

Hypothesis 4

The market size is related to the level of the incomes of the people in the surrounding areas.

The null hypothesis to be tested here is:

High income and low income areas have markets of equal sizes.

5 Assortment - This means the different items displayed for sale in the market place. For example salt is an item as well as maize, millet, onions, drumhead, rice, sugarcane and ladies dresses. All these items combined are what the author refers to as the assortment of goods.

6 Market Size:

Market size is a term used to refer to the number of people attending the market place but not the physical size of the market.

DATA ANALYSIS : ORGANIZATION OF TRADE.

Chapter III presented the research design and statistical analysis used in the study. This chapter will discuss the distribution of markets and the author goes further to discuss the assortment of goods offered for sale and the income of the market attendants.

Distribution of Markets in Kisumu District

The contemporary distribution of markets in Kisumu District tend to correspond generally with the overall distribution of population. The highest number of markets is found in East Kisumu, Kajulu, North Nyakach, East and West Seme and West Kano locations. The population density of the above locations range from 198 to 252 people per square kilometre.

TABLE 3 MARKETS IN RELATION TO POPULATION AND SIZE OF LOCATIONS IN KISUMU DISTRICT

LOCATIONS	POPULATION DENSITY KM. SQUARE	NUMBER OF MARKETS	SQUARE KM. PER MARKET
West Seme	202	10	13.5
East Seme	219	9	16
Kisumu East	311	15	7.2
Kajulu	352	6	6
Miwani-Kibos	79	6	20
North-East Kano	192	9	24
West Kano	198	11	15
South-East Kano	142	12	21
Chemelil Location	156	8	18
Koru-Fort Tennan	93	4	23
Muhoroni	109	3	27
South Nya kach	273	7	13

In addition to the above, table C5-1 and C5-2 of the appendix illustrate the population of various sub-locations in which the markets surveyed are located. The sub-locations noted with high population totals are Kabodho East, East Kadianga and Kakola.

On the other hand, locations which are noted for low population totals are Kit Mikaye, Songhor West and Kombewa (Table C5 -1 and C5-2).

Tables 3, C5-1 and C5-2 contain the data for testing hypotheses 1 and 2. Table C5-2 shows the population of the locations in Kisumu District and the number of markets. For example, Kisumu East has a population of 33,685 persons, and in it are located fifteen markets, on the other hand Muhoroni location with a population of 10,263 has only four markets.

Table 4 below shows the sub-location size and density per square kilometre. This table was utilized to test hypothesis 1 which asserts that whether a market is located in a sparsely or a densely populated area, its attendance (size) will be the same. The statistics of coefficient of correlation (r) was used to measure the strength of linear relationship between population and market attendance. If r is close to 0, the fit is poor and one can say that the relationship is weak or non-existent, if r is close to + 1 or -1, one can say that there is a strong correlation. The formula used was derived from Richardson and it is shown below.¹ From the computation of r on table 4, it shows that there is some linear relationship between population density of a sub-location and market attendance, since r is 0.6

¹ Richardson, C.H., An introduction to Statistical Analysis, (New York, Harcourt, Brace, 1944)

Chapter 8

$$r = \frac{n \sum_{i=1}^n x_i y_i - (\sum_{i=1}^n x_i) (\sum_{i=1}^n y_i)}{\sqrt{n \sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2} \sqrt{n \sum_{i=1}^n y_i^2 - (\sum_{i=1}^n y_i)^2}}$$

$$\sqrt{n \sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2} \quad \sqrt{n \sum_{i=1}^n y_i^2 - (\sum_{i=1}^n y_i)^2}$$

TABLE 4 SUBLOCATION? MARKETS AND THEIR POPULATION TOTALS AND DENSITY

Market	Sublocation	Size of Sublocation Km. ²	Population	Density Per Km.2	Population Density in '00-X	Market Att. in '00-Y	X ²	Y ²	XY	
Kombewa	Kombewa	22	5,042	229	2.29	4.52	5.29	20.43	10.35	
Paw Akuche	Kit mikayi	18	3,727	207	2.09	4.87	4.28	23.72	10.05	
Daraja Mbili	Songhor West	21	1,928	92	. 92	3.23	0.85	10.43	2.97	
Kiboswa	Nyahera	16	6,205	344	3.44	9.57	11.83	91.58	32.92	
Mamboleo	Watherego	11	5,360	487	4.87	7.98	23.72	63.68	38.86	
Rabuor	Kochieng'	29	5,178	178	1.78	5.13	3.17	26.32	9.18	
Ahero	Kakola	33	9,066	274	2.74	10.50	7.51	110.25	28.77	
Sondu	East Kadianga	30	10,393	346	3.46	9.83	11.97	96.63	34.01	
Masogo	Kabar	24	8,709	362	3.62	5.99	13.10	35.88	21.68	
Pap Onditi	Kabodhe East	36	10,192	283	2.83	4.17	8.01	17.39	11.80	
T O T A L						28.02	65.79	89.68	496.31	200.57

To test the significance of the relationship we compute the t^2 -test statistic, and at α of 0.05, it leads us to believe that some relationship exists between population and market attendance.

2. $t = r \sqrt{\frac{n - 2}{1 - r^2}}$

Kinds of Markets in Kisumu District.

After a brief discussion on market distribution and relationship between market attendance and population density, the author now attempts to classify the markets in terms of their functions, sizes and period of operation. The market places are rural economic institutions in terms of distribution and functional role. However they differ in terms of attendance, timing (daily or periodic), and the nature of goods and services. The author attempted a classification first on the total number of visitors received by each market.

- (i) Markets with less than 450 people were regarded as small markets. These are Daraja-Mbili, Pap Onditi and Kombewa.
- (ii) Markets with attendance of over 450 up to 800 people were classified as medium size markets. These are Rabuor, Mamboleo, Faw Akuche and Masogo.
- (iii) Markets with over 800 people attending were classified as large markets. These are Sondu, Ahero and Kiboswa.

The cut off points were done arbitrarily on the volume of trading activity taking place in the market. For example, small size markets had scanty trading activity and relatively few people participating. However the medium size markets had moderate marketing activity and the markets are not utilized fully. On the other hand large markets were fully utilized and the markets were full of people while some trading activity took place outside the market because of shortage of space.

In addition to the above classification by attendance, the author attempted a functional classification. However the researcher found it impossible to classify the markets as Retail or Wholesale as markets like Sondu, Kiboswa and Ahero are famous for wholesaling, but retail trade is also quite significant in these markets. Traders from other smaller markets converge into these markets to purchase foods to be sold in other smaller markets or to be taken to Kisumu urban markets while other

smaller markets like Masogo, Daraja-Mbili, Kombewa and Faw Akuche are specifically retail markets.

The second classification which the present researcher attempted was in terms of periodicity and orientation. The author found out that the market centres in Kisumu District exhibit varying degree of central importance and attract different numbers and categories of people from within and without the District. In terms of periodicity and orientation four types of markets can be distinguished. These are linear roadside daily markets, periodic one day weekly markets, two days weekly markets and rural daily markets.

Roadside Markets

These are quite dispersed and small and most of them operate on a daily basis. Many of the roadside markets tend to locate on major routes or roads that lead to major markets, and due to the big markets pull the roadside markets also realize an increase in attendance and sales on that day that the big market on whose routes they are located meet. Some roadside markets are however, not located along big market routes but at other strategic points for trade. Favourite positions are road junctions and public vehicle stages. Characteristically, the commodities sold in these markets are disposable items that villagers buy in small quantities as may be needed. Washing soap, cooking oil, paraffin, food items (like ripe bananas, sugarcane, fruits and sweets and other commodities that can be split and sold in small quantities) are sold.

It is difficult to locate the positions of these markets precisely because of their great number and unpredictable nature. There are only a few of them that have permanent locations, most of them change positions as circumstances permit and as sellers of the commodities deem necessary.

Weekly Markets:

The writer classified some markets as weekly markets. These markets operate roughly between two O'clock and six O'clock except Ahero and Mamboleo which operate from eight a.m. to five or six O'clock in the afternoon. They are larger than roadside markets and are more permanent in the location. The weekly markets which meet at two p.m. are Kombewa, Songhor, Daraja Mbili, Masogo, Paw Akuche (Holo), Rabuor and Pap Onditi.

(Table 5).

TABLE 5 CLASSIFICATION OF MARKETS

(i) Classification according to Market Attendance:

Size	Population	Markets
A - Small markets	less than 450	Daraja Mbili, Pap Onditi, Kombewa
B - Medium Markets	over 450 up to 800	Rabuor, Mamboleo, Paw Akuche, Masogo.
C - Large Markets	Over 800	Sondu, Ahero, Kiboswa.

(ii) Classification According to Periodicity :

*A - Weekly Markets	Ahero, Mamboleo, Kombewa, Masogo, Paw Akuche, Rabuor, Pap Onditi.
B - Two-day a week Markets	Kiboswa, Sondu, Daraja Mbili

These markets have an advantage in that their time of meeting does not coincide with farmers working hours. The roadside markets, however, serve transit clientele.

The weekly markets beginning at eight O'clock in the morning like Mamboleo and Ahero attracts large attendance by both buyers and sellers. Traders from far distant markets travel to these markets to sell their produce and to re-purchase some goods to take back to their home markets. For example, some traders interviewed at Ahero came from Oyugis in South Nyanza and some came from Kisii.

The last classification comprises the Two-day a week markets.

The two-day a week markets tend to locate where the population is dense and consequently a demand for a second meeting day is high or relatively more people are engaged in some kind of trade.

Assortment of goods offered for sale:

The range of food crops found in various locational markets are shown on Appendix C-4. They are ranked according to the percentages of consumers who reported making purchases of them in the survey markets. The percentages are quite low - a pattern which emphasizes the point about self sufficiency of food in Kisumu District.

One tends to find that markets which usually offer a higher variety of goods tend to experience a higher market attendance.

TABLE 6: ASSORTMENT OF GOODS AND MARKET ATTENDANCE

Market Place	Assortment of Goods	Number of people attending
Sondu	143	983
Pap Onditi	47	417
Ahero	182	1050
Rabuor	67	513
Kiboswa	123	957
Holo	85	487
Daraja Mbili	73	323
Mamboleo	89	798
Masogo	62	599

For instance, Ahero displayed about 182 different items for sale and the average attendance was 1050 people. On the other hand Pap Onditi experienced a low market attendance as it offered a few items for sale.

While discussing the assortment of goods displayed for sale, the author found it appropriate to include the distance factor into the analysis. One expects to find that as you move further from the town, the more items one would expect to find because many potential buyers would find it difficult to travel to the major town. However, as observed from Table, 7, it shows that distance does not influence the number of items displayed since markets which are nearer the major town displayed a larger number of items.

TABLE 7 : THE ASSORTMENT OF GOODS IN A MARKET AND
DISTANCE IN KILOMETRES FROM KISUMU:

Market	Distance from Kisumu (Kilometres)	Assortment of goods or items
Sondo	52	143
Pap Onditi	49	47
Ahero	25	182
Rabuor	14	67
Kiboswa	16	123
Kombewa	53	78
Holo	47	85
Songhor Daraja Mbili	51	73
Mamboleo	13	89
Masogo	37	62

From tables 6 and 7 it can be observed that the market size in terms of attendance tend to influence the number of items displayed as sellers would prefer to bring their goods only where there is a higher probability of their goods being sold.

A correlation and regression analysis was computed on the relationship between goods sold in a market and the distance from a bigger town and the statistic r of 0.1 led the author to conclude that there might be no linear relationship between the two variables.

The computation is shown below:

Market	Distance from Kisumu		Assortment of goods		
	\bar{X}	Y	X^2	Y^2	XY
Sondu	52	143	3025	20449	7665
Pap Onditi	49	47	2401	2209	2303
Ahero	25	182	625	33124	4545
Rabuor	14	67	196	4489	938
Kiboswa	16	123	256	15129	1968
Kombewa	53	78	2809	6084	4134
Holo	47	85	2209	7225	3995
Songhor (Daraja Mbili)	51	73	2601	5329	3723
Mamboleo	13	89	169	7921	1157
Masogo	37	62	1369	3844	2294
	<u>360</u>	<u>949</u>	<u>40860</u>	<u>87398</u>	<u>32297</u>

Using the equation 3, below r is 0.1 and a significance test 4 was computed, we conclude that the assortment of goods and distance from a major town are not linearly related.

The author also attempted to compute a regression analysis and correlation coefficient on Assosrtment of goods and market size.

$$3. r = \frac{n \sum_{i=1}^n x_i y_i - (\sum_{i=1}^n x_i) (\sum_{i=1}^n y_i)}{\sqrt{n \sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2} \sqrt{n \sum_{i=1}^n y_i^2 - (\sum_{i=1}^n y_i)^2}}$$

$$\sqrt{n \sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2}$$

$$\sqrt{n \sum_{i=1}^n y_i^2 - (\sum_{i=1}^n y_i)^2}$$

$$4. t = r \sqrt{\frac{n-2}{1-r^2}}$$

Market	Assortment of goods	Market Attendance			
	X	Y	X ²	Y ²	XY
Sondo	143	983	20449	966289	14-0569
Pap Onditi	47	417	2209	173889	19599
Ahero	182	1050	33124	1102500	191100
Rabuor	67	513	4489	263169	34371
Kiboswa	123	957	15129	915849	117711
Kombewa	78	452	6084	204304	35266
Paw Akuche	85	487	7225	237169	41396
Daraja Mbili	73	323	5329	104329	23579
Mamboleo	89	798	7921	636804	71022
Masogo	62	599	3844	358801	37138
Total	949	6579	87398	4963103	711740

