POLICY, RELEVANCE AND COST-EFFECTIVENESS OF THE INFORMAL JUA KALI SECTOR AS AN ALTERNATIVE MODE OF VOCATIONAL EDUCATION AND TRAINING IN KENYA: A COMPARATIVE EVALUATION

BY

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ABSTRACT

The purposes of this study were to examine policies and strategies for the development of the informal *Jua Kali*[1] sector in Kenya, to identify and test underlying assumptions about the nature and characteristics of the sector, and to evaluate the relevance and cost-effectiveness of informal apprenticeship programmes in the sector, in order to explore its potential as an alternative mode of vocational education and training. Literature review pointed to three major assumptions about the sector: its trainees have low levels of education and had failed to qualify for progression through the formal system; it limits skill transfer to kinship relations; formal modes of training are significant contributors to its skilled workforce and represent viable avenues of skills development for the sector.

In order to test these assumptions and address other research questions, a field survey of the Jua Kali sector was carried out. The survey covered four provinces (Western; Nyanza; Rift Valley and Nairobi) and comprised a sample of 101 instructors and 177 trainees, selected using a two-stage cluster random sampling technique. Questionnaires and checklists were used, recording over 90% average return and response rates.

Results showed that the majority of trainees (61.93%) were primary school leavers, 77% had qualified for further formal education and training, and 76.44% had no kinship relations with their instructors. Further, 71.57% of the instructors had trained entirely on-the-job within the Jua Kali sector itself, while the formal private and public sectors accounted for only 15.69% and 12.75%, respectively. The Jua Kali mode of training largely met the criteria of relevance, had high external efficiency but relatively low internal efficiency.

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[1]The term *Jua Kali* is an expression in Kiswahili. Its English translation is "hot sun". The name Jua Kali sector therefore, as commonly used in Kenya, is reflective of the conditions under which most artisans, craftsmen and technicians involved in the informal sector work: usually in the open, under a hot sun. Where physical structures exist, they are usually of temporary constructions and mainly used as stores and office combinations. However, as discussed in chapter two of this study, the complexity of the Jua Kali sector renders any general definition of the sector problematic. In this study, *Jua Kali enterprises* refer to open-air establishments or workshops in Kenya, where artisans and craftsmen fabricate, manufacture, repair and sometimes sell various items. Examples are the Jua Kali garages for motor vehicle repair, carpentry and joinery workshops, shoemaking and repair, as well as building and construction works.

The study confirms that the majority of Jua Kali trainees have low levels of education, but disproves the assumption that they are "academic failures". It demonstrates that the informal Jua Kali sector does not limit skill transfer to kinship relations, and argues that the concept and strategy of skills training ***for*** the informal Jua Kali sector is a fallacy. Accordingly, it is concluded that the Jua Kali sector offers a viable alternative mode of vocational training, and does so without compromising the equity criteria.

Suggestions for alternative policy and practice for enhancing the training component of the sector relate to strengthening the primary school curriculum, establishing productive linkages between the Jua Kali sector, formal vocational institutions and the school, certifying Jua Kali qualifications, and refocusing the nature of intervention by government and development agencies. Further research on the extent to which the level of education impacts on the trainability and productivity of Jua Kali trainees, and the link between theory and innovation (or lack of it) among Jua Kali instructors and trainees is suggested.

DECLARATION

This thesis, unless specifically indicated to the contrary in the text, is my own original work and has not been presented for degree work in any other University.

Fred Simiyu Barasa

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DEDICATION

This thesis is dedicated to my children Peter Juma, Esther Nafula and Caleb Wafula, who endured prolonged periods of Daddy's absence at various stages of this study.

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CHAPTER 1

PROBLEM CONCEPTUALIZATION

INTRODUCTION

The increasing demographic pressures, rapidly changing technologies and rising rates of unemployment have placed new demands and challenges on national education systems. Consequently, most developed as well as developing countries have to address the emergent need for reviewing, adapting and sometimes redesigning their education systems.

One area that has attracted considerable attention is vocational education and training. Broadly defined, vocational education and training include all skill transfers and acquisition, formal and informal, involved in the enhancement of a society's productive activities (Carnoy, 1994). For this study, vocational training in the informal sector refers to purposeful acquisition of knowledge, skills and attitudes required for the performance of specific tasks within a given trade. Whether provided by the public sector (government) or the private sector, this type of training usually takes one of the following three modes: pre-employment training provided at school or post school institutions; formal apprenticeship training in the modern sector; and informal apprenticeship training in the informal sector.

The provision of high quality vocational training is considered one of the essential preconditions for economic growth and development in the modern era (Bennell, 1991). However, in order for governments, private investment agencies and individuals to decide which mode of training to support, three key issues, which are important indicators of the quality of training, must be addressed. These are: efficiency; effectiveness; and relevance. Within the contexts of this study, these terms are operationally defined below.

(a) *Efficiency*

The efficiency of a training system refers to the capacity to maximize outputs or productivity and minimize inputs. For the informal Jua Kali sector, some of the criteria considered in

assessing its efficiency as a mode of vocational training included: the utilisation of human and physical resources; the methods of recruitment, instruction and assessment; the quality of trainees; and the trainee flow rates.

(b) *Effectiveness*

The effectiveness of a training system, refers to how well it meets clearly stated objectives. For this study, the specific objectives of vocational training in the informal Jua Kali sector were in themselves a subject of investigation. Efficiency and effectiveness, however, are closely interrelated concepts, since improving the efficiency of a training system may also enhance its effectiveness. The concept "cost effectiveness" is explained later in this chapter, under the discussion on the conceptual framework of the study.

(c) *Relevance*

The relevance of a training system, for this study, refers to the extent to which the system meets the needs of the individual trainees and the labour market, and contributes solutions to perceived social and economic problems for which vocational education and training is usually prescribed. A relevant mode of training would therefore be one which:

(i) Produces individuals with readily marketable skills which enhance labour mobility;

(ii) Is responsive to technological changes and the underlying skill requirements;

(iii) Contributes to the enhancement of equity especially by improving the chances for productive employment of the socio economically disadvantage groups.

Most of the studies that have attempted to evaluate the efficiency and effectiveness of vocational education and training, concentrated on two modes: institutional pre-employment training and apprenticeship training in the modern sector (Fuller, 1976; Borus, 1977; Psacharopoulos, 1985; Bennell, 1993). The informal sector as a mode of vocational training

has been largely ignored yet as King (1977, p.61) points out, "...over the last thirty to forty years, a system has grown, almost entirely unnoticed by educationists, which has quietly been producing hundreds of artisans yearly with basic craft skills."

This study examined vocational education and training in the informal sector, with a specific focus on the informal Jua Kali sector in Kenya. The examination was for the purpose of determining the extent to which the three criteria of quality (efficiency, effectiveness and relevance) are met by this mode of training.

