A DESCRIPTION OF A SURVEY TAKEN IN THE
AREA SURROUNDING KARIOBANGI MARKET

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not be interpreted as reflecting the views of the Institute for
Development Studies or of the University of Nairobi.
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ABSTRACT

This paper is a description of a survey of households taken in an area surrounding the Karibangi market in Nairobi, Kenya. The paper has been divided into several parts. The first part is a very short description of the notions about economic development which prompted the desire to design and administer the survey being discussed. The second part describes some of the procedures needed to get the survey underway, and also discusses some of the problems and delays which were encountered. The third part describes the sample frame used and the selection of the sample, as well as the final make up of the interviews and the response rates in different strata. The fourth part is a short description of the procedure used to administer the questionnaire. A copy of the questionnaire is appended. The fifth part is a description of the coding procedures along with a copy of the coding manual. The final part is a very short discussion of what has been done along with short descriptions of two extensions of this research which seem interesting to me.
This paper is a description of a survey of households taken in an area surrounding the Kariobangi market in Nairobi, Kenya. The paper has been divided into several parts. The first part is a very short description of the notions about economic development which prompted the desire to design and administer the survey being discussed. The second part describes some of the procedures needed to get the survey underway, and also discusses some of the problems and delays which were encountered. The third part describes the sample frame used and the selection of the sample, as well as the final make up of the interviews and the response rates in different strata. The fourth part is a short description of the procedure used to administer the questionnaire. A copy of the questionnaire is appended. The fifth part is a description of the coding procedures, along with a copy of the coding manual. The final part is a very short discussion of what has been done along with short descriptions of two extensions of this research which seem interesting to me.

1. In an important sense, this survey is only half finished, since all the analysis remained to be done. Nevertheless, the important stage of collecting the data has been finished and I would like to thank all the individuals and organizations who made it possible. I would like to thank the I.O.S. and the I.D.S. staff, the National Christian Council of Kenya, members of the Town Planning Section of the Nairobi City Council, as well as the I.L.O. which provided funding for the survey, and the Rockefeller Foundation which provided individual support during part of the period the survey was being done. I would also like to thank Dr. James C. Knowles of the I.L.O. whose support and advice made this survey possible, and Prof. Martin David whose aid and advice added greatly to any usefulness the survey might eventually provide. Finally, I would like to thank all the people who worked directly on this survey with me. They were an impressive group, and their competence and willingness to work makes me optimistic about Kenya’s future.
PART I: BACKGROUND INFORMATION

Over the last several years, economists interested in the process of economic development have indicated increased interest in the affect on the distribution of income of the types of development strategies advocated by most Western-oriented development economists since World War II. This is significant because until recently this group of economists for the most part seemed to consider growth in income per capita to be almost synonymous with if not synonymous with economic development and therefore showed little interest in other goals of development. This increased interest in the distribution of income is undoubtedly a result of a variety of factors. In any case, it has resulted in an interest in trying to determine why the distribution of income resulting from the above mentioned strategies is so unequal, and in turn trying to determine strategies which encourage a somewhat more equal distribution of income in the developing countries concerned. While there is far from complete knowledge about what causes the existing distribution of income, it does seem clear that part of the problem has been relatively slow growth in employment in the modern sector despite (at least in some cases) relatively rapid growth in national output. This has proved to be a particularly serious problem in large urban areas, where employment is necessary to survival, and where in most cases there is a very rapidly growing labour force.

If it is assumed that such slow growth in employment is in fact a serious problem, it is natural to look for a solution by trying to determine ways of increasing the rate of creation of new job opportunities. In fact, a variety of investigators who take this line have argued that one important way of creating such new job opportunities is by promoting very small businesses which operate largely outside of the "modern" sector and which provide a large number of goods and services to a wide range of customers using very little capital and other scarce resources. Different investigators have chosen to label this group of businesses differently, although perhaps the most widely used term has been the "informal sector". Unfortunately, there is very little information about the extent of such business activity or about the expected growth of such activity. My main concern has been in trying to determine how to collect information about these activities. In fact I have argued that a large proportion of such activities exist in order to provide goods and services to members of low income communities, and I have further argued that virtually all such businesses are run by entrepreneurs living in these low income communities. Because of this, I have also argued that a potentially interesting way of determining the number of present and future employment opportunities from these very small businesses is to look at the role of these activities in
the overall economies of the low income communities of which they are part, and then to study the expected patterns of growth of the economies of these communities.