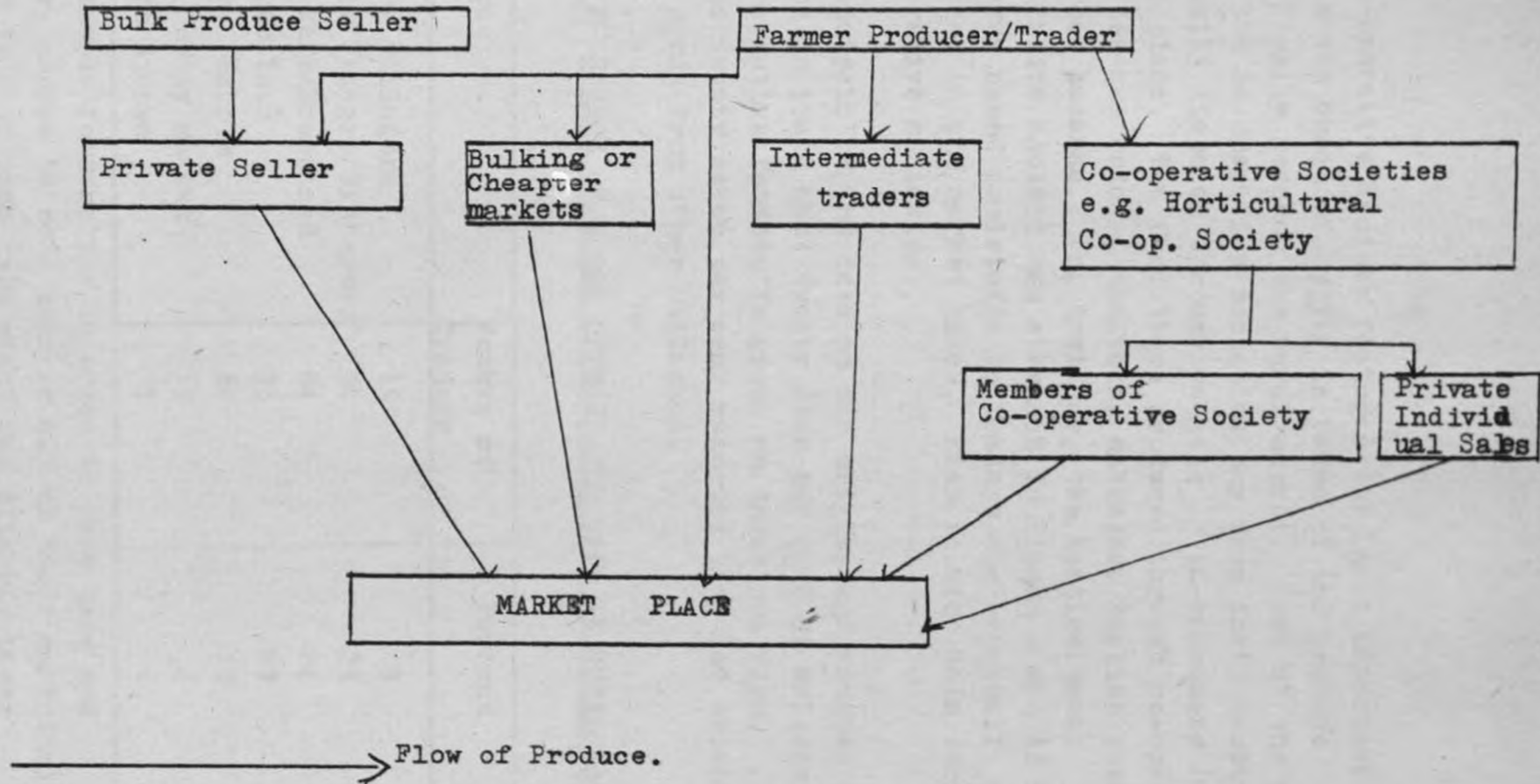
The formula used was derived from Richardson ⁵(see page 41). The significance test revealed that the relationship is strong at $\alpha = 0,05$ significance level with $r=0.7$ this might lead the author to conclude that there is a relatively strong relationship between assortment of goods and market attendance.

Source of goods:

Figure 1 depicts the various channels through which farm produce may pass while from the place of production to the market place.

⁵ Richardson, C.H., An Introduction to Statistical Analysis, New York, Harcourt, Brace 1944 Chapter 8.

FIG. 1

SUPPLY ROUTES OF PRODUCE TO KISUMU MARKETS.

The Co-operative Society features the least important link in the chain of supply in terms of the produce which finally reaches the rural market. Some of the products which the co-operative societies buy from their members is finally disposed through re-sale to consumers in a market place. The food items produced through co-operative societies are onions, tomatoes, cabbages, English potatoes and sweet bananas. For instance, the Horticultural Co-operative Society has a branch in Kisumu - and it sells the above named foodstuffs to traders who eventually re-sell them in the market place. Fish is also sold through co-operative societies.

Analysis of the data on the origins and sources of produce indicate that twenty four per cent of sellers were marketing foodstuffs grown on their own farm. Another twenty seven per cent reported they had obtained their goods from other villagers.

TABLE 8 SOURCE OF GOODS OFFERED FOR SALE IN RURAL MARKETS

Source	Number of Traders	Percent
Other villagers	16	5
Other Traders/Fishermen	94	27
Own farm/Homestead	84	24
Kisumu Town	95	27
Other Markets	62	18
The Survey market	15	4
South Nyanza	1	1

For example farmers may in order to save time and labour, choose to sell some of all of their marketable supply to middlemen (who might pay slightly lower than the market price) before they arrive at the market. Some middlemen visit many wholesale or cheaper markets to collect bulk supplies to go and re-sell

in urban centres and to rural markets where a particular produce is scarce. These traders usually take produce such as maize, beans, millet, groundnuts and peas to Kisumu town or other rural markets to re-sell to traders who would sell again to consumers. However, greater quantity of food crops which enter rural markets is produced and sold directly by the farmer himself.

In general, the kinds and quantities of foodcrops tend to vary a little from market to market. For instance, maize grain was sold in a two kilogramme container for K.Shs.8 at Paw Akuche, Ahero, Mamboleo and Daraja-Mbili.

The principle of supply and demand operates to raise or lower the real money price paid in a market place for a similar quantity of maize, beans and potatoes. But market conditions are reflected during the exchange because the quantity actually sold for a fixed price is increased and decreased proportionately. When supplies are limited the sellers may use smaller indented containers or put in smaller heaps of foodstuffs, but when supplies are abundant especially during harvesting time, sellers may use larger containers or bigger heaps. This same observation was made by Miracle⁶.

Relationship between incomes and Market Attendance:

In addition to the discussion on various items offered for sale and market attendance, the author tries to find out if relationship exists between the income of the surrounding population and the market attendance. The author hypothesizes that in areas of relatively high income the population will attend markets in larger numbers as they have extra cash to dispose of. On the other hand in regions of

⁶ Miracle P.M. "The African Trade in the Copperbelt", Markets in Africa, Eds. Bohannan and Dalton, Evanston: North Western University Press, 1962.

low per capita incomes, market attendance was expected to be low as they do not have requisite purchasing power. Table 9 gives an overview of respondents' annual income. The table indicates that 65% earn less than K.Shs.6,000 per annum, while 25% earn above K.Shs.6,000 per annum, and 10% did not state their income. This suggests that a higher percentage of rural population in Kisumu fall within the low income bracket in Kenya. This information is based on current wage level which states that the minimum pay in Kenya urban centres is KShs.473/- per month. As a result of this low income, their purchasing power is also very low which contributes to the majority of traders with goods worth K.Shs.10/- or 20/- displayed for sale and she/he might earn a profit between K.Shs.2/- and 5/-.

The author studied the income of the surrounding people who attended the market and the market attendance. Table 10 shows a general pattern found in the surveyed markets. It depicts the average income of market attendants in various markets including the number of people who attended that particular market. Sondu, Ahero and Kiboswa which recorded the highest number of attendants, the annual income of the respondents is over KShs.6,000/- per annum.

When the author computes the correlation of coefficient (r) she gets an $r = 0.5$. After testing the significance of r the author finds that r is not significant at $\alpha = 0.05$, and therefore concludes that income⁷ of the surrounding population does not

⁷ The income of the inhabitants in Kisumu rural markets was derived through trading, employment by government or self employment and by sale of cash crops grown.

TABLE 9: RESPONDENTS ANNUAL INCOME

SHS.	BUYERS		SELLERS		TOTAL	
	NO.	%	NO.	%	NO.	%
Under 1,000	9	1.5	14	2.4	23	3.9
1,000 - 2,000	18	3.1	50	8.5	68	11.6
2,001 - 3,000	27	4.7	57	8.4	76	13.0
3,001 - 4,000	23	3.9	40	8.2	71	12.1
4,001 - 5,000	29	4.9	66	11.3	95	16.2
5,001 - 6,000	20	3.4	22	3.8	42	7.2
Over 6,000	69	11.8	79	13.5	148	25.3
No income stated	36	6.1	27	4.5	63	10.7
Total	231	39.4	355	60.6	586	100.0

determine the market size in terms of attendance.

Probably this is due to the fact that some people visit the market for social reasons, that is some boys and girls meet in the market for courtship.

TABLE 10: AVERAGE ANNUAL INCOMES AND MARKET ATTENDANCE

Market	Market size (No. of attendants both buyers and sellers)	Average annual income (Shs.) of buyers and sellers
Kiboswa	957	6871
Kombewa	452	4821
Mamboleo	798	3773
Rabuor	513	5778
Paw Akuche/Holo	487	4285
Pap Onditi	417	3032
Sondo/Atela	983	7311
Songhor/Daraja Mbili	323	5284
Ahero	1050	6403
Masogo	599	5254

Traders in the market were specifically asked how they use their income and Table 11 gives a breakdown of the allocation of market income.

TABLE 11 : HOW MARKET INCOME EARNED BY TRADERS IS SPENT

Use Reported	Frequency	Percent of Traders
To purchase food	270	76
Family maintenance and home affairs	166	47
To purchase cloth/ clothing	122	34
To pay fees	54	15
To buy more goods for re-sale	36	10
To pay taxes	11	3
To save	5	-
To buy land	2	6
To buy livestock	1	4
Not reported	3	8

The information obtained generally suggest the motive for market selling. The most frequent uses recorded were to purchase food (76%) and to purchase clothing.

Buyers:

In the preceding section attention was directed to various types of traders, the range of goods which they offer and the relationship between incomes and market attendance. The researcher then examined the buyers and their behaviour. Extensive

interview of buyers was undertaken in the ten markets to find out their visiting patterns, the reason why they attend markets and the role the market played in their lives.

The author started by analysis of the sex characteristic of the buyers. The female-male proportion is not a product of vigorous selection formula but the general result approached a fair approximation of reality which is women dominance in the rural market place. As pointed out earlier according to the Luo tradition, it is a woman's duty to purchase foodstuffs, a married man does ^{not} purchase foodstuffs. The few men who came to the market mainly bought cattle or some clothing for their family. Therefore, it is common to find females dominating the market except in the cattle markets (Table 12).

TABLE 12: SEX COMPOSITION OF BUYERS:

Markets	Female		Male	
	No.	%	No.	%
Rabuor	42	18.2	3	1.3
Kiboswa	20	8.7	8	3.5
Paw Akuche/Holo	16	6.9	3	1.3.
Sondo/Atela	17	7.4	3	1.3
Ahero	30	13.0	9	3.9
Mamboleo	11	4.8	3	1.3
Pap Onditi	14	6.1	2	0.9
Songhor/Daraja Mbili	15	6.5	6	2.6
Kombewa	10	4.3	3	1.3
Masogo	12	5.2	4	1.7
	<u>187</u>	<u>81.0</u>	<u>44</u>	<u>19.0</u>
N = 231				

In addition to the sex composition of the rural market the principal occupation of buyers was also obtained. As anticipated with the exception of the peri-urban markets the occupational structure features a narrow base (Table 13). The majority of the buyers are housewives (47%), while farmers formed the next sizeable category (31%) traders (7%) and students (7%).

It was found during the survey that buyers usually travel to a market with one or two specific purchases already in mind. Although larger markets, for instance, Sondo, Ahero and Kiboswa offer a relatively wide and attractive range of goods, only a few buyers in Kisumu rural markets can afford the luxury of buying on impulse since they have relatively limited amount of cash. However, this may have to be subjected to empirical study.

TABLE 13 : OCCUPATION OF BUYERS

Occupation	Frequency	Percent
Housewife	110	47
Farmer	72	31
Trader	16	7
Student	15	7
Teacher	6	3
<u>Others:</u>		
Preacher/Pastor	2	1
Fisherman	1	0.4
Office Messenger	1	0.4
Civil Servant	1	0.4
Builder	1	0.4
Driller	1	0.4
Tailor	1	0.4

Most purchases are made quite selectively and are finalized by the consumer only after he has invested considerable time and energy in comparing the prices and quality of identical or similar goods through out the market. The buyers tend to visit the 'home' market for goods purchased frequently but visit other markets to purchase clothes, plates and cups. Buyers were asked what they usually purchase in other markets (Table 14). The research revealed that buyers are willing to travel to other markets to purchase items such as clothes, shoes, cooking utensils and lamps.

TABLE 14: ITEMS PURCHASED IN OTHER MARKETS

ITEM	NUMBER OF BUYERS PURCHASING	PERCENT
Vegetables	72	31
Clothes	61	26
Fish	50	22
Maize Flour	26	11
Shoes	15	7
Sugar	15	7
Maize grain	15	7
Meat	14	6
Bananas	12	5
Cooking Utensils	9	4
Cows	6	3
Chicken	6	3
Salt	6	3
Beans	5	2
Lamps	5	2

The author was also interested in the comparison of income and various purchases done. One would expect to find buyers with relatively high income purchase more goods than buyers with low income. Table 15 gives a breakdown of the income and the amount of goods purchased in Kenya Shillings. About seventy eight (78%) percent of the buyers purchased goods worth less than KShs.20.00. This is probably due to very low rural incomes. It may be as a result of these limited trading activities that rural markets have been neglected and are not of great interest to commercial organizations. As no one has shown interest in these markets traders, the sellers themselves requested that the government should organize some credit facilities and finance in form of loans to help them increase their stocks which would eventually lead to increased profits. Traders interviewed said that they obtain from other middlemen but would like to purchase through credit terms.

Location sizes and the number of markets:

The writer tried to find out if in case of a bigger locations, the number of markets would be higher because of its mere size.

In case of smaller locations, the number of markets were expected to be smaller. Table 16 shows the locations, their sizes and the number of markets. From the table it can be observed that locations such as North-East Kano has only 9 markets but its size is 21,600 square kilometres while Kajulu's size is 3,600 square kilometres but it has 6 markets.

TABLE 15 BUYERS : PURCHASES AND ANNUAL INCOME

Purchases in K.Shs.	ANNUAL INCOMES IN KENYA SHILLINGS								Total
	Less than 1000	1000-2000	2001-3000 Y	3001-4000	4001-5000	5001-6000	Over 6000	No Inc. ind.	
Less than 10/-	3	5	5	10	7	6	22	21	79
10-20	4	9	14	15	9	12	23	15	101
21-30	1	1	1	-	3	2	10	1	19
31-40	-	1	-	4	-	2	1	-	5
41-50	-	1	-	-	2	-	2	2	7
51-100	1	-	2	-	1	2	7	1	14
Over 100	-	-	2	1	-	-	3	-	5
T O T A L	9	17	24	27	22	24	67	40	230

TABLE 16 LOCATION SIZES AND THE NUMBER OF MARKETS

Location	Location size in Km. ² X	No. of markets Y	X ²	Y ²	XY
West Seme	13.5	10	182.25	100	135.0
East Seme	14.7	9	216.09	81	132.3
Kisumu East	10.8	15	116.64	225	162.0
Kajulu	3.7	6	13.69	36	22.0
Miwani-Kibos	11.9	6	141.61	36	71.4
North-East Kano	21.6	9	466.56	81	194.4
West Kano	16.2	11	262.44	121	178.2
S.E. Kano	25.7	12	660.49	144	308.4
Chemelil	13.4	8	179.56	64	107.2
North Nyakach	15.9	9	252.81	81	143.1
West Nyakach	10.5	6	110.25	36	63.0
Koru Fort Tennan	9.2	5	84.64	25	46.0
Muhoroni	9.4	4	88.36	16	37.6
South Nyakach	8.8	7	77.44	49	61.6
Total	185.3	117	2852.83	1095	1662.4

Testing the Hypotheses:

The results of this research in the previous section are now used to test the null hypotheses which were outlined at the end of Chapter III.