BACKGROUND TO THE PROBLEM

Kenya, like many other newly independent African countries, embarked on a massive quantitative expansion of the formal school system during the first two decades of its post colonial era (1963 - 1983). For instance, during the first decade (1963-1973) the number of children enrolled in primary school slightly more than doubled from 892,000 to 1,816,000 and by the end of the second decade in 1983, the number had increased to 4,324,000 (Kenya, 1989). However, the system was soon confronted with several challenges: a high rate of population growth; rising unemployment among school-leavers; rising cost of education against diminishing resources; and lately, social and economic implications of the Structural Adjustment Programmes. The governments' reaction to these challenges has taken various forms, the most notable being the appointment of review commissions. Over the last twenty five years of Kenya's political independence, the education and training system has been the subject of more than ten reviews by special commissions and working parties, some of which have been: the Kenya Education Commission, popularly known as the Ominde Commission (1964); the National Committee on Educational Objectives and Policies (1975); the Presidential Working Party on the Establishment of a Second University in Kenya, commonly known as the Mackay Report (1981); and the Presidential Working Party on Education and Training for the next Decade and Beyond (1988). The reports that emerged from these commissions and committees seemed to agree on two basic issues. Firstly, that there was a mismatch between the skills possessed by school-leavers and those required for available jobs in the labour market, because schools were providing a highly academic oriented curriculum

that provided pupils with skills which were not readily marketable. Secondly, that in the light of the above contention, there was a need to diversify the school curriculum by infusing vocational subjects into an otherwise purely academic curriculum.

In an attempt to solve these problems of school leaver unemployment and its perceived causes, the government has devised various strategies: increased vocationalization of the primary and secondary school curricula as reflected in the 8-4-4 system[2] of education; official recognition of and emphasis on the role of the informal sector in employment generation; and a structure of incentives to the private modern sector aimed at enhancing its participation in employment and training. The major motivating factor for the vocationalization of the primary and secondary school curricula in Kenya, like for most developing countries, has been the belief that it would widen students' choices of future careers, enhance the acquisition of marketable skills, and therefore make the school system more relevant to the world of work (Psacharopoulos, 1985).

Although the Kenya Government has evidently continued increasing its own participation in the provision of vocational education and training while at the same time encouraging private sector participation, it acknowledges that two problems persist: the relevance of the education and training system to the changing needs of the economy, and the cost of education (Kenya, 1989; Kenya, 1997). In particular, the chief concern seems to be how to relate the cost of education and training to, or justify it against the effectiveness of the system. Clearly, this points to a concern for cost effectiveness. These key problems of the relevance of skills to be imparted to a country's labour force, the mode of training to be used in imparting those skills, and its cost effectiveness are not unique to Kenya, as they have been a subject of debate and research in many other countries such as USA, Japan, Korea, Israel, and Zimbabwe (Borus, 1977; Psacharopoulos, 1985; Hilowitz, 1987; Bennel, 1991; 1993). In the light of rapid technological changes, however, the debate on, and search for relevance of skills training, is likely to persist for a long time to come.

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[2]The 8-4-4 system refers to the three cycles of the education system or structure in Kenya, adopted in 1985, which entails eight years of primary education, four years of secondary education and four years (minimum) of university education.

The suitability of a mode of vocational education and training has tended to be judged by evaluating its cost-effectiveness, efficiency and the quality of its products. Such evaluations, as shown in the next paragraph, have basically been comparing two modes of training: formal apprenticeship training in the modern sector; and pre-employment training provided at either vocational secondary school level or some other post school training institution.

Fuller (1976) carried out a study to explore the relative effects of alternative types of job training on the performance and promotion of tradesmen in a large, modern factory in South India. One of the specific objectives of the study was to examine the proposition that in-employment (enterprise-based) training is generally more effective and less costly than pre-employment training provided in vocational and technical institutes outside the employment system. The study, using worker efficiency ratings as a measure of job performance or productivity, established that there was a positive relationship between the mode of training and job performance: workers who mastered their trade in a firm were more productive than those who graduated from a vocational institute. Further, the study showed that the costs of training in a vocational institute were substantially higher per trainee than the cost of in firm training. Based on these findings, Fuller concluded that enterprise-based training was more effective and less costly than pre-employment vocational training in preparing workers for certain trades. He went further to recommend that "the continued development of vocational institutes should be viewed with circumspection by education planners, and administrators of international assistance organizations" (Fuller, 1976, p.38). However, the major weakness of this study was lack of a representative sample of the total population in India of workers with backgrounds of different modes of training. Since it was a case study, with a limited sample, the findings may not be generalized to other factories in India, and much less to the rest of the world.

The relative effectiveness and merits of different modes of vocational training received further attention from Borus (1977). This study was carried out in Israel. Borus sought to break tradition with previous studies which, he argued, had merely been comparing vocational and academic secondary school graduates in developed countries or examining the relative costs of the different modes of training without relating them to subsequent benefits derived from

that training. The specific objective of the study was to measure the economic returns associated with the costs incurred for four different modes of vocational training in Israel: vocational secondary schools; industrial schools; apprenticeships; and short courses. The economic returns were measured in terms of increase in productivity (higher earnings) resulting from vocational training. Two important findings emerged from this study. First, that although the four modes of training differed in their length, curriculum and type of students, there was little difference in the earning capacity of their graduates. Second, that apprenticeship as a mode of training was three times less expensive than the vocational secondary school. The main implication of the study therefore was that apprenticeships were more cost effective in training youth for semi-skilled and skilled occupations than were the formal vocational programmes of vocational secondary schools. Borus, however, pointed to the need for carrying out similar studies in other countries before definitive judgements could be made. This study was undertaken in this light.

Psacharopoulos and Loxley (1985) undertook a comprehensive and empirical evaluation of the impact of diversified secondary education on national economic development, with a specific focus on evaluating the external efficiency aspect of school systems. This was basically a longitudinal study whose main purpose was to test a set of hypotheses aimed at establishing whether the diversification of the curriculum in secondary schools led to differences in post school experiences between students who enrolled in pre vocational courses and those who concentrated solely on academic programmes. The relative costs of education with its outcomes, in terms of graduate activities and earnings, were also assessed. The relevant data were collected in two countries, Tanzania and Columbia, and the results compared.

The study concluded, based on evidence from the two countries, that while diversification had a number of positive results such as higher cognitive achievement and better market performance, it neither led to a higher increase in the productivity of the workers nor a better fit between the school and the world of work. Graduates from the diversified and conventional academic schools spent roughly the same amount of time in finding employment. Moreover, the cost per student in a diversified school was found to be twice that in a conventional

academic school, and in the absence of candid potential extra benefits, both monetary and non monetary, that diversified schools brought to society, such extra cost seemed unjustified. Effectively therefore, the study weakened further the rationale and the need for a policy of vocationalizing secondary schools' curricula as a principal mode of vocational training.

The above studies, and similar ones discussed in chapter two of this study, essentially have:

(i) Shown that pre-employment vocational training provided at post school public institutions is a less cost-effective and less efficient mode of training than apprenticeship training provided at modern sector enterprises;

(ii) Established that vocationalization or diversification of the formal school system (primary and secondary curricula) as a principal mode of vocational education and training, enhances neither its efficiency nor results into graduates with better productivity, employability or earning capacity than those from the conventional academic school or other modes of training;

(iii) Recommended that in the light of the above, apprenticeship training especially by the private sector, is the preferred mode of vocational education and training.