Unfortunately, there is very little data available about specific low income communities. As a result there was a demand for a survey to collect this sort of information. The primary aim of this paper is to describe the survey which actually resulted. The model for which the survey collected data, and a description of how different types of data were to be collected is described elsewhere.

PART 2: NECESSARY PROCEDURES

The original formulation of the ideas which resulted in the demand for a survey of the type described here go back to late 1973. However, I actually began work on getting the survey underway in August of 1974. At that time I wrote a proposal for the I.L.O. which described the survey and proposed an initial budget. This proposal was submitted to the I.L.O. in late August. By the middle of September I got tentative approval for the project from Dr. Knowles, the director of the I.L.O. follow-up project in Kenya, and therefore began planning the survey in earnest. The first step was to apply for permission to do such a survey from the Office of the President of the Kenya Government. Getting the clearance turned out to be a long process and it was not until December 16 after numerous trips to the offices of officials involved that a clearance was finally granted.

At the same time, I began the process of writing the questionnaire. With the help of Prof. Martin David (visiting I.O.S. and a Professor at the University of Wisconsin in the U.S.), the questionnaire which appears as part of I.O.S. W.P. No. 195 was completed by the middle of October. W.P. No. 195 which describes the survey and presents the initial version of the questionnaire was presented at an I.O.S. seminar in early November.

While writing the questionnaire, I also made contact with Mr. Michael Njoroge, an employee at the Nairobi City Council who I knew had worked on previous socio-economic surveys, and through him I met a number of other Nairobi City Council employees who were experienced interviewers, and who as a group seemed very mature and competent. At the same time, I asked Mr. Kamau at the I.O.S. to send me any people who had done interviewing for I.O.S. In this way I contacted 13 N.C.C. employees and 3 non-N.C.C. employees who were interested in the job and seemed capable of doing the work involved. I had an initial meeting with these men (and one woman) in early November once the questionnaires had been printed for the I.O.S. seminar.
After discussing the questionnaire with the interviewers and at the I.D.S. seminar mentioned, several changes were made. The questionnaire was then duplicated on December 2, by the University duplicating service. The next necessary step was to discuss appropriate translations of the questionnaire. It was decided that the questionnaire should be translated into Kikuyu and Swahili, the most common languages used in Nairobi low income areas.

In order to do this the questionnaire was broken into several parts and each interviewer translated one part. Using the resulting translation, two third parties compiled translations of the entire interview into Swahili and Kikuyu. These translations were then duplicated, and the interviewers as a group discussed the translations, and came to final agreement on a single translation. (These discussions were ably led by Michael Njoroge who is the “foreman” of the group and as such is paid extra). This was an expensive and time consuming process. However, it did have the dual advantage of helping the interviewers learn their way through what is really a very long and very complicated questionnaire; and also of creating a single translation to be used by all of the interviewers thereby minimizing bias resulting from different interviewers asking slightly different questions.

In order to further familiarize the interviewers with the questionnaires several nights were devoted to having the interviewers administer interviews to one another. As a result, the interviewers had fairly extensive contact with the questionnaires before the beginning of the pre-test. I think this meant that the meaning of and information being sought by individual questions was clear to the interviewers. What continued to be a problem for the interviewers during the beginning of the pre-test, but which cleared up to some extent near the end, was determining the sequence to follow through the questionnaire and determining the parts of the questionnaire to be used under different circumstances.