Hypothesis 1

The null hypotheses to be tested here is:

High and low population density sub-locations have markets of equal sizes.

The above hypothesis was derived from literature review in Chapter II which also proposes that population density of a sublocation affects the market attendance. The hypothesis asserts that whether a market is located in a sparsely or densely populated area its attendance (size) will be the same.

The statistic r was computed and the correlation coefficient is 0.6. This might lead us to believe that some relationship may exist between population density and market attendance.

To test the significance of the relationship we compute the t^8 test, and t is equal to 2.21413. A two tailed test was computed and since 2.214 is greater than 1.85, the critical value of t for 8 degree of freedom and $\alpha = 0.05$ (two sided test), H_0 is rejected and we conclude that population density and market attendance are linearly related.

The second statistic computed to support the above finding is the linear regression equation. The line of the best fit was $y = 2.4 + 1.5x^9$ (Fig.2).

$$8 \quad t = \sqrt{\frac{n - 2}{1 - r^2}}$$

This formula was used to compute the test statistic.

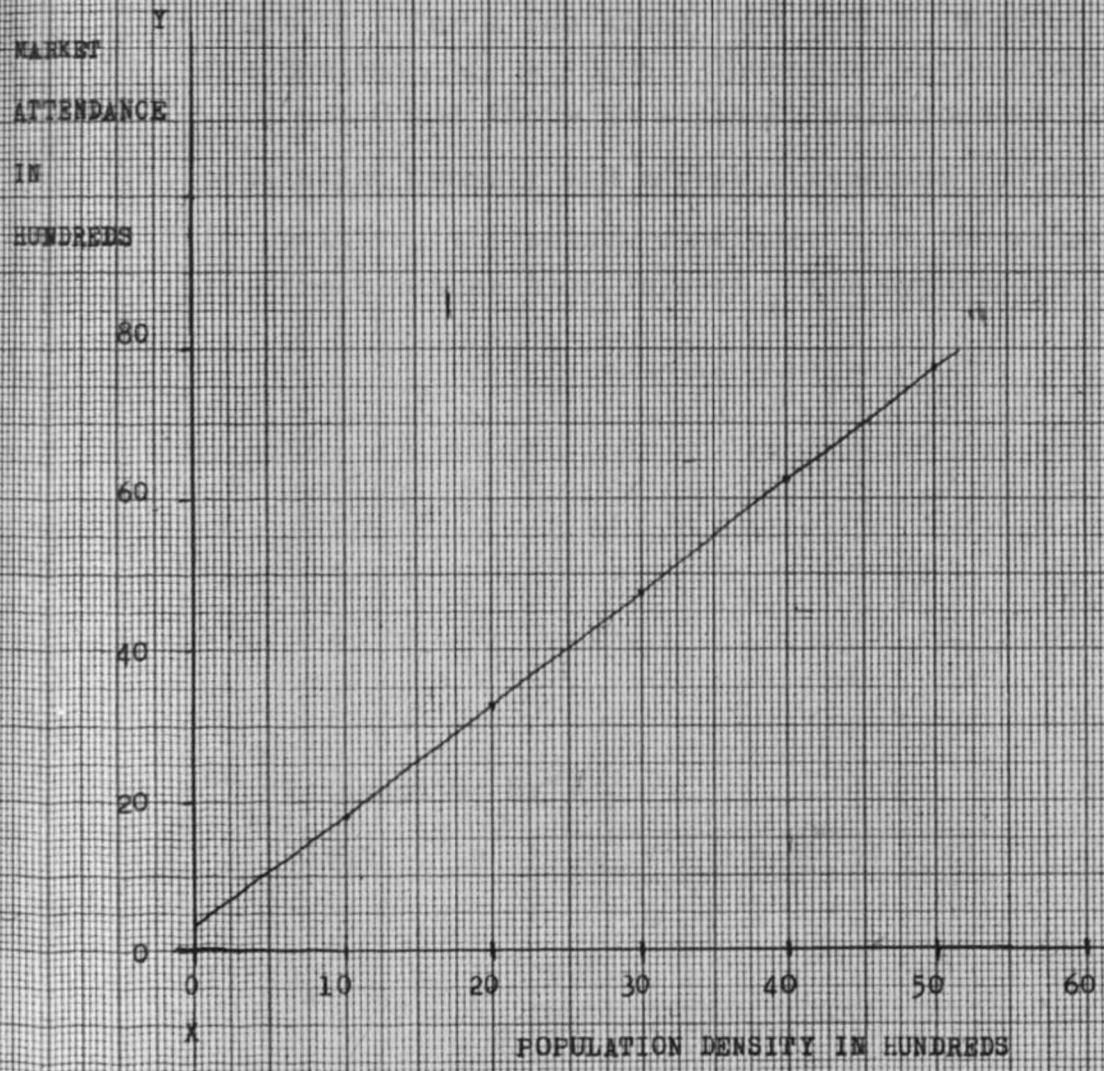
9 The formulas used to arrive at the answer are as follows:

$$b = \frac{n (\sum x_i y_i) - (\sum x_i) (\sum y_i)}{n (\sum x_i^2) - (\sum x_i)^2}$$

$$a = \frac{\sum y_i - b \sum x_i}{n}$$

FIG 2 - REGRESSION LINE OF POPULATION DENSITY ON MARKET ATTENDANCE (HYPOTHESIS 1)

REGRESSION OF Y ON X



To test the statistical significance of coefficient of b , a t test statistic was computed using the formulas shown below 10, 11, 12. (See computation Appendix F - 1).

The coefficient of b is statistically significant as revealed by the t - test and we reject the hypothesis. Since 5.6 is greater than 1.85 the upper critical value of t for a two sided test with 8 degrees of freedom and $\alpha = 0.05$. Therefore we conclude that β is not 0 and there is a linear relationship between population density and market attendance and since b is positive, the author concludes that the relationship is direct rather than inverse. The Hypothesis is null.

10 To compute Sy^2/x

$$Sy.x = \sqrt{\frac{\sum y^2 - a.\sum Y - b.\sum xy}{n - 2}}$$

$$11 S^2_b = \frac{Sy^2 \cdot x}{\frac{\sum xi^2}{n} - (\sum xi)^2}$$

$$12 t = \frac{b - \beta_0}{Sb}$$

Hypothesis 2a

The second hypothesis to be tested is that the number of markets in a location is highly related to the size of the location.

The null hypothesis to be tested here is:
Large and small locations have equal number of markets.

This hypothesis was stated with the assumption that in order to minimize distance travelled by market attendants, there will be more markets in larger locations than in smaller locations (in square kilometres).

The computation of correlation coefficient revealed a t of 1.6621. Since 1.6621 is less than 1.7823, the critical value of t for 12 degrees of freedom and $\alpha = 0.05$. H_0 is not rejected and we conclude that the size of the location does not determine the number of markets in a location. The value of $r = 0.5$ in Appendix E-2.

However the findings might have been influenced by the sample size which was small. If the sample size were larger the t test would have been significant.

Using another statistical analysis as before, a regression analysis line was found to be $y = 4.4 + 0.3x$ (Fig.3). The same formula was used to find a and b as in hypothesis 1.

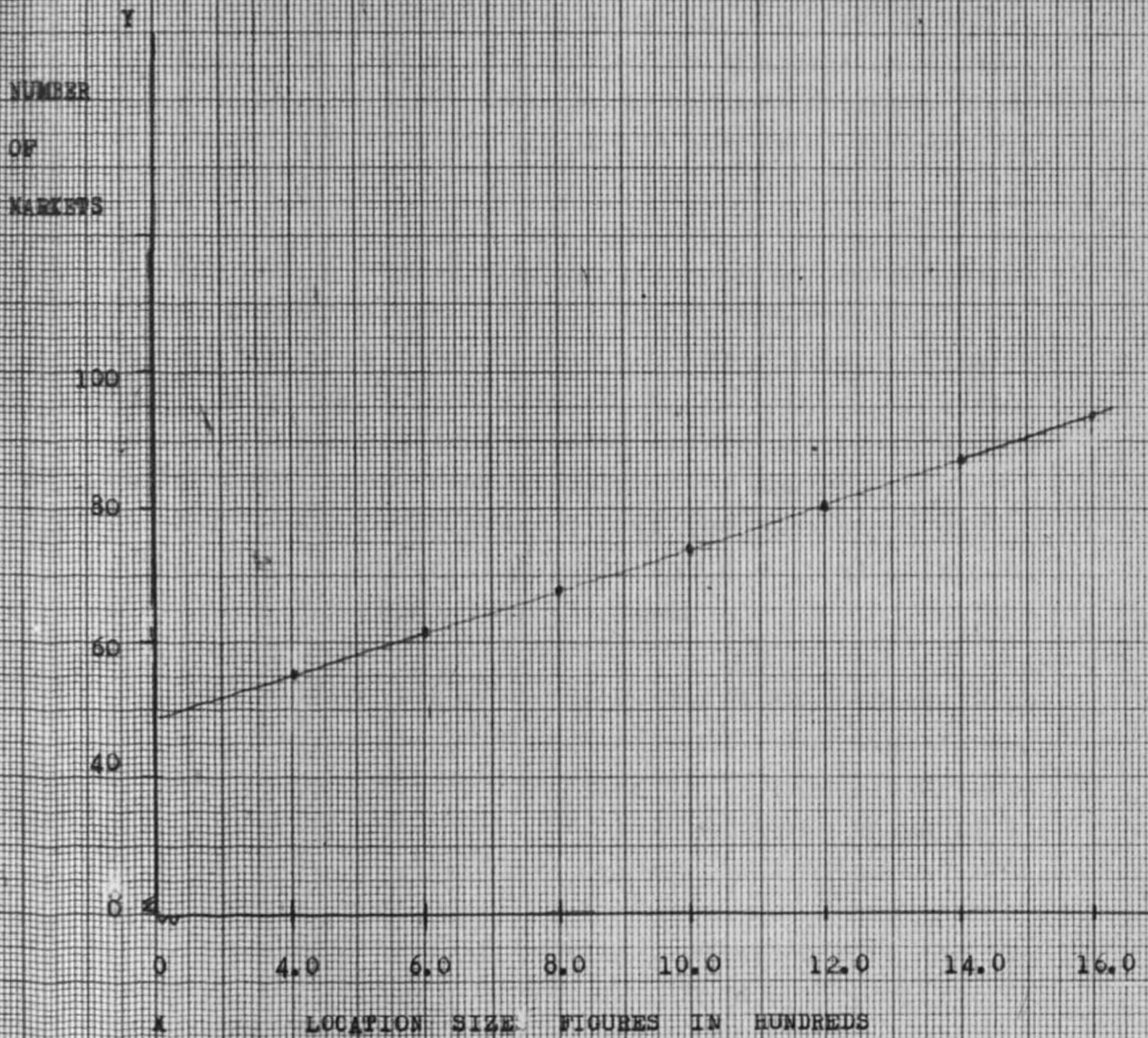
The test statistic to find the significance of b revealed a $t = 0.1$. Since 0.1 is less than 1.78 the critical value of t for a two sided test with 12 degrees of freedom and $\alpha = 0.05$. Therefore we conclude that $\beta = 0$ and there is no linear relationship between the size of the location and the number of markets in that location.

The author concludes from the above finding that the location size does not determine the number of markets. Therefore the number of markets in a location is not highly related to the size of the location.

FIG. 3 - REGRESSION LINE ON THE NUMBER OF MARKETS ON
THE SIZE OF LOCATIONS (HYPOTHESIS 2A)

REGRESSION OF Y ON X

$$Y = 4.4 + 0.3x$$



Hypothesis 2b.

The number of markets in a location is highly related to the population of the location.

The null hypothesis to be tested here is:
High and low population areas have equal number of markets.

This hypothesis was derived from the literature review that population of a location controls the number of markets but not necessarily the size of the location. The result of correlation analysis revealed an $r = 0.8$ which might lead us to believe strongly that population size does determine the number of markets in a location.

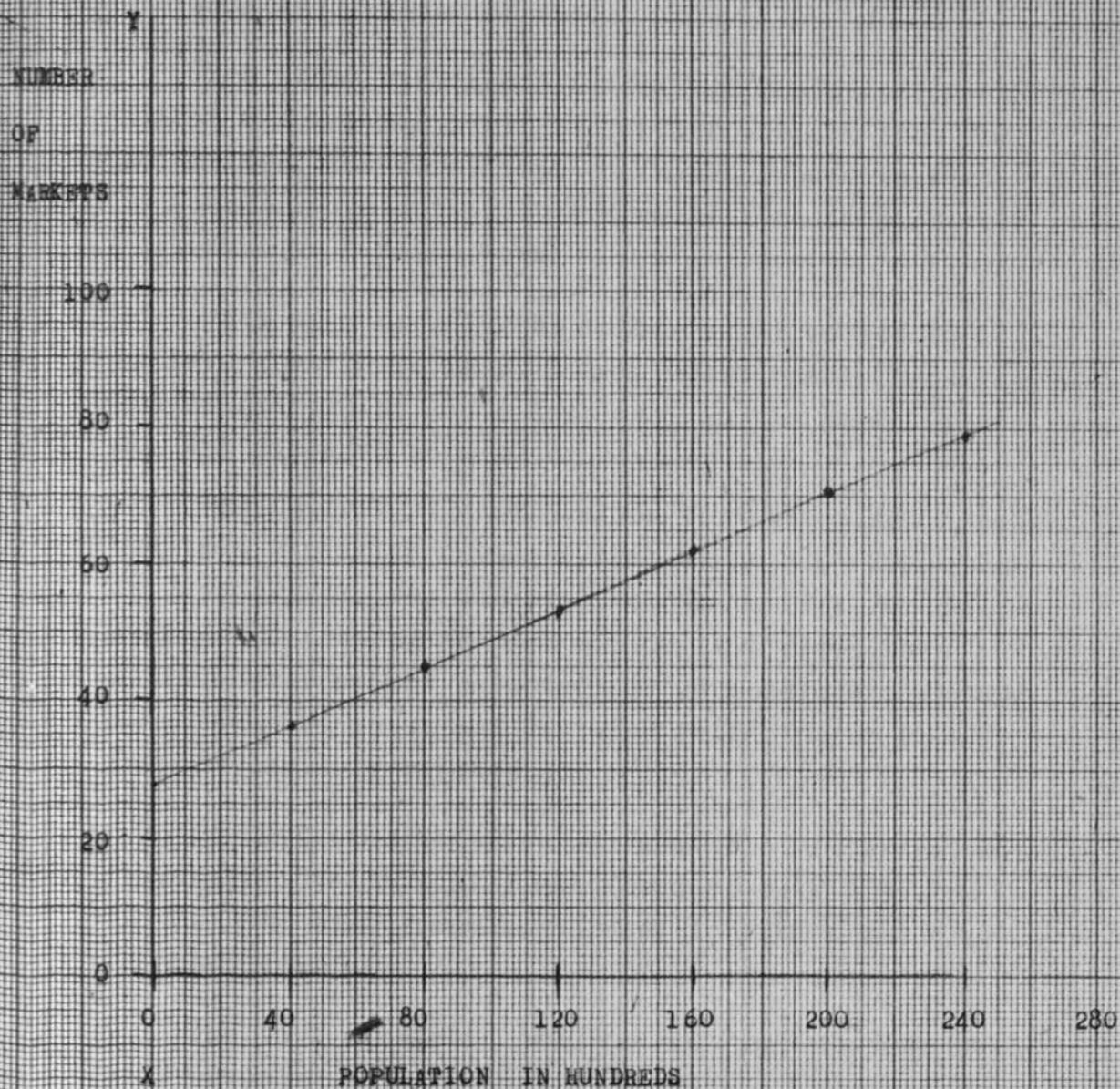
The author tested the significance of the relationship by computing the t test. The t test revealed a $t = 4.50$ which is greater than 2.2 the critical value for t for 12 degrees of freedom and $\alpha = 0.5$ (two sided test). H_0 is therefore rejected and it is concluded that population of a location and number of markets are linearly related. This shows that the population size influences the number of markets which a local authority established within a given location.