In all of these studies, however, the discussions of effectiveness and efficiency have focussed on the formal sector rather than the informal sector, and attention has rarely been focussed on the relevance of the training process itself. Although there is some literature on vocational training in the informal sector, much of such literature has largely been descriptive with little or no empirical data to support the assertions made (King, 1977; Oketch, 1995), or neglected important aspects such as the cost-effectiveness and relevance of training (Velenchik, 1995). Further, although the potential contribution of Kenya's informal sector to employment generation and training was the first to receive official international recognition (ILO, 1972), and the informal Jua Kali sector has rightly been described as a launching pad for the country's sound industrial take off (Kenya, 1996), no empirical study has been done to evaluate its efficiency, effectiveness and relevance. Moreover, most policies and intervention

measures for Kenya's informal Jua Kali sector, as shown in chapter two of this study, have largely been based on untested assumptions. This study is a contribution towards filling these gaps.

STATEMENT OF THE PROBLEM

Although research has asserted that enterprise-based vocational training in the formal sector is more cost effective and efficient than pre-employment mode of training in public sponsored vocational institutions, no similar studies have been done to show whether this assertion holds true for enterprise-based training in Kenya's informal Jua Kali sector. But training policies and investment decisions on skills development are generally influenced by the perceived efficiency, effectiveness and relevance of the modes by which such skills are developed. Given a lack of valid and reliable empirical data on the efficiency, effectiveness and relevance of the Jua Kali sector as a mode of vocational training, to what extent can its comparative viability (relative to other modes) be judged, or informed policy decisions to support (or discourage) its growth be made by various stakeholders?

Moreover, as we show in chapter two of this study, while Kenya's policy for the development and growth of the informal Jua Kali sector rightly recognizes and explicitly promotes the employment component of the sector, it only acknowledges but fails to promote its training component. This failure to promote the training component of the Jua Kali sector is largely based on certain assumptions about the characteristics, role and potential of the sector namely:

(i) That it consists of people who are academic failures (academically incompetent) with low or no professional qualifications;

(ii) That as a mode of vocational training, the sector limits skill transfer to kinship relations; and (contradictorily);

(iii) That it is largely supplied and managed by graduates from formal vocational training institutions.

Essentially, the first assumption queries the efficiency of the sector while the second assumption queries its relevance. The third assumption, on the other hand, not only contradicts studies which have argued against the suitability of formal vocational training institutions for preparing marketable technical workforce for private sector enterprises, but also raises queries about the rate of output, destination and related post training experiences of graduates of informal Jua Kali sector apprenticeships. There have been no relevant studies or empirical data to support these assumptions, despite their profound implications for Kenya's vocational training policy. Could the lack of support for the informal Jua Kali sector's vocational training component be therefore based on popular misconceptions about its efficiency and relevance? More importantly, to what extent does the evidence about actual practices, processes and nature of skilled workforce in the informal Jua Kali sector confirm or disprove the above assumptions? Further, to the extent that these assumptions are confirmed or disproved, what are the implications for Kenya's vocational training policy? These issues, as reflected in the section below, constituted a central purpose of this study.

PURPOSE OF THE STUDY

Statement of Purpose

The purpose of this study was to:

(i) Evaluate the efficiency and cost-effectiveness of vocational training in the informal Jua Kali sector of Kenya, in order to assess its comparative viability as a mode of training;

(ii) Examine the extent to which apprenticeship in the informal Jua Kali sector, as a mode of vocational training, meets the criteria of relevance namely:

   (a) Production of individuals with readily marketable skills which enhance labour mobility;

   (b) Responsiveness to technological changes and the underlying skill requirements;

(c) Enhancement of equity especially by improving chances for productive employment of the socio-economically disadvantaged groups;

(iii) Evaluate the extent to which the assumptions about the academic and professional backgrounds of the technical personnel and trainees[3] in the informal Jua Kali sector, the nature of skills acquisition and transfer, and the principal source of supply for the Jua Kali skilled workforce, as well as the direction and magnitude of labour mobility, are a reflection of reality or a perpetuation of popular misconceptions;

(iv) Examine the implications of (i), (ii), and (iii) above for public policy on skills training in the informal Jua Kali sector as a mode of vocational education and training in Kenya; and

(v) Make a cross national comparative review of literature on the training and related characteristics of the informal sector as a mode of vocational education and training in other developing countries, with a view to identifying major issues, convergences and divergencies in the reforms and strategies adopted by different countries to improve the efficiency and effectiveness of their training systems, and drawing some useful lessons for Kenya.

Operational Research Questions

In order to achieve the above goals, the study sought to answer the following specific research questions:

1. What are the criteria of, and procedures for the selection of trainees into the various vocational training programmes offered in the informal Jua Kali sector?

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[3] In this study, trainees (apprentices) are individuals whose initial recruitment into and sustained presence within a given Jua Kali enterprise was for the primary purpose of acquiring skills. They do not enjoy certain privileges (such as a negotiated salary) or bear responsibilities of an employee, although they may receive some monetary or meal allowances at the desecration of the Instructor. Jua Kali instructors, on the other hand, refers to those knowledgeable and skilled individuals (master craftsmen), to whom a trainee was attached, and whose initial entry to or sustained presence within a given Jua Kali enterprise, was primarily for contributing to its productivity and profitability, either as employees, partners or sole owners of the enterprise.

2. What do the following educational characteristics of instructors and trainees in the informal Jua Kali sector suggest about the quality of technical manpower in this sector?

(a) Level of formal schooling;

(b) Overall performance in National Primary and Secondary School Leaving Examinations (if any);

(c) Specific performance in subjects that are usually considered as providing a firm foundation for a successful technical career namely: language, mathematics, science and vocational subjects.

3. What is the impact of the following processes or characteristics:

(a) The nature and scope of knowledge and skills offered to, and acquired by trainees (course content);

(b) The methods of instruction and assessment;

(c) The size of training programmes in terms of "class" size and instructor/trainee ratios;

(d) Trainee flow rates;

(e) Unit cost of training (per trainee); and

(f) Utilization of both human and physical training resources,

on the internal efficiency of vocational training in the informal Jua Kali sector?

4 What do the following trends: the average job search period (time taken by a trainee between completion of training to his or her first employment); the earning capacity of graduates from the informal Jua Kali sector; and the employment patterns of graduates from the informal Jua Kali sector (cross sectoral or intra sectoral; salaried or self-employment), suggest about the external efficiency of vocational training in the informal Jua Kali sector?

5 What are the implications of 1, 2, 3, and 4 above for the cost-effectiveness of vocational training in the informal Jua Kali sector?

6 To what extent does apprenticeship in the informal Jua Kali sector, as a mode of vocational training, meet the criteria of relevance as measured by:

(a) The extent to which skills possessed by its graduates are readily marketable and enhance labour mobility?;

(b) The degree to which its graduates possess the capacity to cope with or influence the technological changes and the underlying skill requirements?;

(c) The extent to which it fulfills the equity objective by enhancing the life chances of disadvantaged groups, as reflected in the socio-economic backgrounds of its trainees?

7 To what extent is skill transfer from the instructor (master craftsman) to the trainee, within the informal Jua Kali sector, limited to kinship relations?