Other details to be attended to before the actual pre-test could begin included the following:

1. It was decided that I.D. cards should be provided so that interviewers could identify themselves, thereby lessening respondent suspicion. Therefore, cards with a title page and short plea for co-operation in Swahili and English were printed. There was also a place for photographs and signatures of the interviewers. (The photographs were taken by me with a standard 35mm camera). It was decided that it would be useful to mention the National Christian Council of Kenya as a sponsoring body of the survey.
on both these I.D. cards and in a pre-prepared introductory speech, because of the good name of that organisation.

Because I had been working with Ms. Wanjiku Chiuri and Mr. Alex Gichuke on possible ways the survey results could be used by the N.C.C.K. Urban Squatters Improvement Programme, it was a straightforward matter to get permission from N.C.C.K. to use its name in this way. (By the way, I believe part of the reason for the excellent co-operation we received in Kawangware was the fact that the respondents felt that since this was not a survey being run by City Council or the Government but instead by the I.L.O. and by N.C.C.K., their interests would not be threatened by answering the questions).

2. It was also necessary to arrange transportation. This was done through the University Transport Office, which finally agreed to supply a driver and a Volkswagen Kombi (at almost commercial rates, I might add), after an exchange of letters and endorsement of me by Dr. Joe Maitha, the head of the Economics Department, at the University of Nairobi.

3. Since City Council employees are not allowed to take second jobs, even outside of regular working hours, without appropriate permission; that permission was sought and obtained from the Deputy Town Clerk, Mr. Gotonga.

4. It was necessary to purchase clip boards and flash lights for the interviewer's work in the field. The flash lights were particularly necessary since the survey is carried out in the evening and many of the households visited had very inadequate lighting (of all the villages in which we worked, only New Mathare has electricity) making completion of the interview form very difficult without flashlights.

Once these details had been taken care of, all that was holding up initial work on the pre-test was the lack of adequate research clearance. Once this clearance was received, work on the pre-test began. The first thing that had to be done was to visit the Nairobi Provincial Commissioner's Office to notify that office of the survey and to describe the work to be done. Once I did this, the Deputy P.C. (with whom I talked) stamped the research clearance clearing the way for talks with lower ranking officials, then it was necessary to visit the District Officer, Chief and Sub-chief for Western Nairobi, Dagoretti and Kawangware to explain to each in turn the meaning of the research. (These visits paid off handsomely, for as described below, the presence of the sub-chief at the beginning of the interviewing seemed to add significantly to people's willingness to cooperate).
Upon obtaining clearance from these people to pre-test the survey in Dagoretti, it was necessary to pick buildings to survey in Kawangware Village, the specific area chosen for the pre-test. This was done as follows: First, using an aerial photograph of the village supplied by Ms. Lynn Muench of N.C.C., I divided the village into five identifiable sections. I then chose two of these sections at random, and made rough maps of the areas chosen. Once I had made the maps, I plotted a "random walk" through each section. I then followed these walks, selecting every tenth building until I had selected a total of 36 buildings, 18 in each section. These buildings I placed on the map, so that I could return to them later. Once this was done, we were ready to start interviewing.

Interviewing actually began on December 18. What we did was walk to one of the buildings already chosen, and select two rooms in which people were present. For the first two days of the survey the sub-chief accompanied us on these walks, and after introducing himself to the people in the selected rooms introduced those people to the interviewers who were to remain and explained the purpose of the survey. Upon finishing at one building, the remaining interviewers went with the sub-chief and me to the next building and repeated the process. As mentioned, the sub-chief accompanied us only for the first two nights. Thereafter it was decided that word of our study had travelled throughout the village, and that the further presence of the sub-chief was not necessary. Nevertheless, the process of choosing households which were occupied at 5:00-5:30 continued. It was expected that bias from the selection process would result, but since this was only a pre-test this was not considered serious. In fact, the result seems to have been the selection of a disproportionately large number of what might be termed "standard family households" (i.e., a household with a wife, husband and several children). It seems likely that this was because those rooms which were occupied at 5:00 often were occupied by wives waiting for their husbands to return from work. This problem was minimized during the actual survey, because all the households in any chosen building were interviewed, and because on any evening a given interviewer team had several buildings from which to select households).