A regression analysis was computed and the equation revealed that $y = 28.57 + 0.2x$ (Fig.4). The significance of b was tested, the author rejects the hypothesis since 7.97 is greater than 2.2, the upper critical value of t for a two sided test with 12 degrees of freedom and $\alpha = 0.05$. Therefore we conclude that B is not 0 and there is a linear relationship between population size and the number of markets in a location. Since b is positive, the author concludes that the relationship is direct rather than inverse.

FIG. 4 - REGRESSION LINE OF THE NUMBER OF MARKETS IN
A LOCATION ON THE POPULATION (HYPOTHESIS 2B)

REGRESSION OF Y ON X

$$Y = 28.6 + 0.2x$$



Hypothesis 3a

The assortment of goods sold in a market place is related to the distance from the biggest town in the region.

The null hypothesis to be tested here is:

Markets near and far from the major town have the same assortment of goods.

The above hypothesis tested was postulated by the author who assumed that the farther you are from the major town, the more items one would expect to find, because many potential buyers would find it difficult to travel to a major town.

With an r of -0.1 , the author might be led to believe that there is no linear relationship between the assortment of goods displayed in the market place and the distance to a major town.

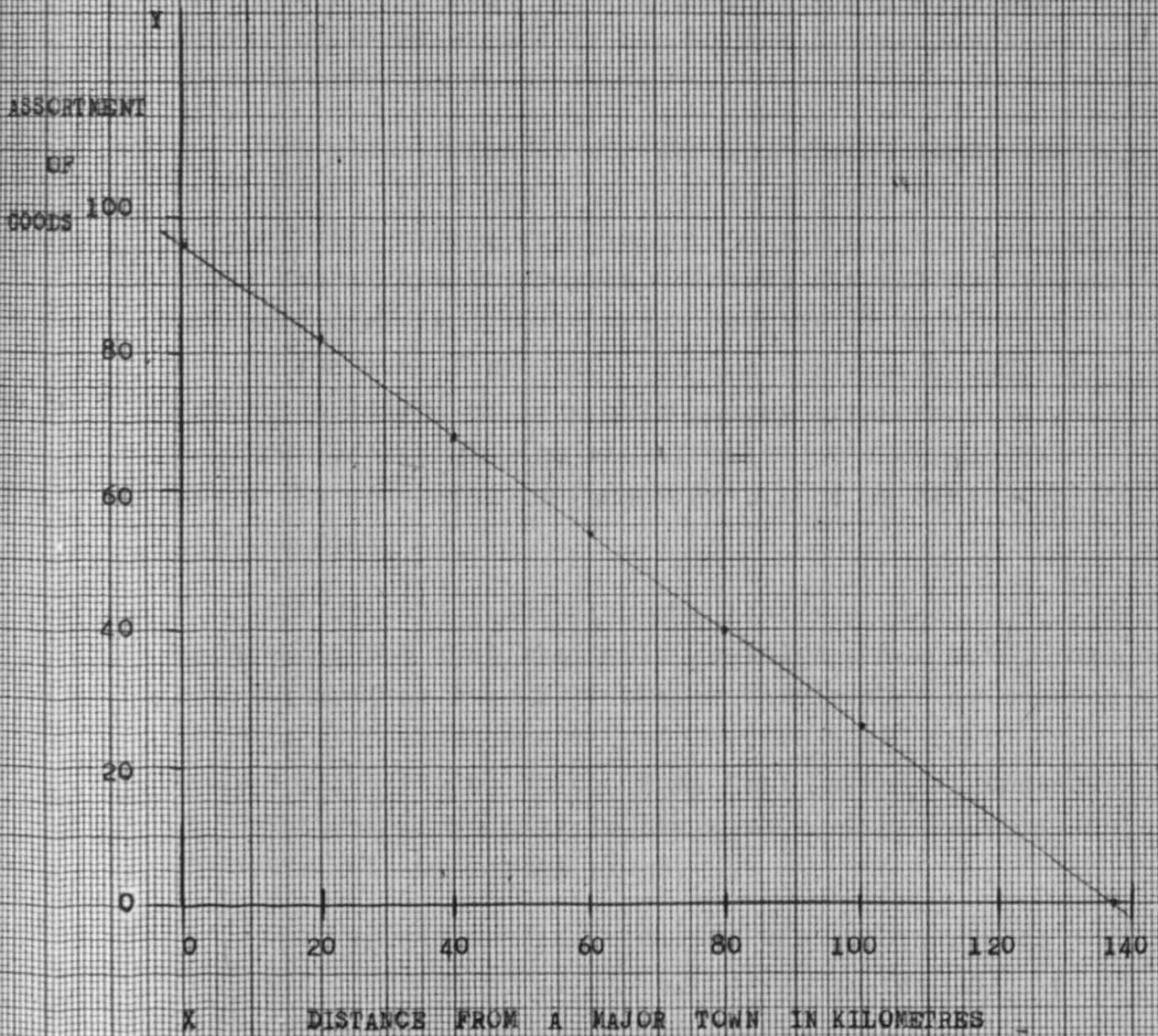
The student t distribution test was also computed. The test statistic revealed that $t = 0.40$. Since 0.4 is less than 2.306 , the critical value of t for 8 degrees of freedom and $\alpha = 0.05$ (two sided test). H_0 is therefore not rejected and we conclude that the assortment of goods and distance from a major town are not linearly related.

Using another statistical analysis as before, a regression analysis line was found to be $y = 95.2 - .007x$. The same formula was used to find a and b as in hypothesis 1.

The test statistic computed to find the significance of b revealed a $t = -16.6$. The author therefore accepts the hypothesis since 16.6 is less than 2.306 , the upper critical value of t for a two sided test with 8 degrees of freedom and $\alpha = 0.05$. Therefore we conclude that $\beta = 0$ and there is no linear relationship between the assortment of goods sold in a market and the distance from the biggest town in the region.

FIG. 5 - REGRESSION LINE OF THE ASSORTMENT OF GOODS AND DISTANCE IN KILOMETRES FROM A MAJOR TOWN (HYPOTHESIS 3A)

$$Y = 95.2 - .007x$$



Hypothesis 3b

The assortment of goods sold in each market is related to the market size in terms of attendance.

The null hypothesis to be tested here is:
Attendance in markets with few goods or many goods is the same.

The above hypothesis is a corollary to hypothesis 3a. The author felt that markets offering a larger number of items should have a higher attendance than markets offering fewer items.

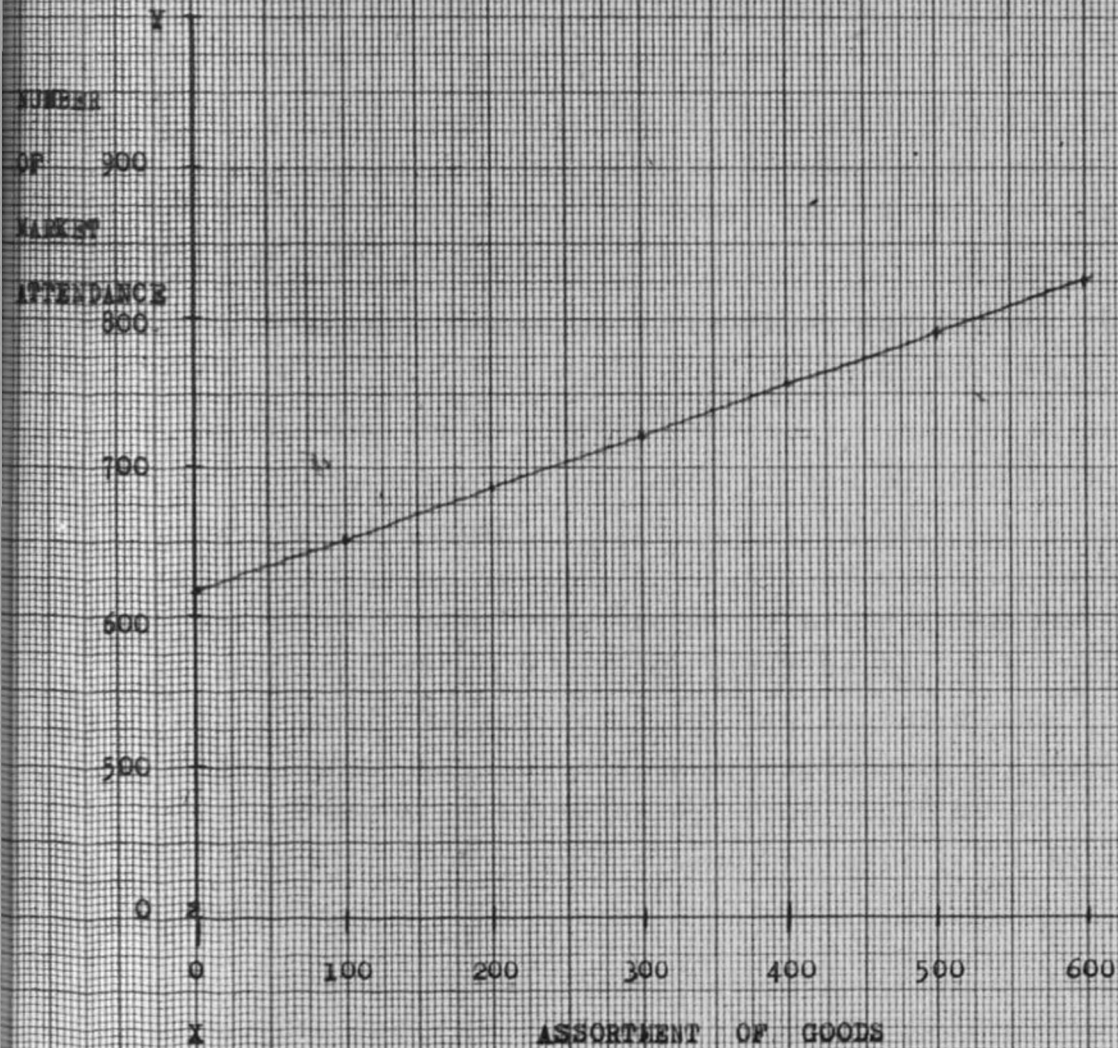
The computation of correlation coefficient revealed an $r = 0.7$. This might lead us to believe that there is a relatively strong relationship between assortment of goods and market attendance. Buyers and sellers prefer to visit markets with a larger variety of goods and select whatever they need. On the other hand sellers prefer to attend markets with larger attendance to get a chance of a higher potential sale for their goods. Hence the direction of causation cannot be determined in this case.

The student t distribution test was also computed. The test statistic revealed a $t = 2.56$. Since 2.56 is greater than 2.31 the critical value of t for 8 degrees of freedom and $\alpha = 0.05$ (two sided test) the author might be led to conclude that market attendance may be linearly related to the number of goods or items displayed at the market place.

The regression line equation was also computed from the data and it is $y = 621.2 + .33x$ (Fig.6). A test for significance of b was carried out and it revealed a $t = 0.9$. Since 0.9 is less than 2.31 the

FIG. 6 - REGRESSION LINE OF ASSORTMENT OF GOODS
ON MARKET SIZE (HYPOTHESIS 3B)

$$Y = 621 + 328x$$



critical value of t for 8 degrees of freedom and $\alpha = 0.05$ (two sided test). The author might be led to believe that there is no linear relationship between assortment of goods and market attendance. This test revealed that b is not statistically significant, therefore we accept the hypothesis as null.

Hypothesis 4

The size of the market is related to the level of the incomes of the people in the surrounding areas.

Ho:

High income and low income areas have markets of equal sizes.

In the above hypothesis the author assumed that the higher the income the greater the market attendance. Or on the other hand, the lower the income the smaller the market attendance.

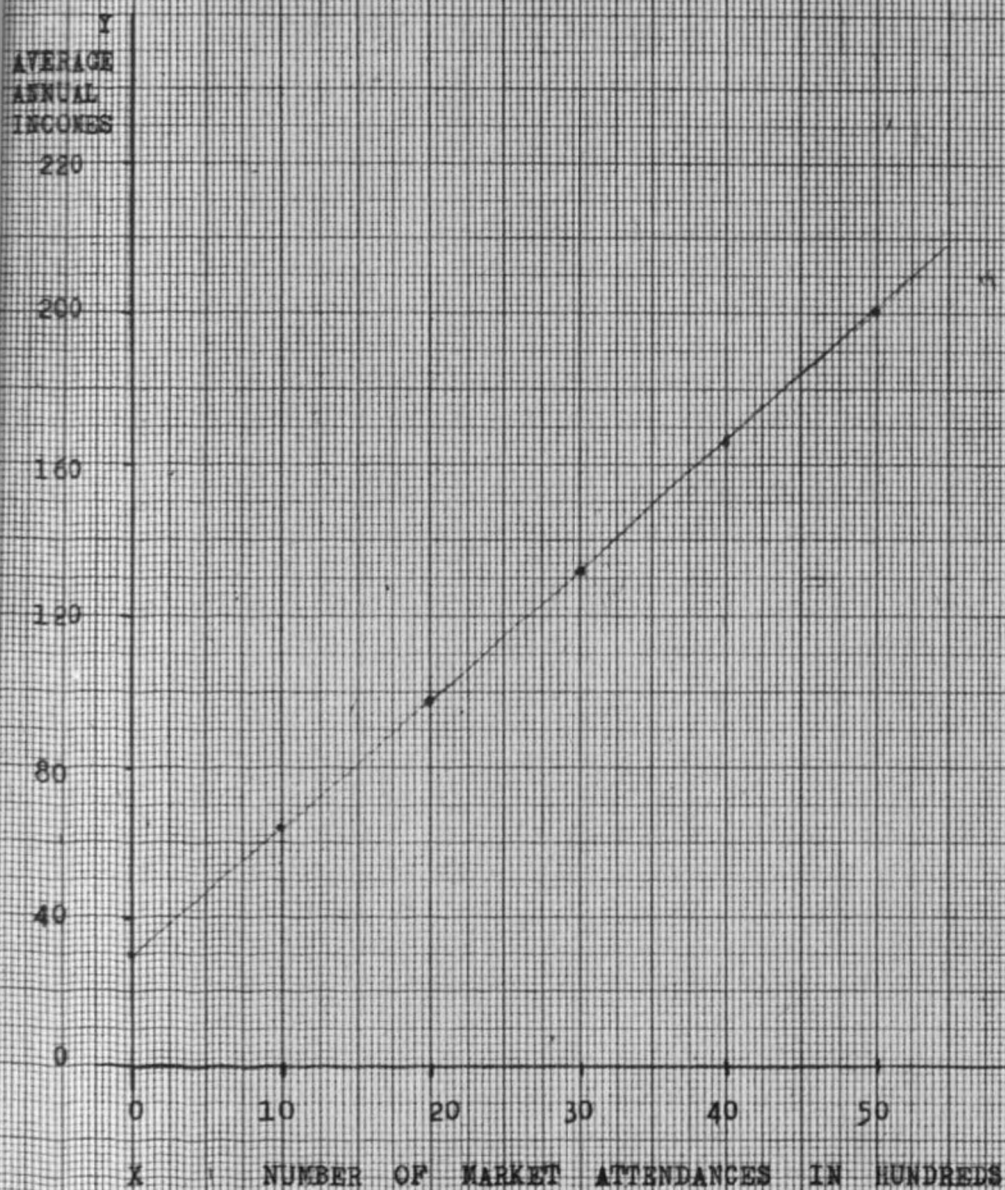
The computation of correlation coefficient revealed an $r = 0.516$. This might lead us to believe that there may be some linear relationship.