8 Which of the three modes of vocational training (pre-employment training at school or post school institutions; formal apprenticeship at private modern enterprises; informal apprenticeship in the Jua Kali sector), is the principal source of supply for the informal Jua Kali sectors' technical manpower?

9 What are the trends in the direction (sector wise) and magnitude (how significant) of labour mobility among the technical manpower in the informal Jua Kali sector?

10 What does the available evidence on the nature of skill transfer, principal source of supply for the Jua Kali manpower and trends in labour mobility suggest about the validity or invalidity of the common assumptions about the informal Jua Kali sector as a mode of vocational training in Kenya?

11 What are the overall implications of findings from this study for the viability of, and public policy on skills training in the informal Jua Kali sector, as a mode of vocational

education and training in Kenya?

12 To the extent that vocational training policy change (if any) is required, what lessons (if any) can Kenya draw from a cross-national study of similar experiences of vocational training in some selected countries?

JUSTIFICATION AND SIGNIFICANCE OF THE STUDY

The growing importance of the informal sector is reflected by the fact that in most developing countries, employment growth in this sector outstrips that in the modern sector. In Kenya for instance, the informal sector employs 40 - 60% of the urban labour force, and contributes between one quarter and one third of the total urban incomes (Kenya, 1989, p.201). Further, it has been argued that in Kenya, there are more young people acquiring their training on the job via the urban informal sector enterprises, than there are via the institutional training system of youth polytechnics and technical training institutes (King, 1996, p.185). It was broadly estimated, for instance, that in 1990, there were some 80,000 informal sector apprentices as compared with only 55,000 trainees in the formal training system (Yambo, 1991, p.12). The above trends suggest that many school leavers in Kenya will increasingly be involved in small-scale enterprises and other forms of self-employment within the informal sector. In the past, however, most studies as well as manpower plans have focussed on formal sectors. The few that tried to address the informal sector mainly considered its employment component, with little regard to the training component, despite its growing significance. The justification for this study is therefore made on the basis of the growing importance of the informal Jua Kali sector as a mode of vocational training, against its relative neglect by researchers, policy makers, funding agencies and the Kenya government.

The significance of this study may be stated at three levels. Firstly, evaluating the cost effectiveness and efficiency of the informal Jua Kali sector sought to establish whether what has emerged as a strong consensus among researchers, namely that enterprise-based training in the private modern sector is invariably more cost-effective and that therefore, governments should take steps to promote this mode of vocational education and training, was also true for the informal Jua Kali sector in Kenya. In the light of the increasing importance of the informal

sector in Kenya, the findings are expected to have significant policy implications for the government and other funding agencies in the planning and choice of alternative modes of training middle-level skilled workforce. Further, it was assumed that assessing efficiency would inevitably lead to identifying inefficiencies and their causes. If both efficiency and effectiveness were low, it would lead to wasted investment in the training system and therefore weaken any justification for promoting the informal Jua Kali sector as an alternative mode of vocational training. Alternatively, identifying policies and practices that lower the cost of training in this sector would aid in recommending ways and means of improving the efficiency of the training programmes.

Secondly, in most studies on the informal sector and traditional apprenticeships, two key assumptions have been made : that labour mobility is usually from the informal sector to the modern sector; and that skill transfer from the master craftsman to the trainee is limited to kinship relations. This study sought to test these assumptions, among others. Establishing trends in the direction and magnitude of labour mobility would have several policy implications. If there was evidence that entrepreneurs or trainers mainly come from the informal Jua Kali sector itself than from the modern formal sector, then this would suggest that encouraging the informal Jua Kali sector's training component could enhance a "self multiplier effect". If, however, the reverse is true, namely, that most of the entrepreneurs or instructors come from the modern sector or public pre-employment training institutions, it would still have policy implications on technology transfer, adaptability and curriculum planning. Further, findings on whether or not the informal Jua Kali sector limits skill transfer to kinship relations would shade light on the potential impact of this mode of training in assuming a national perspective and enhancing the equity objective of vocational training.

Third, this study is perhaps of greater significance in that it generates valuable data on vocational education and training in the informal Jua Kali sector, and hopefully, stimulates more debate and research on the potential of skills training in the informal sector of the economy generally.

DELIMITATIONS AND MAJOR ASSUMPTIONS OF THE STUDY

The informal sector of the Kenyan economy comprises three major sub-sectors: commerce, manufacturing and service sectors. The focus of this study was on occupations falling within the manufacturing and service sub-sectors: motor vehicle, mechanical, woodwork, building construction, electrical and electronics, welding and fabrications, carpentry and joinery. The choice of the manufacturing and service sub-sectors was based on the fact that they not only represent the major occupations for which substantial skill training is required, but are also the most common in which the mode of vocational training under review is practised. Thus the occupations which fall under the commercial sub-sector, such as street trading and other small scale businesses, were not covered under this study for the same reason as above. However, both the urban-informal sector and the rural-informal sector were covered by this study, in order to validate any generalization of findings, where possible.

A major assumption of this study was that in view of the rapid technological developments, complex network of communications, global trade and political interdependence, and the resultant international co-operation, there is a relatively high rate of technology and skill diffusion or transfer among developed and developing nations. Given this premise, various countries face largely similar challenges in terms of the type and relevance of skills to be imparted to their labour force, the alternative modes by which such skills should be imparted, and their cost effectiveness. The nature of responses to such challenges will mainly depend, among other factors, on the level of industrial development and nature of essential resources available. Kenya being a developing country, with an eventual vision of transforming into a newly industrialized country by the year 2020 (Kenya, 1996), has important lessons to learn from the experiences of countries at various levels or phases of industrial development. Based on this assumption, a choice was made to examine some trends in vocational education and training generally, and skills training in the informal sector particularly, in some other countries from which to draw some lessons (if any) for Kenya, rather than selecting only one country with which to compare Kenya.

CONCEPTUAL FRAMEWORK

Human Capital theory constitutes the broad conceptual framework within which specific analytic concepts central to this study are measured and analysed. The study is also informed by the knowledge base on research approaches in Comparative Education. A treatise on human capital theory as well as the various methodological approaches to the study of comparative education, is in itself a subject of research beyond the scope of this study. However, it suffices to articulate the major assumptions underlying human capital theory, and give a brief review of the major approaches to comparative education research, as a way of illuminating and clarify further some important concepts and principles employed in the design and analytic procedures of this study.

Human Capital Theory and Cost-effectiveness

Human Capital theory is widely used in economic related studies. Briefly defined, the term capital refers to the stock of assets which will yield benefits in the future. One of the major premises of this theory is that all expenditure can be classified as either investment or consumption. Investment entails the acquisition of assets which yield benefits over a long period, while consumption entails the purchase or use of goods and services which bring immediate but short-term benefits. According to the economic theories of capital and investment, education and training create assets (knowledge and skills) which increase the productive capacity of manpower (yield benefits) in just the same way as investment in new machinery raises the productive capacity of the stock of physical capital[4]. Thus education and training could be regarded as a form of investment in people, that results into future benefits such as :

(i) improved quality and productivity of the labour force; and

(ii) rise in future income levels of the individual, employer and society as a whole.