In any case, in this way we managed to collect 66 interviews in 6 days. While some problems were encountered during the pre-test, it nevertheless did establish that the questionnaire could be administered in a reasonable period of time. This was especially encouraging since Kawangware very much resembles the villages around the Karimibani market which were the focus of the main survey. Despite the overall success of the pre-test, it was decided that in a few cases questions or the format
of the questionnaire itself needed to be changed. However these revisions were all very slight. Once they were made, the main work which had to be done before starting the interviewing was to actually select the final sample.

The following procedure was followed to do this. First, maps of Marura and New Mathare Estates were obtained from the Nairobi City Council. (These were provided by the Town Planning Section with the permission of Mr. Gilbert Njau, Chief Planning Officer). In the case of Marura, the map had to be slightly updated so that all buildings in the area were represented in the map. Once this was done, the buildings in both areas were divided into groups of four. Those groups were consecutively numbered. Then, using a random number table, 12 groups of buildings in New Mathare and 76 groups of buildings in Marura were chosen. Once this was done, school leavers were sent into the area with enumeration forms and instructed to draw maps of each selected group of 4 buildings in Marura and New Mathare. On these maps the layout of rooms in each building was indicated, and the number of households which occupied each room was also indicated (where a household was defined as people eating together). Unfortunately, as indicated in Part 3, the information on households per room seems likely to be inaccurate. In any case, however, this did provide an estimate of the number of rooms per building in Marura — important information since there is a very wide variety of buildings sizes and types in the area.

The rest of the areas to be surveyed posed a problem in that no maps existed of these areas. Therefore, the first task necessary in picking a sample of households in these areas was to make maps showing the location of each of the buildings in the area. This I did without too much trouble, though it turned out to be a fairly time consuming process. Once these maps were done I decided, given the small size of each of the villages, that it was appropriate to simply count rooms rather than make an estimate as in Marura. (Perhaps in retrospect this would also have been preferable in Marura). I had the above-mentioned school leavers do this. I then determined the average number of rooms per building in each village. At this stage it was a straightforward task to consecutively number the buildings in each village. Once I determined the number of interviews to be administered in each area, I divided that number by the average number of rooms per building in the area to determine the number of buildings to select. I then selected that number of buildings using a random number table.
Once these procedures were completed, only the actual interviewing remained. Unfortunately, it was just as preliminary work was being finished that fears of a possible cholera epidemic in Nairobi led to the abrupt closure of a large number of informal sector enterprises throughout the city. In particular, all the businesses in the Kariobangi market were forced to suspend activity, and a large number of shops operated from residential rooms in the Kariobangi area were closed as well. These closures meant that the administration of the survey had to be postponed because the survey was designed to determine the sorts of goods and services which are bought by residents of Kariobangi from exactly the type of shops which were closed. This postponement had to last at least until the reopening of the kiosks, and preferably until something like normal activities were resumed - presumably some time after any official re-opening. The resulting inevitable delay in administering the survey also caused further delay. In the first place, the interviewers who had by January of 1975 fairly thoroughly learned what is a fairly complicated interviewing routine inevitably forgot a good part of what they had learned during the lay-off. As a result, once it was decided to re-mount the survey in early May, retraining was necessary. (This was, it turned out, a fairly expensive and fairly time consuming process). Secondly, during the delay the research clearance which had originally been obtained for the survey expired. While having the clearance extended was reputedly a straightforward process, it did not seem to be a certainty that it would be extended; and little could be done in the two weeks spent making sure it was extended.