To test the significance of the relationship, we compute the student t distribution test. The test statistic revealed that $t = 1.65$. Since 1.65 is less than 1.85, the critical value of t for 8 degrees of freedom and $\alpha = 0.05$ (two sided test), it is not rejected and we may conclude that income of the surrounding population does not determine the market size in terms of attendance. This might be as a result that some people attend the market for social reasons.

The regression line equation was also computed from the data and it is $y = 31.1 + 3.3x$, (Fig.7).

FIG. 7 - REGRESSION LINE OF MARKET ATTENDANCE
ON INCOMES

$$Y = 31.1 + 3.3x$$



A significance test of b was computed which revealed a $t = 23.3$. We therefore reject H_0 , since 23.3 is greater than 1.85 the critical value of t for a two sided test with 8 degrees of freedom and $\alpha = 0.05$. Therefore we conclude that β is not 0 and there is a linear relationship between income and market attendance. Since b is positive, we conclude that the relationship is direct rather than inverse.

CHAPTER VSUMMARY, CONCLUSION AND IMPLICATIONSSUMMARY

The main purpose of the study was to describe and evaluate the functional role of market places as institutions of exchange and distribution in Kisumu District as well as their contribution to the economic and social life of the rural population in Nyanza Province.

Market places have been found to be multi-functional institutions both in the literature and in the present study.

Secondly, research design or research methodology was discussed in chapter III. Once the data was obtained, it was analyzed by means of descriptive statistics such as frequency distribution tables, regression analysis, correlation coefficient and the students t distribution test in chapter four. A descriptive analysis is also carried out on buyers, sellers and the different goods offered for sale and their source of supply.

The conclusions of this analysis are now presented next.

Conclusions

The main conclusions of the study are presented on Table 17.

TABLE 17 - CONCLUSIONS OF HYPOTHESES

HYPOTHESIS	RESULT OF CO- RRELATION ANALYSIS	CONCLUSION
1. There is significant relationship between population density of a sublocation and market size.	$r = 0.6$	The result of r and the significance test support that population density and market size are somewhat linearly related, at significance level of 0.05.
2a. The number of markets in a location is highly related to the size of the population.	$r = 0.5$	There is no linear relationship between the size of the location and the number of markets in that location at significance level of 0.05.
b. The number of markets in a location is highly related to the population of the location.	$r = 0.8$	The test of r and significance test supports the hypothesis that the population of a location is somewhat linearly related to the number of markets - significance level of 0.05.
3a. The assortment of goods sold in a market place is related to the distance from the biggest town in the region.	$r = 0.1$	There is linear relationship between the assortment of goods in a market and the distance from a major town at significance level of 0.05.
b. The assortment of goods sold in each market is related to the market size in terms of attendance.	$r = 0.7$	The computation of r and the significance test revealed that there is a relatively strong linear relationship between assortment of goods and market attendance at significance level of 0.05.
4. The size of the market is related to the incomes of the people in the surrounding areas.	$y = 0.52$	The result of r and the significance test of b shows that the incomes of the surrounding people determines the number of people attending a market.

From the conclusions stated in Table 17, we see that the variables controlling the market attendance are population density of a location or sub-location in which the market is situated and the availability of the goods on that particular market.

These research findings reveal that the amount and variety of goods received by a market and displayed strengthens the position of that market. Therefore, the size of a rural market in terms of attendance depend, first on the availability of local produce which are mainly agricultural products. Secondly the population of the region where the market is located for example, a market in a densely populated area will usually experience a higher attendance than a market in a low density area.

The income of the surrounding population has an impact on the market attendance as revealed by the correlation coefficient and the significance test for b. The higher the income of the surrounding population, the higher will be the market attendance.

The author also found out that the number of markets in a location is linearly related to the population of the location. In view of the importance of markets as economic and social institutions, one of the pre-conditions of market expansion is a relatively high density of population as observed above. Hodder¹ found out in Yoruba, that there is a critical figure of about fifty people per square mile below which markets do not occur. The author's findings in Kisumu

¹ Hodder, B.W. Some comments on origins of Traditional markets PP. 103.

District also supports this. The population density controls the number of market attendance and the population of a location has a direct influence on the number of markets in a location. For example, this study has revealed that there is a linear relationship between population of a location and the number of markets in that particular locations.

Directions for Future Research:

The author recommends that some specific studies be carried out, covering the whole of Kenya, for instance a study could be mounted on the problems of marketing perishable commodities in the Kenyan rural markets. These studies will reveal specific problems encountered when marketing a particular commodity and this information might benefit the rural market traders who sell these commodities.

A study could also be mounted on the Historical Development of markets. This study will reveal some knowledge on how markets originate, their location and its rate of expansion. The study of this market development might reveal some information and opportunities in non-agricultural employment and new sources of income.

During the present research, the writer met certain difficulties which should be noted by future researchers on this field. First of all finance was a big constraint, funds were inadequate for travelling expenses to many rural markets. As a result, only ten markets were surveyed and each market was only visited twice.

Secondly, getting reliable information from rural population was another problem. In cases of interviews held in the market, some individuals particularly men and young women were not willing to give information as they were suspicious, respondents believed that the research and the assistants were government agents

commissioned to find out the traders overcharging their commodities due to the 1980 food shortages caused by prolonged drought in 1979.

Last, but not least, although the researcher used a number of people attending a market for classification purposes and to test the hypotheses, the number of market attendants could not be determined accurately as some traders walk in the market, then walk out and eventually re-enter the market again. So although physical counts were conducted at the market gates, the author is aware of some double counting which might have occurred as the people do not enter the market in a single stream.

This thesis provides a descriptive and analytical study of rural markets of Kisumu District. A comparative research could be carried out in other rural and urban markets in Kenya.

The author thinks that these traders who sell in rural markets warrant some government support because the demand for additional goods will continue through the rural market places.

APPENDICES

- A - ENGLISH QUESTIONNAIRE AND CORRESPONDING LUO
QUESTIONNAIRE.

UNIVERSITY OF NAIROBI

FACULTY OF COMMERCE

MARKETING IN KENYA - SURVERY OF THE FUNCTIONS OF
RURAL MARKETS IN KISUMU DISTRICT.

Interviewers's Name :

Market Name :

Date of Visit:

APRIL/MAY 1980

A - 1

Good morning/Afternoon/Evening

My name is..... and I am carrying out a survey on markets and how those who attend 'feel' about them. I would, therefore, be grateful if you can take time to answer the following questions.

PART A. - ASK ALL BUYERS AND SELLERS. (Tick appropriately).

Q.1. How did you come to the market?

- A.....Bus
 B.....Car
 C.....Walked (Go to Q.3)
 D.....Other (specify)..... *Boda boda*

Q.2. How much fare did you pay?

- A.....Nothing
 B.....Less than 5/-
 C.....5/- to 10/-
 D.....Over 10/-.

Q.3. Why did you come to the market?

- A..... Sell
 B..... Buy (Go to Q.21)
 C.....To meet friends and relatives (Go to B part).
 D.....Other (specify)

ASK SELLERS ONLY.

Q.4. What are you selling today? (List the items)

- | | |
|---------|---------|
| 1. | 6. |
| 2. | 7. |
| 3. | 8. |
| 4. | 9. |

Q.5. For how much are you selling each unit of the item?

<u>Item</u>	<u>Selling Unit</u>	<u>Price</u>
1.....
2.....
3.....
4.....
5.....
6.....
7.....
8.....
9.....
10.....

Q.6. How do you determine the selling price of your product?
(You can tick more than one item).

- A..... According to the price charged by others in the market (competitors).
 B..... According to the cost of production
 C..... According to the cost of transport
 D..... Other (specify).....

Q.7. From where did you get the product you are selling?

- A..... Other villages
 B..... Own farm/homestead
 C..... From Kisumu Town
 D..... From other markets
 E..... Other (specify).....

Q.8. How much money do you usually earn in an average market day (Tick only one).

- A..... 0 - 50/-
 B..... 51/- to 100/
 C..... 101/- to 200/-
 D..... Over 200/-.

Q.9. Is there any difference in earnings between different market days?

Yes

No (go to Q.11).

Q.10. Why do you earn more on one market day than another? (You can tick more than one).

- A..... The day is more popular
 B..... Rural teachers have received their pay
 C..... Rural population has received money from working relatives.
 D..... Other (specify).....

Q.11. Why is the market important for you? (You can tick more than one).

- A.....As a source of cash(selling)
 B..... As a venue of meeting friends and relatives.
 C..... To purchase food
 D..... To pay taxes
 E..... Other (specify).....

Q.12. How do you plan to use the cash obtained from market sales? (You can tick more than one).

- A.....To purchase cloth/clothing
 B..... To pay school fees
 C..... To purchase food
 D..... To pay taxes
 E..... Other (specify).....

Q.13. How often to you visit a market?

- A..... Regularly (all market days)
 B..... Often but not always
 C..... Occasionally
 D..... Seldom.

Q.14. Which other markets do you visit apart from this one?

- A.....
 B.....
 C.....
 D.....

Q.15 How often do you visit the above named market?

Market	<u>Regularly</u> A	<u>Often</u> B	<u>Occasionally</u> C	<u>Seldom</u> D
1.....				
2.....				
3.....				
4.....				
5.....				
6.....				
7.....				
8.....				
9.....				
10.....				

Q.16. What is the average income you get from the above markets?

List down the name of the Amount of cash earned in each market market visited.

	0-100 A	101-200 B	201 - 300 C	301 - 400 D	Over 400 E
1.....					
2.....					
3.....					
4.....					
5.....					
6.....					

Q.17. Do you have other occupation apart from selling?

	Yes
	No (Go to Q.20)

Q.18. What else to you do?

- 1.....
- 2.....
- 3.....

Q.19. Are they more important than selling?

	Yes
	No
	I dont know.

- Q.20. How long have you been selling in this market?
- A.....Less than one year
 B.....1 to 3 years
 C.....4 to 5 years
 D.....6 to 8 years
 E.....Over 8 years (Go to Q.29).

PART B: - ASK BUYERS ONLY.

- Q.21. Which produce have you come to buy?
- 1..... 6.....
 2..... 7.....
 3..... 8.....
 4..... 9.....
 5..... 10.....
- Q.22. Why do you come to this market to purchase the above products?
- A.....It is nearer home than any other market.
 B.....Variety of products available
 C.....Products are relatively cheap (lower prices).
 D.....Others (specify).....
- Q.23. How often do you visit this market?
- A.....Regularly (all market days)
 B.....Often but not always
 C.....Occasionally
 D.....Seldom
- Q.24. Which other markets do you visit apart from this one?
- 1.....
 2.....
 3.....
 4.....
 5.....

Q. 25. How often do you visit the above named market?
(Name the market and tick visiting pattern).

<u>Name of market visited</u>	<u>Regularly</u>	<u>Often</u>	<u>Occasionally</u>	<u>Seldom</u>
1.....				
2.....				
3.....				
4.....				
5.....				

Q.26. Which products do you buy from the above markets?

<u>Name of market visited</u>	<u>Foodstuffs</u>	<u>Commodities bought</u> <u>Manufactured</u> <u>goods</u>	<u>Others</u> <u>specify</u>
1.....

2.....

4.....

5.....

Q.27. What is your occupation?

- A.....Farmer
- B..... Teacher
- C..... Housewife
- D..... Student
- E..... Others (specify).....

Q.28. Are you buying the products for.....

- A..... Own use
- B..... To re-sell
- C..... To give to a relative
- D..... Others (specify).....

PART C - ASK BOTH BUYERS AND SELLERS.

Q. 29. What 'things' in your market do you feel that the government should improve?

- A..... water supply
- B..... Transportation means
- C..... Reduce market fees
- D..... Build stalls
- E..... Other (specify).....

CLASSIFICATION DATA:

- 1. Name.....
- 2. Location.....
- 3. Sub-location.....
- 4. Village.....
- 5. Sex.....

	Male
	Female

6. Marital Status

	Married
	Single (Go to Q.8)
	Widowed
	Other (specify).....

7. Number in Family (Husband, wife and unmarried children)

No. of male

No. of female

8. What is the occupation of the chief income earner?

.....
.....

9. Age:.....Years.

10. What is your annual income?

K. Shs.....

11. Do you have a farm?

Yes

No (terminate interview)

12. What is the size?....., acres

13. Which type of cash crop do you grow in your farm?

Cotton

Coffee

sugarcane

sunflower

rice

others

specify.

Q.14. How many acres are under cash crops mentioned above

Cotton.....acres

Sugarcane.....acres

Rice..... acres

Sunflower..... acres

Others (specify)..... acres

..... acres.

A - 2

LUO TRANSLATION OF THE QUESTIONNAIRE.

Oyawore/osawore/oimore.

Nyinga en.....kendo atimo tiegruok
 juom chirni mantie risaf, kendo kaka jomadhiye chirni
 go nenogi. Akwayi ni ka iyie to mondo iduoknae penjo
 moko manok.

PART A

Q.1. Ne ibiro e chiro ka nade?

A	Bus
B	Mtoka matin
C	Lori
D	iwuotho gitiendi (dhie Q.3)
E	moro (wachi).....

Q.2. Ne ichulo pesa adi?

A	nono
B	matin ni Sh.5/-
C	5/- nyaka 10/-
D	mohewo 10/-.

Q.3. Ne ibiro e chiro nango?

A	loko
B	ng'iewo (dhie Q.21)
C	romo kod osiepe gi wedena(dhie Q.13).
D	mor
E	moro (wachi).....

PENJ JOLOKO KENDE:

Q.4. Ango ma iloko kawuono?