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[4]For detailed analysis see: Schultz, T. W. (1961) *Investment in Human Beings* (Chicago: University of Chicago Press); and Becker, G. S. (1964, 1975) *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education* (Princeton, NJ: Princeton University Press).

It is this aspect of enhanced productivity and earnings that makes most employers consider training as a human capital investment. For Jua Kali trainees, most of whom (as shown later in this study) are self-sponsored, training is also seen as an investment and it would be expected that enhanced earnings (whether perceived or real), would be one of the key factors influencing decisions to undertake training in the informal sector. Where there are two or more competing sectors or alternative ways of investing resources, then a question of relative profitability of investing into one or the other arises. For instance, consider a case in which there is an agreed educational objective namely, enhancing the employability of school-leavers through vocational training, but with two or more alternative modes of achieving this objective : pre employment training at a formal institution, enterprise based training at a given firm, and vocational training at a conventional secondary school. According to Human Capital theory, the decision as to which mode of training to invest in, will depend on how one resolves the question: how profitable is it for the investor, for individuals or for society to invest resources in a given mode of training rather than in the other? This is a crucial decision to make, especially in contexts of scarce resources. In such cases, cost-benefit and cost effectiveness analyses, which are analytic concepts framed within human capital theory, help to answer the questions.

Cost effectiveness analysis, which is one of the major concerns in this study, refers to the consideration of decision alternatives in which both their cost and consequences or effects are taken into account in a systematic way (Levin, 1995). To the extent that it is designed to ascertain which means of attaining particular educational or training objectives is most efficient, it is considered as a decision oriented tool. This analytic framework posits that the cost factor is central to the evaluation of a system's efficiency, and hence its profitability. Although cost effectiveness analysis may be seen to be closely related to cost-benefit analysis in the sense that both basically represent economic evaluations of alternative resource use and usually measure costs in the same way, they have some clear differences. According to Mulder (1995), the fundamental difference in their meaning lies in the criteria for evaluating training, while the common element in both concepts is that of costs.

Specifically, he observes that:

> Costs are the financial means that are needed for realizing training in the organization. Cost-effectiveness is the amount to which a given training alternative with an expected level of effectiveness can be realized with a minimum of financial means. Cost-benefit is the relationship between the financial results of training and the costs required to provide these results (Mulder, 1995, p.1136).

Clearly, Mulder argues, and rightly so, that the difference between cost-effectiveness and cost benefit lies in the outcome component. Thus the effectiveness of a solution or programme is assessed in relation to the initial problem or objectives, whereas benefits are expressed as a monetary unit. Levin (1995, P.1131) agrees with this distinction as he asserts that cost benefit analysis is used to address only those types of educational or training alternatives where the outcomes can be measured in terms of their monetary values. However, he points out that most educational alternatives are dedicated to improving achievement or some other educational outcome that cannot be *easily* converted into monetary terms, and therefore advises that in such cases, one must limit the comparison of alternatives to those that have similar goals by comparing them through cost-effectiveness analysis.

The underlying assumption, in cost-effectiveness analysis of vocational training, is that different alternatives are associated with different costs and different training outcomes. By choosing those with the least cost for a given outcome, society can use its resources more effectively and the resources saved through using more cost-effective approaches can be put to other uses. In common practice, cost-effectiveness studies are generally expected to meet the following criteria:

(i) A common goal or problem must be identified;

(ii) Alternative approaches of achievingthat goal or solving that problem must be defined;

(iii) The cost of each alternative should be determined; and

(iv) Dimensions and measures of effectiveness should be identified and considered on a scale chosen to reflect the nature of the identified goal.

For the Jua Kali sector, there is a multiplicity of activities and stakeholders: trainees who seek skills; entrepreneurs who seek to built business and maximize profits; government which seeks to devise policies that would secure the sectors' contribution to the national economy

while maintaining political legitimacy; international development and donor agencies which seek to promote certain ideals; and the immediate society which constitutes market for Jua Kali products and services. This renders the definition of a "common goal" problematic. However, while recognising that different stakeholders would more likely embrace and prioritize goals differently, there is a discernible convergence: the need for enhanced marketability, productivity and earnings. In this study therefore, the common goal identified is that of imparting technical skills upon the nations' middle-level workforce, through vocational training, aimed at enhancing their marketability, productivity and earnings. The underlying problem is how to achieve the above goal in the most cost-effective and efficient way. There are three alternative approaches or modes of achieving that goal : enterprise-based training (formal or informal); pre-employment training at post-school institutions (public or private); and School-based training at a vocational or diversified secondary school. As already indicated elsewhere in this study, research has shown that the last two approaches or modes are less cost-effective and less efficient than formal enterprise based training. However, it is yet to be shown whether or not the same applies for informal enterprise based training, and especially with respect to the apparently vibrant informal Jua Kali sector in Kenya. As Levin (1995, p.1132) notes, "estimates of cost-effectiveness can be derived from previous evaluations or from tailored evaluations for the present purposes." In this study, estimates of costs and effectiveness were based on tailored evaluations for the informal Jua Kali sector, while that for the other modes were derived from previous evaluations of cost-effectiveness in Kenya and other countries.

There have been some arguments against some of the assumptions upon which Human Capital theory is predicated: Honig (1996), Coleman (1997) and Welch (1998) are among the notable ones. According to Honig (1996), by hypothesizing that education is an investment which yields higher wage compensation in return for individual variations of skills training and experience, Human Capital theory places much emphasis on individual decisions at the expense of the social structures that characterize group processes. Further, Honig observes that among empirical studies which have attempted to test Human Capital theory model based on data that examine wage rates in the labour force, although controlling for such intervening variables such as race, gender, experience and socio-economic backgrounds, two notable

weaknesses are evident. First, wages (usually determined by government and employers), may be subject to other considerations beyond skills levels and experience. Second, that it is difficult to isolate mechanisms of self-selection or other externalities such as gender and racial bias from productivity measures. Accordingly, Honig posits that in assessing the efficiency and effectiveness of training, the extent and effectiveness of social networks provided by extended family or community-based relationships should be considered (Honig, 1996, p.178). Like Honig, Coleman (1997) argues that while Human Capital theory tells us much about the role of human capital in facilitating productive activities, it ignores the role played by social capital. Coleman distinguishes between human capital and social capital, contending that social capital comes about through changes in the relations among persons that facilitate action. Further, he argues:

> "If physical capital is wholly tangible, being embodied in observable material form, and human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, *social capital is less tangible yet, for it exists in the relations among persons*" (Coleman, 1997, p.83).

According to Coleman, information channels, for instance, should be seen as an important social capital: they provide a basis for action; a means by which information can be acquired through social relations that are maintained for other purposes, and which facilitates action.

Welch (1998), on the other hand, argues that Human Capital theory is predicated upon the idea that both individual worth and the worth of education can be reduced to economic terms. Accordingly, he contends, education or training is seen in terms of its relative capacity to contribute to economic growth, and individual and social involvement in education is seen as an investment to be weighed against other possible areas of return. Specifically, Welch observes:

> Within Human Capital theory, ...individuals and society are seen as "rational" to the extent that they calculate how to maximize their return to their educational investment ...or only invest in education to the extent that education delivers a better economic rate of return than other forms of investment (Welch, 1998, p.158).