In fact my concern about whether the clearance would be extended happily seem to have been ill-founded, and an extension was granted on May 15. Once this was done, a similar process to the one described above in preparation for the pre-test was followed. First, the approval (and stamp) of the Deputy Provincial Commissioner was obtained. Once this was obtained, I met with the District Officer for the Kariobangi area who in turn arranged a meeting with the village leaders of the villages in which we were to interview. That meeting was held on Friday May 23. During the meeting it was decided that we would actually begin on May 25. It was on that day that it became apparent that the interviewers had forgotten more than they themselves realized, and as a result the period from May 25 to May 29 was used as a training period in the field. Since the weekend following this training period was a three day weekend with an important public holiday on Sunday (Madaraka Day), it was decided that it made sense to wait until June 4 to begin in earnest.
This long series of delays and miscalculations concerning the time necessary to do a variety of tasks - concerning the time necessary to obtain a research clearance - had two serious consequences. In the first place, the delays very significantly increased the costs of training the interviewers because of the high cost of training and retraining through a series of delays. Secondly, as a result of other commitments on my part, it was necessary that I substantially reduce the time in the field in order to finish within the time I had available for the survey. Therefore, the entire portion of the survey dealing with a city-wide sample was scrapped, and the number of interviews planned for the other aspect of the survey in Kariobangi had to be almost halved. (Both of these things resulted in substantially increased per interview costs, for the former resulted in higher fixed costs, and latter in fewer collected over which to spread these fixed costs).

In any case, the survey was actually administered from Wednesday, June 4 to Thursday, July 3 - a period of 30 days during which we were in the field every day, except Sunday June 29 and Sunday June 15. As in the Kawangware pre-test, transportation was provided by one University vehicle and my personal car. When everyone turned up there were 14 interviewers (including myself) who worked in pairs. During this period, a total of 14 interviewer-days were missed out of a possible grand total of 392 interview-days. Of these 14 days missed, 5 were a result of a case of malaria experienced by one of the interviewers. This excellent attendance rate seems to have been primarily a result of the high wages being paid combined with the threat of monetary penalties for excessive absenteeism (though as I will indicate in several places in this paper, the team of interviewers were a mature and a responsible group and I should not underestimate their willingness to do the job as required.) As in the Kawangware survey, the respondents were remarkably co-operative, a fact which was undoubtedly in part due to the willing co-operation of the leaders of the different villages, but which was also in part attributable to the experience and maturity of the interviewers.

PART 3: SELECTION OF THE SAMPLE AND ACTUAL RESULTS

The sample frame and the selection of the sample were briefly discussed in Part 2. In this part a somewhat more thorough discussion will be presented. The survey was taken in an area centering on the Kariobangi informal market on the far eastern side of Nairobi, Kenya. The oldest housing in the area dates from very shortly after independence, and was originally planned as a site and service scheme. The scheme was to provide communal sewage and water facilities, and the plot allotted was to
build his own house. In fact this is by far the largest of the villages in which we interviewed. It is locally known as Marura. Directly across the outer ring road from this scheme, are a pair of quite new (certainly since 1970) tenant purchase housing schemes known as New Mathare and Huruma Estates. These are the highest income villages in the area surveyed. North of these areas and Marura are 4 villages built by housing co-operative societies on private land. They are known as Thayu, Kariodudu, Kwasabuni and Glucola. Finally, east of Marura is Ngomongo which is a set of mud and wattle houses which house people who formerly lived in a carton city on the site of what is now Buru Buru Estate. These eight areas have in common: (a) their proximity to one another, (b) their relative isolation from the rest of the city, and (c) the fact that they are all served by the Kariobangi market.

As indicated, there was a complete map of New Mathare and a partially complete map of Marura available in the Town Planning Section of the Nairobi City Council. Since there were no maps of the other areas, the first step in creating a sample frame for the entire area was to make maps of Ngomongo, Glucola, Kwasabuni, Kariodudu, Thayu, and Huruma, as well as complete the map of Marura which was available. I ended in doing most of this work personally, in large part because map making seems to be a fairly arcane art in the opinion of virtually all of the people available to do this work. As mentioned, actual counts of rooms were made in Kariodudu, Kwasabuni and Glucola. In Thayu and Ngomongo, the remarkable homogeneity of the architecture (4 rooms per building in Thayu and 2 rooms per building in Ngomongo) made this unnecessary. New Mathare was also no problem since all the houses in the estate followed a very rigid plan which called for 4 rooms per building.