1.....	6
2.....	7.....
3.....	8.....
4.....	9.....
5.....	10.....

Q.5 Gigiko iuso pesa adi kaka gin no?

	<u>Gima iloko</u>	<u>Kaka iketo</u>	<u>Nengo</u>
1.....			
2.....			
3.....			
4.....			
5.....			
6.....			
7.....			
8.....			
9.....			
10.....			

Q.6. Ere kaka iketo nengo gik ma ilokogo?

A	kaka jochungo wadwa keto
B	kaka luwore gi nengo wero
C	kaka luwore gi nengo wuoth
D	moro (wachi).....

Q.7. Gima ilokono ne igole kanye?

A	jo gwengwa
B	e puotha/e dalana
C	kuom jhohala moko, jolupo, kata jotheth
D	Kisuma boma
E	kuom chirni moko
F	moro (wachi).....

Q.8. Pesa adi m iyudoga chieng' chiro moro amora?

A	0 - 50/-
B	51/- nyaka 100/-
C	100/- nyaka 200/-.
D	mohewo Shs.200/-.

Q.9. Bende nitie pogruok e yuto e ndalo chiro ma opogore?

- | | |
|---|------------------|
| A | Nitie |
| B | onge (dhie Q.11) |

Q.10 Ango momiyoy iyudo mangeny chieng chiro machielo moloyo moko?

- | | |
|---|--|
| A | chieng'no ji ohero ahinya |
| B | jopuonj osechamo msara |
| C | jodala oseyudo pesa kuom wedegi matiyo |
| D | moro (wachi)..... |

Q.11. Ango momiyoy igeno chironi?

- | | |
|---|------------------------------------|
| A | en kara ma ayude pesa mar konyruok |
| B | en kama aromoe kod osiepe gi wede |
| C | en kama ayude chiemo ni jooda |
| D | moro (wachi)..... |

Q.12. Ere kaka ichano mar tio kod pesa ma iyudo e ohandi?

- | | |
|---|---------------------------|
| A | adhi ng'iewo go lewni |
| B | adhi chulo go skul fees |
| C | aritogo jooda gi gik dala |
| D | angiewogo chiemo |
| E | achulogo osuru |
| F | moro (wachi)..... |

Q.13. Ibiro ga e chiro ka nade? Pile kose.

- | | |
|---|--------------------------------|
| A | pile (chieng chiro duto) |
| B | kadichiel - ajabiro to ok pile |
| C | samoro |
| D | ok ahiny biro |

Q.14. Chirni mage ma ilimo ma ok ma?

- | | |
|--------|-------|
| 1..... | |
| 2 | |
| 3. | |
| 4. | |

Q.20. Isebedo ka iloko maromo nade?

A
B
C
D

matin ni higa achiel
 higa achiel nyaka adek
 higni angwen nyaka abich
 molojo higini apar (dhie penjo 29)

B. PENJ JONGIEWO KENDE:

Q.21. Ango ma ibiro ngiewo kawuono?

- | | |
|--------|---------|
| 1..... | 6..... |
| 2..... | 7..... |
| 3..... | 8..... |
| 4..... | 9..... |
| 5..... | 10..... |

Q.22. Ango ma omiyo ibiro e chironi mondo ingiew gik ma iwachogo?

A.
B.
C.
D.

nikech ochiegni gi dala molojo chirni moko
 nitie gik mangeny ahinya ma iyiero
 gik moko nengo gi yot
 moro (wachi).....

Q. 23. Ibiro ga a chironi nade?

A.
B.
C.
D.

pile (chieng' chiro moro amora)
 kadichiel
 samoro - kapore
 ok ahiny biro.

Q.24. Chirni mage ma ilimo ma ok ma?

- | |
|--------|
| 1..... |
| 2..... |
| 3..... |
| 4..... |
| 5..... |

Q. 27. Ango ma itiyo?

- A. japur
- B. japuonj
- C. min ot
- D. nyathi skul
- E. moro (wachi).....

Q. 28. Gima inyiewono en ma:

- A. mari iwuon midhi tiyogo
- B. idok loke
- C. idhi miyo watni
- D. moro (wachi).....

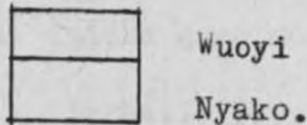
C - PENJ JOLOKO KOD JONGIEWO.

Q.29. Ango ma diher mondo sirikal closnu e chiro ka?

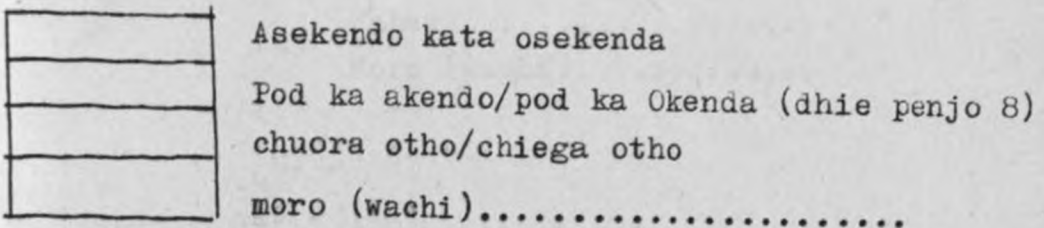
- A. pi
- B. Kaka iwuoth - yore kod mtokni
- C. duoko nengo juogo piny
- D. gerochiro gi stall ma oumore
- E. moro (wachi).....

CLASSIFICATION DATA:

- 1. Nyingi
- 2. Location.....
- 3. Sub-location.....
- 4. Gwengu.....
- 5. Nyako koso wuoyi.



6. Kend:



7. Ni ma nitie e ot - (dichwo, dhako kod nyithindo ma pod ka onywom kendo pod ka okendo).

	Namba
	Yawuoyi

	Namba
	Nyiri

8. Ngat ma otelo e ot ma kelo pesa timo ango?

9. Hiki.....

10. Pesa ma iyudo e higa achiel nyalo romo nade?

K.Shs.....

11. Bende intie kod puodho?

	nitie
	onge (we penjo koro).

12. Puodhi no romo nade?

.....acres

13. Ango ma ipidho e puothi?

	Pamba
	Niang
	Mchele
	Kahawa
	Mafua
	Moko (wachi).....

14. Eka adi ma ipidhe gigo ma iwacho na go?

Pamba.....	eka
Niang.....	"
Mchele.....	"
Kahawa.....	"
Moro (wachi).....	"

APPENDIX B DEMOGRAPHIC SOCIO-ECONOMIC DATA OF THE
RESPONDENTS

- B - 1 - Respondent's Age
- B - 2 - Respondent's Annual Income
- B - 3 - Respondent's Occupation Other than trading
 or selling.
- B - 4 - Family Size
- B - 5 - Respondent's farm size in acres
- B - 6 - Respondent's Sex
- B - 7 - Sex composition of market places in
 Kisumu District (sellers and buyers).
- B - 8 (i) - Traders means of travelling to market
- (ii) - Kisumu Traders: Length of experience in
 market trade.
- B - 9 - Names of other markets traders attend
- B - 10 - Prices and measures of goods at Ahero
 market (Kisumu District) April 1980.
-

B - 1 RESPONDENTS AGE.

AGE GROUP IN YEARS	BUYERS		SELLERS		TOTAL	
	Number	%	Number	%	Number	%
Under 20	45	7.7.	36	6.1	81	13.8
21 - 30 years	93	15.9	125	21.3	218	37.2
31 - 40 years	55	9.4	91	15.5	146	24.9
41 - 50 years	17	2.9	38	6.5	55	9.4
51.- 60 years	6	1.0	27	4.6	33	5.6
Over 60 years	4	0.7	15	2.6	19	3.3.
Non Respondents	11	1.9	23	3.9	34	5.8
TOTAL	231	39.4	355	60.6	586	100.0

B - 3 - RESPONDENT'S OCCUPATION OTHER THAN TRADING OR SELLING

	BUYERS		SELLERS		TOTAL	
	Number	%	Number	%	Number	%
Job-Working	11	1.9	2	0.3	13	2.2
Farming	75	12.8	135	23.0	210	35.8
Housewife	94	16.0	-	-	94	16.0
Student	17	2.9	-	-	17	2.9
Others	4	0.7	1	0.2	5	0.9

B - 4 - RESPONDENTS NUMBER OF UNMARRIED CHILDREN

NUMBER OF UNMARRIED CHILDREN	BUYERS		SELLERS		TOTAL	
	Number	%	Number	%	Number	%
1 - 2	60	10.2	75	12.8	135	23
3 - 4	56	9.6	97	16.6	153	26.2
5 - 6	42	7.2	62	10.6	104	17.8
Over 6	28	4.8	82	14.0	110	18.8
T O T A L	186	31.7	316	53.9	502	85.6

B - 5 - RESPONDENT'S FARM SIZE IN ACRES

SIZE IN ACRES	BUYER		SELLER		TOTAL	
	Number	%	Number	%	Number	%
2 and under	104	17.7	185	31.0	289	49.3
3 - 4	52	8.9	82	14.0	134	22.9
5 - 6	17	2.9	24	4.1	41	7.0
Over 6	11	1.9	18	3.1	29	5.0
T O T A L	184	31.4	309	52.7	493	84.2

TABLE B - 6 - RESPONDENT'S SEX

Market	Female Number	Percent	Number	Percent	Total Number	Percent
1. Rabuor	92	15.7	8	1.4	100	17.1
2. Kiboswa	44	7.5	34	5.8	78	13.3
3. Faw Akuche/Holo	33	5.6	13	2.2	46	7.8
4. Sondo	47	8.0	11	1.9	58	9.9
5. Ahero	85	14.5	20	3.4	105	17.9
6. Mamboleo	28	4.8	13	2.2	41	7.0
7. Pap Onditi	29	5.0	7	1.2	36	6.2
8. Daraja Mbili	40	6.8	9	1.5	49	8.3
9. Kombewa	29	5.0	12	2.1	41	7.1
10. Masogo	26	4.4	6	1.0	32	5.4
T O T A L	453	77.3	133	22.7	586	100.0

B - 7 - SEX COMPOSITION OF MARKET PLACES IN KISUMU DISTRICT

(SELLERS AND BUYERS)

Market	Percent b Male	Percent a Female
Rabuor	8	92
Paw Akuche	28	72
Kiboswa	44	56
Sondo	19	81
Ahero	20	80
Mamboleo	24	76
Pap Onditi	15	85
Darja Mbili	19	81
Kombewa	30	70
Masogo	20	80

- a. Figures show that the majority of market attendants in rural markets are women, as it is the responsibility of a woman to purchase food for the family.
- b. Relatively few men attend market, it is only Kiboswa which is largely a wholesalers market do we find 44% of total population being male.

B - 8 i - TRADERS MEANS OF TRAVELLING TO MARKET

Means of Transport	Full time Traders		Part Time Traders		Total All Traders	
	No.	%	No.	%	No.	%
Walked	132	62	118	81	250	70
Car	118	9	9	6	27	8
'Matatu'	27	13	8	5	35	10
Bus	25	12	8	5	33	9
Lorry	1	1	-	-	1	0.5
Bicycle	6	3	3	3	9	2.5

B - 8 ii - KISUMU TRADERS: LENGTH OF EXPERIENCE IN MARKET TRADE:

Years	Full Time Traders		Part Time Traders		Total All Sellers	
	No.	%	No.	%	No.	%
Less than 1 year	46	22	43	30	89	25
1 - 3 years	58	27	32	22	90	25
4 - 5 years	18	9	15	10	33	9
6 - 10 years	34	16	18	12	52	15
Over 10 years	53	26	38	26	91	26
T O T A L	209	100	146	100	355	100

B - 9 - NAMES OF OTHER MARKETS TRADERS ATTENDED

Markets Names	Full Time Traders		Part Time Traders		All Traders	
	No.	%	No.	%	No.	%
No other Market	144	54.6	95	65.0	209	58.9
Kibuye	14	6.7	12	8.2	26	7.3
Ahero	16	7.7	4	2.7	20	5.6
Sondo/Atela	13	6.2	6	4.1	19	5.4
Kiboswa	10	4.8	4	2.7	14	3.9
Luanda	10	4.8	4	2.7	14	3.9
Mamboleo	12	5.7	1	0.7	13	3.7
Paw Akuche/Holo	9	4.3	2	1.4	11	3.1
Kaitito	6	2.9	3	2.1	9	2.5
Mbero(Kisumu Municipal market).	5	2.4	2	1.4	7	2.0
Mbale	2	0.9	2	1.4	5	1.4
Serem	2	0.9	3	2.1	5	1.4
Akala	2	0.9	3	2.1	5	1.4
Rabuor	3	1.4	2	1.4	5	1.4
Muhoroni	2	0.9	2	1.4	4	1.4
Awasi	2	0.9	2	1.4	4	1.1
Dago	2	0.9	2	1.4	4	1.1
Manyatta Flamingo	2	0.9	2	1.4	4	1.1
Daraja Mbili	4	1.9	-	-	4	1.1
Oyugis	3	1.4	-	-	3	0.8
Migori	3	1.4	-	-	3	0.8
Koru	3	1.4	-	-	3	0.8
T o t a l	209		146		355	

B - 10 - Prices and Measures of Goods at Ahero Market
(Kisumu District) April, 1980

Commodity	Price	Measure
1 Bananas(Plantain)	8/- - 11/-	1 big bunch
2 Sweet Bananas	=/50	1 small bunch
3 Brooms	=/50	1 each
4 Wooden Spoons	1/-	1 each
5 Charcoal Stove(jiko)	12/- -15/-	1 each
6 Sweet potatoes	2/-	a bunch of five
7 Maize	8/-	2 Kg tin of Kimbo
"	200/-	90 Kg bag
"	57/-	20 Kg tin of paraffin
8 Onions	=/50	6 sticks
9 Vegetables (Kale)	=/10	20 leaves
10 Fish-Dry Tilapia	3/-	1 each
" " Nile perch	7/-	1 each
11 Maize Flour	5/-	1 Kg tin of Kimbo
12 Salt	-75X	1 small blue band tin
13 Bicabornate of Soda	-/30	1 " " " "
15 Manilla bags	3/50	1 each
16 Onions - bulb	-/50	3 balls
17 Pineapple	3/50	1 each
18 Eggs	-/70	1 each
19 Oranges	-/20	1 each
20 English potatoes	1/-	a bunch of six
21 African tobacco	-/50	6 inch piece
22 Lemons	1/-	a bunch of ten
23 Sugarcane	-/10	6 inch piece
24 Beans	1/-	500 gm blue band tin
25 Sorghum	10/-	2 Kg Kimbo tin
26 Cassava Dry	3/-	2 Kg Cowboy tin.