In terms of public investment in education and training, Welch's argument against Human Capital theory is that imposing efficiency principles, which are motivated more by goals of

cost cutting and a desire to impose an ethos of business style principles upon publicly funded education systems during times of financial uncertainty, is counter productive in terms of equity. It is in this regard that he asserts:

> Efficiency however, is promoted at the cost of other considerations such as equity and the provision of service to the whole community, which thus means that the public sector in education is progressively disempowered, since it is now open to the charges that it is no longer fulfilling its charter adequately ... the marginal and disadvantaged groups have to lose at the hands of efficiency (Ibid).

Although the concerns raised by Honig (1996), Coleman (1997) and Welch (1998) are valid, they neither disprove central assumptions of Human Capital theory, nor point to real methodological flaws in studies conceptualized within human capital framework. Instead, it can be argued that they advocate for a broader concept of efficiency and effectiveness, as well as an awareness and deeper analysis of intervening variables that may otherwise fail to be captured by economistic quantification. With reference to this study, they strengthen rather than weaken the approach adopted in the operationalization of key variables and analysis of informal sector characteristics. For instance, Honig's and Coleman's concern for infusing social structures and networks in the analysis of efficiency and effectiveness, was one of the central investigations of this study: the kinship factor in skills acquisition and transfer in the informal sector. The effect of race and gender, or government in distorting measurements of productivity as reflected in salaries of skilled workers, is of little consequence in the context of the informal sector where (as shown later in this study) the sector falls outside government wage regulations, is predominantly male operated, and largely comprises one racial group (albeit with different tribes). Moreover, equity consideration is not entirely lost either, as it is analysed under the assessment of relevance. However, the key concerns raised above were central with regard to the analysis of policy for vocational education and training as well as the strategies adopted in the development and growth of the Jua Kali sector. More importantly, while taking cognisance of the above concerns, it was found necessary to design this study in a way that approximates (as much as possible) previous studies and current debates on vocational training for purposes of comparability.

Research Approaches in Comparative Education

Comparative education is seen to have grown through four stages: the travellers' tales; educational borrowing; the analysis of cultural concepts (or forces and factors); and the social science stage (Trethewey, 1976; Noah Eckstein, 1969, and Kelly, 1982). The third stage (analysis of cultural contexts) was characterised by a concern for the analysis of antecedent factors to explain relationships between education and society, while the social science stage was mainly characterised by the analysis of contemporary relationships. Thus the last two stages basically reflect a shift in the modes of analysis from historical to more quantitative and empirical orientations drawing on the techniques and conceptual frameworks of the social sciences such as economics and sociology (Trethewey, 1976). The above classification of the phases through which comparative education has grown, as well as the various definitions of comparative education as a field of study, reflect an attempt to always classify and define comparative education in terms of its purpose and method. Further analysis reveals that the methods or approaches of comparative education research, as debated and proposed by various authors, are greatly influenced by what the authors perceive should be the ultimate purpose of comparative education. For purposes of this study, we briefly review the four major approaches of comparative education research that emerged at various stages of its early development, namely : the historical approach; the cross-disciplinary approach; the problem solving approach; and the social science approach. We also examine some recent methodological debates that have followed, and show how these have informed certain conceptual aspects of this study.

The Historical Approach

The historical approach to the study of comparative education was, to a large extent, pioneered by Kandel (1933). Although advocating the historical approach, Kandel observed that there was no single method of comparative education that could be prescribed as the correct one. Instead, "the comparison of educational systems of many countries lends itself to a variety of methods of treatment, depending somewhat on its purpose" (Kandel, 1933, p.x). According to Kandel, the major task of a comparative educator is seen as that of discussing

the meanings of education, both elementary and secondary, in the light of the political, social and cultural forces which are the major determinants of the character of national systems of education. The major assumptions underlying his approach are that:

(i) In most countries, the problems and purposes of comparative education are similar;

(ii) Solutions to these problems in each country, however, will largely be influenced by unique traditions and culture, and are therefore bound to be different;

(iii) A study of the various solutions adopted by different countries to solve common problems, would lead to generalizations about our understanding of the meanings or philosophy of education.

Trethewey (1976) summarises Kandel's approach as entailing four major steps: description; explanation; comparative analysis; and identification of patterns, trends or principles. These steps, Trethewey observes, are based on the:

> contention that studies in comparative education should assume the transferability and applicability of educational ideas from one country to another, should move beyond description to analysis and explanation in political, social and cultural context, and should attempt to identify trends and principles for general application (Trethewey, 1976, p.57).

The first step in Kandel's historical approach therefore entails a concise description of the answers given, in theory or practice, to one or more of the problems common to all countries under consideration. The explanation or interpretation of the above problems and solutions is then made in terms of an analysis of causes that have produced them. Consequently, step two entails application of the historical method "to explain why it is that particular arrangements and practices in education have developed in each of the countries chosen for study" (Trethewey, 1976, p.58). This then leads to the third step where a comparative analysis of observed differences between the various educational systems and reasons underlying them is made. Finally, step four entails drawing generalizations of trends, principles and applications which, as Kandel argues, will be based on "observed practice rather than

metaphysics or ethics" (Kandel, 1933, p.xxiv).

Two major pitfalls may be identified in Kandel's historical approach, especially with regard to its applicability to this study. Firstly, the description and analysis of national systems of education in terms of the political, economic and cultural forces which produced them, as advocated by Kandel, would not only require the generation of unmanageable amounts of data but also demand time and financial resources beyond the scope of this study. Secondly, while appreciating Kandel's emphasis on the understanding of the various factors which combined in the past to produce present educational systems or problems, it was nevertheless thought that for this study, this would be less significant than the solution of problems and the development of long-term plans and strategies for vocational training based on empirical evaluations of current practice, albeit not neglecting historical illuminations of the present.

However, the major strength of Kandel's approach, which is entailed in step four and has direct relevance to this study, is the assertion that comparative analysis would lead to the identification of patterns, trends or principles which in effect guide generalizations. This aspect was central in conceptualising the analysis of skills formation in the informal sector within a broad framework of the vocational education and training system. Specifically, it was applied in this study when making an analytical review of research reports and other relevant literature on debates on the rationale for, and mode of providing vocational education and training, as well as training and related characteristics the informal sector in other countries, with a view to drawing generalizations on emerging trends.

The Cross-Disciplinary Approach

The major proponent of this approach is Bereday (1964). According to Bereday, the major purpose of comparative education is to search for lessons that could be deduced from the differences in educational practice in various countries by applying methods of various disciplines. Bereday prescribes four stages of a comparative study: description; explanation (or interpretation); juxtaposition; and comparison. The descriptive stage entails the collection of pedagogic data, while the explanatory stage calls for the application of the methods of the

social sciences to interpret the pedagogical data. Juxtaposition refers to the organization or arrangement of data, aimed at establishing the criteria for comparison. In practice, Bereday's approach may be simplified into seven systematic steps :

(i) Selection of a topic, issue or problem;

(ii) Collection of data relevant to the topic in selected countries;

(iii) Interpretation of data, applying such disciplines as are relevant to an understanding of it in social context;

(iv) Juxtaposition of interpreted data aimed at exposing possible bases or criteria for comparison;

(v) Formulation of hypotheses;

(vi) Testing of hypotheses through comparative analysis; and

(vii) Drawing of conclusions.