Kariobangi was slightly greater problem because there is a wide variety of building styles in that area. Therefore, as mentioned, I originally divided the entire scheme into groups of four buildings, and then chose 76 groups at random. I then had school leavers make sketches of each building in the chosen groups. These sketches indicated the number of rooms per building. I also asked for information about the number of households per building. Unfortunately, this information seems likely to be unreliable. I also had school leavers determine the number of households per building in each of the other areas mentioned. Once again, however, I am afraid this information is unreliable. In fact, in areas other than New Mathare, Huruma, and Marura, an estimate of one household per room seems to be a very good one. In the first three areas mentioned this estimate
is too low. A better estimate will eventually be made using information about number of rooms per household in the questionnaire. In any case this original work resulted in a count of the actual number of rooms in 4 areas (Karadudu, Kwasa Bun, Glucola, New Kather), and very accurate estimates of this number in the other 4 areas (Ngomongo, Karura, Thayu and Huruma). These counts of rooms and buildings along with maps of the location of the buildings was what served as a frame. This frame was used by consecutively numbering the buildings in each area and then selecting a random sample of buildings using a random number table. In this way 51 buildings were selected in Karura, 23 buildings were selected in New Kather, 5 buildings were selected in Huruma, 25 buildings were selected in Thayu, 7 buildings were selected in Karadudu, 8 buildings were selected in Kwasa Bun, and 5 buildings were selected in Glucola. In Ngomongo, we originally selected 7 buildings. Unfortunately interviewing in the area turned out to be extremely difficult since there were only a very small number of buildings to choose from and the residents of most of the buildings selected seemed to be not at home. As a result, a large number of substitution was necessary and the sample from Ngomongo is as a result probably biased.

Once the buildings were selected, the interviewing began. The final results were as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Buildings</th>
<th>Number of Households</th>
<th>Number of Missed Households</th>
<th>Number of Vacant Rooms</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marura</td>
<td>51</td>
<td>188</td>
<td>25</td>
<td>2</td>
<td>83%</td>
</tr>
<tr>
<td>New Kather</td>
<td>23</td>
<td>39</td>
<td>10</td>
<td>0</td>
<td>80%</td>
</tr>
<tr>
<td>Huruma</td>
<td>5</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Thayu</td>
<td>25</td>
<td>62</td>
<td>26</td>
<td>1</td>
<td>70%</td>
</tr>
<tr>
<td>Karadudu</td>
<td>7</td>
<td>50</td>
<td>3</td>
<td>1</td>
<td>90%</td>
</tr>
<tr>
<td>Kwasa Bun</td>
<td>5</td>
<td>23</td>
<td>5</td>
<td>2</td>
<td>87%</td>
</tr>
<tr>
<td>Glucola</td>
<td>5</td>
<td>22</td>
<td>6</td>
<td>1</td>
<td>79%</td>
</tr>
</tbody>
</table>

As can be seen, the response rate seems reasonable for a survey of this type. In addition to the above interviews, 14 interviews were collected in Ngomongo. Unfortunately, as mentioned, this was undoubtedly a biased sample and I am not certain what use I will make of these interviews.
PART 4: ADMINISTERING THE QUESTIONNAIRE

As can be seen, the questionnaire used is divided into several parts. Which parts are used for any particular household depends upon the actual composition of the household. More specifically, the interview is administered as following. Upon determining whether the household to be interviewed contains an adult capable of answering the questions in the interview, the interviewer introduces himself. Originally a common introduction was used (see Table 1). However, as the interviewing progressed individual interviewers developed what they felt was the best way of introducing themselves (though all the introductions centered on the International Labour Office as sponsor).

After introducing himself, the interviewer determined the make up of the household (questions A0 - A7) and then determined the work status of the person to whom he was talking (questions A8 - A16). Once that was completed, the interviewer determined the work status of each person listed in the small table accompanying question A2 by using a Part A2 for each such person. Having determined the composition of the household, the interviewer then asked questions A23 - A75 (PART A3) to (or for) the head of the household, (or heads of household where the household was made up of several friends). Once this was done a PART B was administered for each person in the household with regular employment. A PART C was administered for each self-employed person in the household, a PART E was asked for each casual worker in the household, and a PART F was administered for each person looking for work. Following the purchases made in the last 24 hours were listed on SHEET 1, and the purchases in the categories listed in PART H and at the bottom of SHEET 2 were listed on SHEET 2. Finally, PART II was administered to (or for) the head of household.