TABLE C : 1 - How Sellers Determine the Price of
Goods/Commodities

Reason	No.	%
1 According to price charged by others in the market (competitors).	151	43
2 According to production and transport cost	128	36
3 According to intensity of demand	37	10
4 According to purchasing price	29	8
5 According to Government control price	11	3
6 According to ones own will (agreement between buyer and seller).	5	1
7 According to weight of the commodity	5	1
8 According to prices fixed by Bata Shoe Company	3	8

TABLE C - 2 - Craft Goods Offered for Sale in Kisumu
Survey Markets (April - May 1980)

<u>Commodity:</u>	<u>Description</u>
Palm leave carpets	Made for sitting and are of different sizes.
Winnowing Tray	Fine weave of grass made in Kisumu Location mainly, used for separating chaff from grains.
Basket	Grass weave and reeds - Height about 1 ft. - 2ft. It is used for carrying grains from fields, or from and to the market.
Basket	Weave of palm leaves and it is V-shaped. Used by women for daily foodstuff shopping.
Cooking pot nets	Used for keeping foodstuffs - it is usually hanged from the roof, to avoid food being eaten by rats and dogs.
Broom	Made from palm leaves and grass.
Clay pot	Made from clay and used for cooking vegetables and meat.
" "	Made from clay and used for storing water.
" "	Made from clay and used for cooking fish.
Wooden spoon	Made from wood and used for cooking 'ugali'.
Clay pot	Made from clay and used for cooking 'posho' or 'ugali'.
Hats	Hats made from palm leaves.
Hoe handle	Wooden about 3-4ft. long
Grindstones	Made from big stone and used for grinding millet with cassava.
Tin can wick lamp	Paraffin burning candle.
Calabash	Gourd for drinking porridge and drawing water from a river.
Knife	Made out of scrap metal but has wooden handle.

<u>Commodity</u>	<u>Description</u>
Hoes	Made out of scrap iron and used for digging.
Hoes	Made out of scrap iron and used for weeding.
Karais	Made from scrap metal and used for bathing and washing clothes.
Karais	Oval shaped with two handles. Used for cooking 'ugali', 'mandazi', pancakes and deep frying of fish.
Fishing baskets	Used for catching fish in swampy areas. Made out of papyrus reeds and couch grass.
Burner charcoal	Made out of scrap iron and it is used for cooking.
Mats	Made out of papyrus reeds - for drying grains, e.g. maize, millet etc., and for sleeping.
Tables	Made out of wood.
Chairs	Folding chairs made out of weed.
Shoes	Made out of motor-car tyre.
Local brew sieve	Made out of palm leaves, used for sieving local beer (busaa).
Cooking mat	Put underneath clay pot while cooking fresh fish so that it does not stick on the pot.

TABLE C: 3 - PRINCIPAL FOODSTUFFS BOUGHT IN 10 SURVEY
MARKETS

Commodity	% of Consumers
Vegetables	46.7
Fish	29
Maize Meal	20.3
Maize grain	12
Onions	12
Sugar	9.5
Bananas	9.5
Tomatoes	8.6
Sweet potatoes	8.2
Salt	6.5
Sugarcane	5.2
Meat	4.8
Cassava	4.8
Beans	4
Milk	4
English potatoes	3
Chicken	3
Oranges	3
Minor products:-	
Tea leaves	1.7
Eggs	1.3
Drop Scones	1.7
Bicarbonate of soda	1.3
Peas	1.3

- C: 4 - Shows the goods purchased by the buyers in Kisumu rural markets
- C: 4 - Goods purchased in Kisumu markets (excluding Food crops).

N = 231.

Item	Number	Percent
Paraffin	25	10.8
Sugar	22	9.5
Salt	15	6.5
Bread	11	4.8
Bathing soap	10	4
Clothes	10	4
Omo detergent	8	3.5
Brooms	5	2
Jaggery	5	2
Tea leaves	4	1.7
Match box	3	1.3
Soda bicarbonate	3	1.3
Mats	3	1.3
Charcoal	3	1.3
Tablets	3	1.3
<u>Minor items:</u>		
Firewood	2	0.9
Basket	2	0.9
Manilla bag	2	0.9
Cattle	2	0.9

C: 5 - 1 - SUB-LOCATIONS, MARKETS AND THE POPULATION
OF THE SUB-LOCATIONS

Market	Sub-location	Population
Kombewa	Kombewa	5,042
Paw Akuche	Kit Mikaye	3,727
Daraja Mbili	Songhor West	1,928
Kiboswa	Nyahera	6,205
Mamboleo	Wathorego	5,360
Rabuor	Kochieng'	5,178
Ahero	Kakola	9,066
Masogo	Kabar	8,709
Sondu	East Kadiang'a	10,393
Pap Onditi	Kabodho East	10,192.

C: 5 - II - POPULATION OF THE LOCATIONS AND THE
NUMBER OF MARKETS

Location	Population	Number of Markets
West Seme	27,268	10
East Seme	32,113	9
Kisumu East	33,685	15
Kajulu	13,038	6
Miwani-Kibos	9441	6
W. Kano	32,095	
S.E. Kano	36,412	12
Chemelil	20,891	8
N. Nyakach	33,959	8
N.E. Kano	41,579	9
Koru-Fort Tennan	8,535	5
Muhoroni	10,263	4
S. Nyakach	24,056	7
W. Nyakach	<u>19,038</u>	<u>6</u>
Total	342,373	107

Appendix D - 1 - KISUMU TRADERS : EXPERIENCE IN YEARS
IN MARKET TRADE

Years	Full time traders		Part time Traders		All Sellers	
	Frequency	%	Frequency	%	Frequency	%
Less than 1 year	46	22	43	29	89	26
1 - 3 years	58	27	32	22	90	25
4 - 5 years	18	9	15	10	33	9
6 - 10 years	34	16	18	12	52	15
Over 10 years	53	25	38	26	91	26

The market traders were asked to recall the length of experience in market trade in terms of years. Table D - 1 shows this information.

Appendix D - 2 - Number of Other Markets Traders Attend:

Number	Full time traders		Part time traders		All traders	
	Frequency	%	Frequency	%	Frequency	%
Nil-no other market	114	55	95	65	209	59
1 - 2 markets	74	35	43	30	117	33
3 - 4 markets	18	9	8	5	26	7
5 - 6 markets	3	1	-	-	3	1
Total	209	100	146	100	355	100

The traders were asked to enumerate and name the markets which they usually attend. The professional traders do attend a number of markets in order to remain in business. On the other hand the frequency distribution for the part time trader is more in line with reality because the majority are primarily farmers and therefore tend to frequent the markets nearest to their village.

D - 3 - Buyers Frequency of Visiting the Survey Markets

Frequency	Number	Percent
Regularly	122	53
Often but not always	43	19
Occasionally	36	15
Seldom	30	13
Total	231	100

D - 4 - Buyers - Frequency of Visiting the 'Other' markets

Frequency	Number	Percent
Regularly	88	38
Often but not always	31	13
Occasionally	54	23
Seldom	35	15
Total	231	100%

APPENDIX B - 1Hypothesis 1

$$\sum x = 28.02, \sum y = 65.79, \sum x^2 = 89.68, \sum y^2 = 496.31, \sum xy = 200.57$$

$$r^2 = \frac{(\sum xy - \frac{\sum x \cdot \sum y}{n})^2}{(\sum x^2 - \frac{(\sum x)^2}{n})(\sum y^2 - \frac{(\sum y)^2}{n})}$$

$$r^2 = \frac{(200.57 - \frac{28.02 \times 65.79}{10})^2}{\dots}$$

$$r^2 = 0.3719$$

$$r = 0.6$$

Figures used in the above computation are raw scores.
To test the significance of the relationship we compute the t test.

$$t = r \sqrt{\frac{n - 2}{1 - r^2}}$$

$$t = 0.6 \sqrt{\frac{10 - 2}{1 - 0.3719}} = 2.2143$$

APPENDIX E - 2Hypothesis 2a

Figures used in the computation are raw scores.

$$r^2 = \frac{(\sum xy - \frac{\sum x \cdot \sum y}{n})^2}{(\sum x^2 - \frac{(\sum x)^2}{n})(\sum y^2 - \frac{(\sum y)^2}{n})}$$

$$r^2 = \frac{(162.4 - \frac{185.3 \times 117}{14})^2}{\dots}$$

$$\frac{(2852.83 - \frac{(185.3)^2}{14})(1095 - \frac{117^2}{14})^2}{(400.252)(117.2143)}$$

$$r^2 = \frac{12955.318}{(400.252)(117.2143)}$$

$$r^2 = 0.276143$$

$$r = 0.5.$$

To test the significance of the relationship we compute the test test.

$$t = 0.5 \sqrt{\frac{14 - 2}{1 - 0.2761}} = 1.6621$$

APPENDIX E - 3 .

Hypothesis 2b

The formula used is

$$r = \frac{N(\sum xy - (\sum x)(\sum y))}{\sqrt{[N(\sum x^2 - (\sum x)^2)] [N(\sum y^2 - (\sum y)^2)]}}$$

$$N = 14; \sum xy = 3205.1; \sum x = 342.373; \sum y = 117;$$

$$\sum x^2 = 9979.3; \sum x^2 = (342.373)^2$$

$$\sum y^2 = 1095; (\sum y)^2 = (117)^2$$

Substituting:

We get:

$$r = \frac{44871.4 - 40057.614}{\sqrt{[1397102 - 117219.27] [15330 - 13689]}}$$

$$= \frac{4813.786}{\sqrt{36907616}} = \frac{4813}{6075.1639}$$

$$= 0.792. = 0.8$$

Alternative:

$$r^2 = \frac{(\sum xy - \sum x \cdot \sum y)^2}{n \left(\sum x^2 - \frac{(\sum x)^2}{n} \right) \left(\sum y^2 - \frac{(\sum y)^2}{n} \right)}$$

$$r^2 = \frac{(3205.1 - \frac{342.373 \times 117}{14})^2}{\left[9979.3 - \frac{(342.373)^2}{14} \right] \left[1095 - \frac{(117)^2}{14} \right]}$$

$$r^2 = \frac{118,225.88}{(1603.495)(117.21429)}$$

$$r^2 = 0.629199$$

$$r = \sqrt{0.629199}$$

$$r = 0.7931078$$

$$r = 8$$

To test the significance of the relationship we compute t^* test.

$$t = r \sqrt{\frac{n-2}{1-r^2}}$$

$$t = 0.8 \sqrt{\frac{14-2}{1-0.6292}} \quad t=4.5027$$

$$t^* = r \sqrt{\frac{n-2}{1-r^2}}$$

APPENDIX E - 4Hypothesis 3a

Formula used:-

$$r^2 = \frac{(\sum xy - \sum x \cdot \sum y)^2}{n \sum x^2 - (\sum x)^2} \cdot \frac{(\sum y)^2}{n \sum y^2 - (\sum y)^2}$$

$$r = \sqrt{\frac{(\sum xy - \sum x \cdot \sum y)^2}{n \sum x^2 - (\sum x)^2} \cdot \frac{(\sum y)^2}{n \sum y^2 - (\sum y)^2}}$$

$$r^2 = (32927 - \frac{360 \times 949}{10})^2 :$$

$$\frac{(40860 - \frac{(360)^2}{10})(87398 - \frac{(949)^2}{10})}{n \sum x^2 - (\sum x)^2} \cdot \frac{(\sum y)^2}{n \sum y^2 - (\sum y)^2}$$

$$= \frac{1530169}{74272590}$$

$$r^2 = 0.02060$$

$$r = 0.144$$

APPENDIX E - 5Hypothesis 3b Computation:

Formula used:-

$$r^2 = \frac{(\sum xy - \sum x \cdot \sum y)^2}{n \sum x^2 - (\sum x)^2} \cdot \frac{(\sum y)^2}{n \sum y^2 - (\sum y)^2}$$

$$r = \sqrt{\frac{(\sum xy - \sum x \cdot \sum y)^2}{n \sum x^2 - (\sum x)^2} \cdot \frac{(\sum y)^2}{n \sum y^2 - (\sum y)^2}}$$

$$\sum X = 949; \sum Y = 6579; \sum X^2 = 4963103;$$

$$\sum XY = 711,740$$

$$r^2 = \frac{(711,740 - 949 \times 6579)^2}{10}$$

$$\left(\frac{87398 - \frac{(949)^2}{10}}{10} \cdot \frac{(496,310 - \frac{6579^2}{10})}{10} \right)^2$$

$$r^2 = \frac{7637519.9}{16898452} = 0.5419652$$

$$r = 0.451965 = 0.67$$

$$r = 0.7$$

APPENDIX E - 6

Hypothesis 4 Computation: Formula used:

$$r^2 = \frac{(\sum xy - \sum x \cdot \sum y)^2}{(\sum x^2 - (\sum \frac{x}{n})^2) (\sum y^2 - (\frac{\sum y}{n})^2)}$$

$$r = \sqrt{r^2}$$

$$\sum X = 65.79; \sum Y = 528.20; \sum X^2 = 496.31$$

$$\sum Y^2 = 25318.91; \sum XY = 3684.80 \quad r^2 = \frac{(3684 - 65.79 \times 528.2)^2}{10}$$

$$\frac{(496.31 - \frac{(65.79)^2}{10})(25318.91 - \frac{(528.2)^2}{10})}{10}$$

$$r^2 = \underline{43669.38}$$

$$(496.31 - 432.832)(2518.91 - 27899.5)$$

$$r^2 = 0.266576$$

$$r = 0.516.$$

APPENDIX FTESTING THE SIGNIFICANCE OF b ON HYPOTHESES:

The test statistic used in computing the significance of coefficient b is illustrated below.

The test statistic when σ_y^2/x is known is

$$Z = \frac{b - B_0}{\sigma_b}$$

But when σ_y^2/x is unknown, the test statistic is

$$t = \frac{b - B_0}{S_b}$$

Where S_b is the estimator of σ_b .

The associated degrees of freedom are $n - 2$. To obtain S_b we must first estimate σ_y^2/x . An unbiased estimator of this parameter is given by

$$S^2_{y/x} = \frac{\sum (Y_i - Y_c)^2}{n - 2}$$

or an unbiased estimator of σ_b^2 then is

$$S^2_b = \frac{S^2_{y/x}}{\sum (x_i - \bar{x})^2}$$

The following is a computationally convenient formula used.

$$S^2_b = \frac{S^2_{y/x}}{\frac{\sum x_i^2 - (\sum x_i)^2}{n}}$$

F - 1 Testing the significance of b on hypothesis 1:

Regression equation = $Y_c = 2.4 + 1.5x$

Population Density

X	Yc
2.29	5.8
2.07	5.5
.92	3.78
3.44	7.56
4.87	9.7
1.78	5.07
2.74	6.5
3.46	7.6
3.62	7.8
2.83	6.6
<u>28.02</u>	<u>65.9</u>

Computation:

$$n = 10, \sum X_i = 28.62; \sum y_i = 65.79$$

$$\sum x_i^2 = 89.68; \sum x_i y_i = 200.57$$

$$s_{y/x}^2 = (65.79 - 65.9)^2 = \frac{0.11}{8}$$

$$s_{y/x}^2 = 0.0015125$$

$$s_b = 0.00113$$

$$t = \frac{b - B_0}{s_b}$$

$$t = \frac{1.5 - 0}{0.00113}$$

$$t = 13.5$$

Hypothesis 2a

$$\text{Regression line} = Y_c = 4.4 + 0.3x$$

$$\sum x_i = 185.3; \sum y_i = 117; \sum x_i^2 = 2852.83; \sum y_i^2 = 1095$$

$$\sum x_i y_i = 1662.4; n = 14$$

$$s_{y/x}^2 = 4197.8$$

$$s_b = 3.23$$

$$t = \frac{b - B_0}{s_b}$$

$$t = \frac{0.3 - 0}{3.23} = 0.1$$

Since 0.1 is less than 1.78, the critical value of t for 12 degrees of freedom and $\alpha = 0.05$. H_0 is not rejected and still conclude that the size of the location does not influence the number of markets.