The criticism of Bereday's approach has mainly been two-fold : it demands that the researcher should have working multi-disciplinary competencies while generally most people are uni disciplinary; and it recommends formulation of hypotheses after data collection. The latter might lead to the amassing of interesting but irrelevant data due to lack of clear focus, and subsequently a waste of time and funds. Further, Bereday's suggestion that all pedagogical and relevant explanatory data should be collected, has been "criticized for creating but not solving problems of choice, scope and manageability of data" (Trethewey, 1976, p.75).

The Problem Solving Approach

This method was developed by Holmes (1965). The major assumptions of this approach are that all research begins with a problem, and that the chief purpose of comparative education is to identify and analyse the problem, propose policy proposals aimed at improving educational practice, and predict the outcome of such proposals. Thus according to Holmes, comparative education should not just be reflective but should more seriously develop its contemporary and speculative components. The problem solving approach entails four major systematic steps: problem selection and analysis; formulation of policy proposals or solutions; identification of relevant factors; and prediction. A brief explanation of each step follows.

(i) *Problem Selection and Analysis*

The choice of a problem to be investigated is based on one key assumption : that it is common or universal and therefore a cross-national or cross-cultural comparative analysis will elucidate it and suggest possible solutions. According to this approach, the choice of a problem would depend on the experience, knowledge and interests of investigators, and may focus on the issue that is considered of importance in one's own country or one that is clearly of international concern.

(ii) *Formulation of Policy Proposals or Possible Solutions*

The major task here for the researcher is to identify a range of realistic policy choices which might solve the problem under investigation. This is usually done through a comparative analysis of the experiences and practices in the other countries which have attempted to solve the common problem under investigation. The possible policy choices identified at this stage are considered as hypotheses to be tested in the next stages of the study.

(iii) *Identification of Relevant Factors*

This step involves the identification of relevant factors or determinants which are likely to affect any of the proposed solutions in a particular context. This is done at three levels of operation. First is the identification and analysis of the initial conditions or contextual determinants. For instance, one may want to examine education or a chosen aspect of it and how it interacts with or is influenced by political, economic, cultural and social factors. Second is the selection of those determinants relevant to the particular problem being investigated. Third is weighting of the selected determinants to indicate their relative degree of influence or significance to the proposed solutions.

Holmes suggests a threefold framework for analysing the determinants or factors : ideological factors which focus on the pattern of norms, attitudes and values; institutional factors which focus on organizational structures and practices in context; and miscellaneous factors which

focus on climate, terrain, availability of natural resources, and other variables which are not directly under the control of man. This aspect is perhaps one of the major strengths of Holmes' problem solving approach. In suggesting that the proposed policies or solutions should be critically analysed in context through a careful identification of initial conditions, Holmes clearly recognizes the fact that solutions which have worked elsewhere may not necessarily work in another country with an equal amount of success. This was an attempt by Holmes to discourage the indiscriminate educational borrowing which had characterized comparative education in its early stages of development.

(iv) *Prediction*

This is the final stage of the problem solving approach. The assumption here is that the researcher should be able to predict the success of the proposed solutions. The greatest task here therefore is that of establishing or devising the criteria of success. In advocating this approach, Holmes argued that unlike the methods based on historical analysis, the problem solving approach was forward looking, provided a model for making comparative studies scientific, and therefore enhanced the usefulness of the field to educational planning and reform.

While some may criticise Holmes' assertion of the predictive power of comparative education research, others like Lauwerys (1968) have implicitly supported him by emphatically asserting that:

> laws and theories predict but they do not prophesy, for nothing is absolute or certain. They are concerned with probability, and the task of research is to increase the likelihood of correct prediction (Lauwerys, 1968, p.12).

Like Holmes, the belief here is that comparative education should lay claim to predictive power, and develop instruments for the same. In fact, it should be reflective, contemporary and speculative. As human beings, we have come from the past, are living in the present and are headed for the future. The same is true for educational theory and practice as a function of human activity. Depending on the purpose of the study, and the problem under

investigation, comparative education research should look in the past (reflective) to analyse, explain and interpret the present (contemporary) and within normal limits of probability, predict the future (speculative). All the three components are necessary though not sufficient conditions to be fulfilled by any discipline which seeks to make any significant contribution to improved educational theory and practice through informed planning, policy and decision making. To the extent that this study investigates the current characteristics and practices of the informal Jua Kali sector, examines the past beliefs, assumptions and the other factors that have influenced (positively or negatively) the growth and development of the informal Jua Kali sector, and provides suggestions for improvement, it fulfills the reflective, contemporary and speculative functions of comparative education research.

The Social Science Approach

This approach was developed by Noah and Eckstein (1969). Their chief assertion is that comparative education research, like the contemporary social sciences, should be based on a methodology which is characterized by systematic, controlled, empirical and quantitative investigation of explicitly stated hypotheses. Such an approach, they argued, would enable researchers to explore relationships between education and society, and test the hypotheses with cross-national data. The approach may be summarized into seven major steps.

(i) *Identification of the problem*

This entails identifying and clarifying a problem that might be solved by comparative study.

(ii) *Formulation of Hypothesis*

The major difference between Bereday(1964), and Noah & Eckstein(1969) is that while Bereday prescribes a wide ranging descriptive and explanatory phase followed by juxtaposition of gathered, interpreted data before formulating hypotheses, Noah and Eckstein insist that the formulation of hypotheses should come first. They justify their apparent deviation from Bereday's sequence on two grounds: firstly that a hypothesis will provide a

focus for the investigation; and secondly that it will help in guarding against the amassing of irrelevant data.

(iii) *Defining Concepts and Indicators*

Here, the meanings attached to particular terms and concepts used in the study are made explicit. In particular, concepts must be operationalized, i.e defined in terms of various measures or indicators. The significance of this step is that it assists in establishing the criteria for selection of relevant data.

(iv) *Selection of Cases*

The term *cases* here refers to countries or regions with which one wants to compare the problem under investigation. According to Noah and Eckstein, the criteria for selection are threefold : the relevance of cases to the hypothesis; the control of major extraneous variables; and the economy of investigation. The criterion of the economy of investigation is particularly important with regard to prediction. As Trethewey rightly observes, the criterion of economy:

> Raises the question of the number of cases to be used to test the hypothesis. This is a matter of judgement in particular studies for, obviously, too few cases limit the value of the conclusions for generalizing or predicting, and too many cases simply become unmanageable and even repetitious (Trethewey, 1976, p.104).

According to this approach, samples for a comparative study may be global, regional (at both multinational and intra-national levels), or cross-temporal.

(v) *Data Collection*

The researcher is expected, at this stage, to address such issues as the procedures for collecting data as well as the representativeness, sufficiency and reliability of the data collected. In proposing this method, and cognisant of the peculiar problems to comparative studies which largely spring from their comparative dimension, Noah and Eckstein expected that in collecting data, most researchers would be working within the limits of what is available.