Since every part of the survey was very rarely needed for any given household, the parts were physically arranged as follows. A basic questionnaire was first made up and stapled together. This questionnaire included PART A1, one copy of PART A2, one copy of PART A3, one copy of PART B, one copy of PART G, one copy of PART H and one copy of PART II. Several of these questionnaires were then placed on a clipboard together with extra PARTS A2, A3 and 8; extra SHEETS 1 and 2; and copies of PARTS C, E and F. While initially this arrangement did lead to some excessive shuffling by the interviewers, they fairly quickly learned to use this system fairly effectively. It also should be noted that the interview
used in the field were of several colors to help the interviewers in finding needed parts. (PART A1 - white; PART A2 - green; PART A3 - pink; PART B - white, PART C - green, PART E - white, PART F - green, SHEET 1 - yellow; SHEET 2 - pink; PART I - white).

Clearly, the time taken to administer any given interview depended very heavily on the make up of the household in question. In a simple one or two person, one job household the entire interview often took no more than 35-40 minutes. On the other hand, in more complicated households, and especially in households which had self-employed people, the administration of the interview could take as long as 1½ hours. This often strained the willingness of the household members to co-operate, and probably biased answers to questions late in the questionnaire. Unfortunately, I have no good way of knowing how serious this possibility of bias is.

Despite some problems, the interviewing stage of this data collection process went remarkably well. I think this was largely due to the fact that, as I have mentioned before, the interviewers used are an able, experienced, and mature group who did an excellent job overall. I would highly recommend them to future researchers doing surveys in Nairobi. They can be reached through Mike Mjoroge who is in the Town Planning Section of the Nairobi City Council.

**PART S: CODING**

The coding, like other parts of the survey, turned out to be more expensive and time consuming than originally expected. As can be seen from the coding manual (immediately following the questionnaire), there are several parts to the coding. These include coding background information about the household, coding information about the head of household, coding information about the expenditure patterns of the household, and coding information about the employment and background of each employed member of the household. The actual procedure for doing the coding was as follows. In the first place, I separated and read the questionnaire. If a particular questionnaire was incomplete it was returned to the field. Each complete form was separated as follows: First, information about the head of household's employment, (either PART A1 or PART A2 plus the appropriate employment type form) was stapled together with PART A3 and PART I. Then information about the employment of other members of the household (either PART A1 or PART A2 plus the appropriate employment type form) was stapled together. Finally, SHEET 1 and SHEET 2 (containing information about household expenditure) were stapled together. These newly created bundles were
placed in an envelope, on which was taped a sheet of paper (labeled Form 1 below) with pertinent information about the household. This work was done by me in the course of reading the questionnaires daily. (This task was fairly time consuming, but I do feel that reading the interviews daily was very important to maintaining the quality and thoroughness of the information collected).

In any case, the resulting envelopes were then split among the teams of coders. One member of each team used the coding instruction sheet to code the information from the sheets about household purchases, while the other used the coding instructions for card type 1 and card types 23 and 22 to code information about the household as a whole and the head of household. Once this was completed coding instructions for card types 3, 4, 51, and 52 and for the businessman and background routines were used to code information about the employment and background information of each individual who was working or looking for work.

This work was done by four school leavers, and was supervised by a University graduate (who also checked the work of the coders.) There also was a fifth school leaver available part of the time who helped keep the work up to date and also did a variety of odd jobs for me. With this team it was possible to keep up with the work of the interviewing team, and as a result the coding was completed two days after the interviewing—on July 5. Finally, during the week of July 7, the coders used the sheets entitled Routine for Checking Coding to check crucial parts of the coding.