Hypothesis 2b

$$Y = 28.6 + 0.2x$$

$$\sum x_i = 342.373; \sum y_i = 117; \sum x_i^2 = 9979.3; \sum y_i^2 = 1095$$

$$\sum x_i y_i = 3205.1$$

$$n = 14.$$

X	Yc
27.268	34.053
32.113	35.0226
33.685	35.337
13.038	31.2076
9.441	30.4882
11.579	30.9158
32.095	35.019
36.412	35.882

X	Yc
20.891	32.778
33.957	35.3914
8.535	30.307
10.263	30.653
24.056	33.4112
19.038	32.4076

$$S_{\hat{y}/x} = \frac{\sum (Y_i - Y_c)^2}{n - 2}$$

$$S_{\hat{y}/x} = \frac{(117 - 462.87)^2}{12} = 9968.838$$

$$S_B = 2.391$$

$$t = \frac{b - B_0}{S_b} = \frac{0.2}{2.39}$$

$$t = 0.0689$$

Hypothesis 3a

$$\text{Regression line} = YC = 95.2 - .007x$$

$$\sum x_i = 360; \sum Y_i = 949 \quad \sum x_i^2 = 40860$$

$$\sum y^2 = 87398; \sum x_i y_i = 32297$$

$$n = 10$$

<u>X</u>	<u>Yc</u>
52	94.8
49	94.8
25	95.0
14	95.1
16	95.1
53	94.8
47	94.8
51	94.8
13	95.1
<u>37</u>	<u>94.9</u>
360	949.2

$$s_y^2/x = \frac{\sum (y_i - Y_c)^2}{n - 2} = \frac{(949 - 949.2)^2}{8} = \frac{0.04}{8} = 0.005$$

$$s^2_b = \frac{SY^2/x}{\sum x_i^2 - \frac{(\sum x_i)^2}{n}} = \frac{.005}{40860 - \frac{(360)^2}{10}}$$

$$s_b = 0.00042$$

$$= \frac{-0.007}{0.00042} = 16.6$$

Hypothesis 3b.

$$Y_c = 621.2 + .33x$$

$$\sum x_i = 949; \sum y_i = 65.79; \sum x_i^2 = 87398; \sum y^2 = 4963103$$

$$\sum xy = 711740; n = 10$$

<u>X</u>	<u>Yc</u>
143	668.39
47	636.71
182	681.26
67	643.31
123	661.79
78	646.94
85	649.25
73	645.29
89	650.57
<u>62</u>	<u>641.66</u>
949	6525.3

$$SY^2/x = \frac{\sum (Y_i - Y_c)^2}{8} = \frac{6579 - 6525.3}{8} = 360.5$$

$$s^2_b = \frac{SY^2/x}{\sum x_i^2 - \frac{(\sum x_i)^2}{n}} = \frac{360.5}{87398 - \frac{(949)^2}{10}} = \frac{360.5}{-2662.1} = 0.135$$

$$s_b = 0.37$$

$$t = \frac{b - B_0}{s_b}$$

$$t = \frac{.33}{.37} = 0.9$$

Hypothesis 4Regression line - $Yc = 31.1 + 3.3x$

$$\sum xi = 65.79; \sum yi = 528.20; \sum xi^2 = 496.31 \sum yi^2 = 25318.91;$$

$$\sum xiyi = 3684.80$$

$$n = 10.$$

<u>X</u>	<u>Yc</u>
9.57	62.681
4.52	46.016
7.98	57.434
5.13	48.029
4.87	47.171
9.83	44.861
3.23	63.539
10.50	41.759
<u>5.99</u>	<u>65.750</u>
65.79	528.107

$$S_{y^2/x} = \frac{\sum (yi - Yc)^2}{n - 2} = \frac{528.20 - 528.107}{8} = 0.11625$$

$$S^2_b = \frac{S_{y^2/x}}{\sum xi^2 - \frac{(\sum xi)^2}{n}} = \frac{0.11625}{496.31 - 432.8} = 0.11625$$

$$SB = .04278$$

$$t = \frac{b - B_0}{S_b}$$

$$t = \frac{3.3}{.04278} = 23.375$$

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APPENDIX G - LIST OF MARKETS IN KISUMU DISTRICT

1. Muhoroni	26. Angoro	51. Yawo
2. Maseno	27. Alakanyadhi	52. Rata
3. Kibigori	28. Awach(Seme)	53. Wang'arot
4. Ahero	29. Bop	54. Nyamware
5. Tamu	30. Oduwo	55. Orinde
6. Masogo	31. Mamboleo	56. Ramula(Nyakach)
7. Koru	32. Kapasi	57. Okan - wach
8. Ramula (Kano)	33. Miwani	58. Kasese
9. Akado	34. Chemelil	59. Holo Ngege
10. Kondik	35. Atela(Sondu)	60. Holo Onucho
11. Onyinge	36. Kombewa	61. Kaloka
12. Manywanda	37. Rabuor	62. Magwar
13. Koliech	38. Paw Akuche	63. Mariwa
14. Gari	39. Awasi	64. Mariwa
15. Keyo	40. Kibigori	65. Lung'a
16. Kibogo	41. Daraja Mbili(Kis)	66. Kusa
17. Kaluore	42. Otonglo	67. Lela
18. Awach (Kano)	43. Nyangande	68. Pap Onditi
19. Ober Jowi	44. Nyakwere	69. Reru
20. Kanasia	45. Kaonje	70. Oboch
21. Ang'ogoremo	46. Kiboswa	71. Bodi(Nyakach)
22. Olute	47. Kokelo	72. Nyamerimba
23. Nyakongo	48. Chulaimbo	73. Katito
24. Osuome	49. Gopsarok	74. Ang'oga
25. Bar Ngege	50. Mariwa	75. Huma
26. Ngere	84. Okana	92. Bodi(Seme)
27. Mirieri	85. Sinyolo	93. Keyo
28. Nyarindi	86. Nyamaroka	94. Ogenya
29. Anding'o	87. Ondoga	95. Kanyamlori
30. Nyakongo	88. Onyuongo	96. Nyangeta
31. Sango-rota	89. Kango	97. Ranjira
32. Migere	90. Onjiko	98. Olando
33. Nyarindi	91. Korowe	99. Store Pamba
100. Bwanda	106. Tura	112. Kitmikayi
101. Songhor Daraja Mbili	107. Oneno	113. Olute
102. Kamarara	108. Kabege	114. Migingo
103. Nyahera	109. God Abuoro	115. Ong'eche
104. Sigoti	110. Naki	116. Kagimba
105. Olembo	112. Naki Bunde	117. Nyaguda

+ Markets included in the survey

So Kisumu County Council office

SELECTED BIBLIOGRAPHY:

- Addo, Joyce. The Market Woman: A force in West Africa, "Daily Nation, 15/7/1980, NAIROBI.
- Allen, D.E. Anthoropological insights into customers behaviour, "European Journal of Marketing Vol.5 1971
- Atieno, O.E. A History of Luo Thrift trading Corporation" Hadith 5 - Economic and Social History of East Africa, Literature Bureau, Nairobi, Kampala Dar-es-salaam, 1975.
- Bauer, P.T. West African Trade, London Routledge and Kegan Paul, 1963.
- Bolshaw, Cyrils Traditional Exchange and Modern Markets Prentice Hall, 1967
- Berry, B.J.L. The Geography of Market Centres and Retail Distribution. Prentice Hall, 1967
- Birdsall, S.S. "The Spatial Context for research on Rural African Marketing Pattern" Canadian Journal of African Studies 3,1 Winter 1969 P.291.
- Bohannan P. and Dalton Eds., Markets in Africa, Evanston: North Western University Press, 1962.
- Bucklin, L.D. Retail gravity model and consumer choice," Economic Geography 47, FP. 489 - 498.
- Daniel, W.W. and Terrel J.C. Business Statistics, Houghton Mifflin Company Boston, 1975.
- Edyau, J.F. Rural Periodic Markets in Kaberamaido Country", Makerere Department of Geography, Unpublished - Occasional Paper No. 19, 1971 KAMPALA
- Fadipe, H.J. The Sociology of the Yoruba," Unpublished PH.D. Thesis, University of London, 1939".
- Feund, J.E. and Williams, F.J. Modern Business Statistics, London: Sir Isaac Pitman and Sons Limited, 1967

- Foster, M.C. "The Folk Economy of Rural Mexco, special reference to marketing," Journal of Marketing XIII, 1948
- Good, C.M. Rural Markets and Trade in East Africa, University of Chicago, Research Paper No. 129.
-
- "Market Development in Traditionally marketless societies, A persepective on East Africa" . Ohio Centre for International Studies, African Series No. 12, Africa Programme, 1971.
- Government of Kenya 1969 population census of Kenya Vol.IV Economic Characteristics of Local Councils, Regions and Total Country, Nairobi Government Printers, 1970.
- Heyer, Judith " The Marketing System, Agricultural Development in Kenya," An Economic Assessment, Eds. by Heyer, J. Maitha J.K. Sega, W.M. Nairobi Oxford University Press, 1978.
- Harvey D. Explanation in Geography, London: Edward Arnold, 1969.
- Hance, W.A. The Geography of Modern Africa., Columbia University Press, New York and London, 1969.
- Harper, M.W. Statistics, MacDonald and Evans Ltd., London, 1971.
- Hawkins, H.C.G. Wholesale and Retail trade in Tanganyika, New York: F.A. Praeger 1965.
- Hodder, B.W. and Ukwu, U.I. Markets in West Africa, Ibadan, Nigeria: Ibadan University Press, 1969.
-
- "Some comments on the Origins of Traditional markets in Africa South of the Sahara," Transactions and Papers, Institute of British Geographers, No. 36 1965, PP. 97-105.

- _____,
 "Distribution of markets in Yorubaland" Scottish Geographical Magazine, April 1967 pp.98-110
- "Markets in Africa," Journal of modern African Studies, No. 4 1963 pp. 441-53.
- Kluckhohn, Richard "The Kongo Economy of Southern Ethiopia," Markets in Africa, Eds. by Bohannan and Dalton. Evanston North-western University Press, 1962, pp.409-428.
- Kracmar, J.Z. Marketing Research in Developing Countries, Praeger Publishers, New York, 1971.
- Levine, Robert "Wealth and Power in Gusiland." Markets in Africa, Eds. by Bohannan and Dalton Evanston Northwestern University Press, 1962.
- Lawson, R.M. "Inflation in the consumer market in Ghana: Report of the commission of Enquiry into Trade Maltipractices in Ghana". Economic Bulletin of Ghana X, No. 1, 1966, pp. 38-51.
- Mobogunje A.L., The Yoruba Market Women, Ibadana No. 9, 1959
- Melville, J. Herkvitts, Markets in Africa, Eds. by Bohannan and Dalton, Evanston: North-western Press University Press, 1962.
- Marris, P. "The Social Barriers to African Enterpreneurships," Journal of Development Studies V, No. 1, October, 1968, pp.29-38.
- Mikesell, Marvin "The role of Tribal markets in Morrocco, Geographical Review XLVIII, October, 1958, pp.494-511
- Miracle, M.P. "The African Trade in the Copper Belt" Markets in Africa, Eds., Bohannan and Dalton Evanston : North-western University Press 1962.

- Mintz, S.W., "Peasant market places and Economic Development in Latin America," Markets and Marketing in Developing Economies, Eds. Moyer R. and Hollander, AMA, Homewood Illinois: Richard D. Irwin Inc. 1968.
- Morgan, W.T.W. East Africa, Longmans East Africa 1973
- Moser, C.A. and Kalton Survey Methods in Social Investigation, London: English Language Book Society, 1971.
- Marvil, Richard., The Spatial Organization of Society, Duxbury Press, A Division Wadsworth Publishing Co., Inc. 1970
- Moyer, R. and Hollander, S.C. Eds. Markets and Marketing in Developing Economies, Homewood Illinois: Richard D. Irwin Inc, for American Marketing Association 1968.
- Ogot, B.A. History of the Southern Luo Vol.1 Migration and Settlement 1500-1900 East African Publishing House 1966.
- Fringle, J.W., "With the railway survey of Victoria Nyanza," Geographical Journal 2, 1893.
- Richardson, C.H., An Introduction to Statistical Analysis. New York: Harcourt, Brace, 1944, Chap.8
- Skinner, G.W. "Marketing and Social Structure in Rural China," Part 1 Journal of Asian Studies XXIV No. 1, November, 1964.
- Smith, R.H.T., and Hill, P. "The Spatial and temporal Synchronization of periodic markets evidence from four emirates in Northern Nigeria," Economic Geography 48, 1972, pp.346-347
- Solomon, M. "The Structure of the market in underdeveloped Economies." Quarterly Journal of Economics Vol.42, 1948 pp.519-537.
- Taylor, D.R., "The Internal trade of Fort Hall Kenya," Canadian Journal of African Studies, 1 No.2, November 1967, pp.111-122.

- Temple, Paul., "Nakasero Market Kampala"
Uganda Journal XXVIII, No. 2
September 1969, pp.165-178
- United States, Editing and Coding: Atlantida
Unit VII, Bureau of Census,
Department of Commerce, Washington
D.C., 1966
- Underwood, F.W. "The marketing system in Peasant
Haiti," Yale University
Publications in Anthropology
No.60, 1960.
- Uzoigwe, U.N., Precolonial markets in Bunyoro-
Kitara," Hadith 5 - Economic and
Social History of East Africa,
Ed. by Bethwel Ogot, Historical
Association of Kenya, E. African
Literature Bureau, Nairobi,
Kampala, Dar-es-salaam.
- Were, I., The Origin and Growth of Iron
Industry and Trade in Samia
Kenya, Unpublished B.A. Disser-
tation, University of Nairobi,
1973.
- Wood, L.J. Rural Markets in Kenya, Nigerian
Geographical Journal Vol.XV. 1973
- Wood, L.J., Market Origin and Development in
East Africa, Occasional Paper
No.57 Department of Geography
Makerere University, 1974.
- _____ The temporal Efficiency of the
Rural Market System in Kenya,
E. African Geographical Review
No. 11, May 1973 pp.65-71
- _____ "Spatial interaction and partitions
of rural market space" Journal of
Economic and Social Geography ,
Vol.65 1974.
- _____ "The functional structure of a
Rural Market System, Geografiska
Annaler, Vol.57, Ser. B, 1976
- Yuill, R.S. Spatial Behaviour of Retail Customers
Geografiska Annaler, Vol.49, Ser.B
1967.