Overall, the system described above seems to have worked fairly well. Of course, it is difficult to tell how accurate the work which has been done is. However, the checking procedures instituted seem adequate. While it is inevitable that mistakes remain, it does seem that they be expected to be relatively few in number. As seems to be the general wisdom, it seems likely that work could have been saved by waiting until all the questionnaires to be coded had been collected. However, given the time pressure involved, this was impossible. In fact no serious penalties seem to have resulted. It remains to be seen what sort of problems will be encountered during analysis of the data.

PART 6: CONCLUSION

Essentially what this survey has done is collect data necessary to estimate the degree of self-sufficiency of the economy of a low income area of Nairobi, Kenya. Such an estimate can be made from both the income and expenditure sides, since the survey collected information on where people earn their income and where they spend it. This information is
central to the specification of the sort of growth model presented at
the I.D.S. W.P. No. 140, and the survey was designed primarily in order
to collect information for this type of model. Another important use of
this data will be in doing at least a preliminary analysis of various
demand elasticities for a number of informal sector products and services.
I plan on using the data both in these two ways and for several projects
which at this point seem of lesser importance. Results of these projects
will be forwarded to I.D.S. Presumably the results of such study will in
part indicate directions for further study. Therefore, it may be premature
to indicate what directions further studies should take. Nevertheless, I
would like to end this paper with some comments about two research projects
which I feel might be interesting extensions of the one described here.

The first project is one I had originally planned to do but which
I failed to complete because of the lack of time caused by the delays
mentioned above. Essentially it was a project designed to test the hypo-
thesis of the I.L.O. (and others) that increasing the equality of the
distribution of income would lead to an increase in the demand for informal
sector projects.

This was to be done by extending the sort of survey described
above to a sample of households in Nairobi as a whole, and then determining
various demand elasticities (including the income elasticity of demand) for
informal sector projects. In fact in many ways this seemed to me to be
potentially the most interesting study which was described in the original
plans for this survey (which was to include a sample of the city as a whole).
Unfortunately, the Kariobangi sample had been chosen and the city wide
sample had not when it finally became clear that some sort of survey would
be allowed. It was in part as a result of that fact that the latter part
of the survey was dropped. This decision to drop the city wide sample was
only taken because of the strong pressure I felt to return to finish my
Ph.D. dissertation before a commitment to take a University academic job.
and to teach two new courses began for me in September of 1975. In fact,
I had even drawn up a mail survey to be used in the European and Asian
areas of Nairobi to simplify data collection there. I have included this
at the end of the paper.

The second project which seems to me to be of interest is to
collect the kind of data described above for a local area outside of the
main urban centres in Kenya. In fact, given the predominantly rural nature
of the Kenyan economy, this may be the most important type of study of all.
For in an important sense, the economy of Kenya is made up of a large number
of small semi-self-sufficient rural communities. Because of this, a sensible
way of planning development in Kenya would seem to be to determine the needs of these small rural communities and then plan ways for helping them fill these needs. But the approach described by I.D.S. Working Paper 140 and 195 in combination with this paper seems to me to be one way of in fact determining the needs of such communities.

It is difficult to know how to end a paper like this. Perhaps, since only people contemplating doing a survey will have read this far, I should simply give some general advice. I guess I have three things to say. First, everything takes much longer than originally planned. Second, everything costs much more than originally estimated. Third, this type of survey seems to me a good way of getting a feeling for what is going on in the country.

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We are taking a survey of households in Kariobangi in order to determine what goods and services the people in Kawangware buy from small African businessmen. The survey is sponsored by the International Labour Office and is being run in co-operation with the National Christian Council of Kenya (NCCK). The information we gather will be used to help small African businessmen improve their businesses, and the neighborhoods where their businesses are located. All information you give us is completely confidential. We appreciate your co-operation.
0. 0/- to 99/- per month
1. 100/- to 249/- per month
2. 250/- to 399/- per month
3. 400/- to 599/- per month
4. 600/- to 799/- per month
5. 800/- to 999/- per month
6. 1000/- to 1499/- per month
7. 1500/- to 1999/- per month
8. 2000/- to 2999/- per month
9. 3000/- or more per month