(vi) *Manipulation of Data (Treatment)*

This stage is aimed at establishing the criteria to be satisfied before the hypothesis can be sustained or rejected.

(vii) *Interpretation of Results*

This final step entails a review of conclusions and processes of reaching them. Further, implications of the findings for existing knowledge and theory, for further questions or studies, as well as for policy decisions are considered.

Noah and Eckstein's defence of their so called scientific approach may be summed up in their assertion that a "method which incorporates the intuitive insights and speculative reflections of the observer, while at the same time submitting them to systematic, empirical testing appeared to offer the best hope for comparative education" (Noah and Eckstein, 1969, p.191).

Noah and Eckstein therefore made a concise attempt to propose a scientific approach to the study of comparative education. However, one of the major weaknesses of their approach lies in their apparent assumption that all problems can be stated as hypotheses. While this assumption may be largely true, it is not exclusively so. Some research problems, especially in social sciences, cannot be easily stated as hypotheses, and in such cases, they are simply stated as research questions. Further, unlike most approaches whose proponents appreciate the fact that comparative education methodology will largely depend on the purpose of or the problem for the study, Noah and Eckstein tend to prescribe a rather rigid approach. This can create some problems because as it is known, while empirical methods are widely accepted as being effective in the natural sciences, their wholesale applicability in social science studies is questionable, especially by the fact that some variables such as values and attitudes are not easily quantifiable. But even if they were, depending on how they are operationalized, the issue still remains of how far from reality one moves in an attempt to make them measurable. In certain studies, qualitative methods such as ethnography would be preferred.

While the research approaches analysed above may be seen as having been major landmarks in the search (by scholars) for a "method" of comparative education as an academic field, they never led to any consensus. Rather, they reinforced debates on the purpose and method of comparative education. One significant contribution to such debates is by Kelly *et al* (1982), who provided a critical analysis of trends in Comparative education up to the early 1980's. In the analysis, Kelly *et al* contrast comparative education with fields such as history, sociology, economics and sociology whose subject matter and methodology are well defined and argue that: "because of the field's broad and diverse clientele, comparative education has remained largely eclectic and has failed to develop one single widely accepted method of reporting and a unitary body of knowledge over 30 years of its existence" (Kelly et al, 1982, p.505). According to Kelly *et al*, there were four major identifiable features or trends that had characterised the post Noah and Ecksteins' (1969) period: the abandonment of cross-national comparison as the defining parameter of the field; abandonment of the search for a single methodology of study; the drive to build general laws about interrelationship between school and society was maintained; and the emergence, and later the challenge to modernization theory as a theoretical framework informing research in comparative education.

The emergence of the modernization framework, it is argued, heralded an era of educational "Lending" rather than "borrowing". The key shift was that while traditionally comparative education as a field had been largely oriented toward the study of foreign educational systems as a means of educational reform, the modernization framework saw a drive to "export" educational reforms to other countries on the basis of past success in donor countries or what was perceived as logical prescriptions flowing from modernization theory (Kelly, et al, 1982, p. 516). The relation of education to socio-economic development and modernization constituted the focus of comparative education, while a key feature of studies conceptualised within the modernization framework was emphasis on generalizability of findings, and quantifiable data that would withstand rigorous tests of validity, reliability and objectivity (Ibid, p.517). In essence, this was a re-emphasis on the advocacy of a scientific method for the study of comparative education, which had been fronted by Noah and Eckstein (1969). Kelly *et al* observe, without citing specific cases, that the systematic planning of education as well as many policies that had been predicated on findings of correlational studies conceptualized within the modernization framework did not "pay off". As a result, they contend, there was

growing skepticism and eventual rejection of modernization as a conceptual framework for comparative education studies, and a return by many comparative educationists to "their roots in education" (Ibid, p.518). As a way of concluding their analysis, Kelly *et al* portray comparative education, in the 1980's, as a field that was not only still characterised by a search for self-identity and appropriate methodologies, but also one that had witnessed a relative convergence in purpose: attempts of contributing to informed domestic and foreign education policy.

Watson (1994) made a further contribution to the methodological debates of comparative education. Unlike the previous contributors, Watson sought to illustrate the positive contributions and abuses of comparative education to the study of vocational education and training. However, his discussions did not constitute what can be regarded as major shifts from his predecessors in the debate. For instance, he noted that one of the regrettable methodological fallacies of comparative education had been the assumption that what works in one country would work equally well in another, thereby simply reiterating what many other scholars discussed earlier had asserted. However, the significance of Watson's contribution relates to the fact that he highlighted four methodological difficulties that one may encounter in carrying out a comparative research: ethnographic bias, which entails the failure to recognise that education systems are context specific, and that the underlying philosophy and assumptions in one context might be substantially different from another; generalizations - the drawing of general conclusions from particular situations; terminology, where two different things are compared rather than "like" with "like"; and reliability of official data bases used such as UNESCO, ILO and World Bank - such data tend to ignore human and cultural dimensions of societies and overlook regional variations, urban/rural, as well as ethnic and gender disparities. A key weakness of Watson's contribution, however, is that he merely articulated *what* should be done in comparative education research but offered no specific suggestions on *how* it should be done.

Rust *et al* (1999) undertook a comprehensive review of research methodologies in comparative education, as reflected by studies published, between 1955 - 1995, in three journals: *Comparative Education Review*; *Comparative Education*; and *International Journal of Educational Development*. They argued that in the 1970's and 1980's, although the various

conflict theorists (Feminism, Marxism etc) successfully challenged the so-called equilibrium paradigm (Structural-functionalism) that had, until then characterised the field, their discussion failed to raise fundamental considerations regarding research methods, largely because the critical theorists were more concerned with theory than research methodology (Rust *et al* 1999, p. 87). Further, Rust et al observed that while some new developments such as the entry of certain theoretical, ideological, and disciplinary orientations (including post structural theories and post-modern theories) in the comparative education discourse had enriched the field, their influence on research methodology was unclear (Ibid, p.88). Although they concluded that comparative education as a field is still methodologically fragmented and pluralistic, and that strategies for data collection and analysis were largely dependent on the specific purpose that a study was to fulfill, they acknowledged that *literature reviews* and *comparative research* were the two "most popular" strategies[5] among comparative education researchers.

Comparative Approaches: An Overview

A few general observations are made from this brief review of the various approaches to, and debates on comparative education research.

Firstly, a comparative study in education should begin by a clear identification of a problem or issue which is common or whose significance extends beyond national boundaries, so as to allow a cross-national or cross cultural comparison and an eventual generalization of research findings to be made.

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[5] Based on content analysis of comparative studies published in the three journals over the period 1955 - 1995, Rust et al classified them into nine categories: theoretical or conceptual studies; experimental studies; existing-data search; literature reviews of contemporary conditions; historical studies; comparative research studies; project evaluations; content-analysis studies; and field research studies. According to this classification, literature reviews are studies based on are based on secondary literature and are therefore characterised mainly as interpretive essays based on a discrete body of literature. On the other hand, comparative research studies are those studies which investigate educational issues and conditions that exist in more than one national educational system, in a region that encompasses a number of national educational systems, in an entire continent, or in the world. (studies that analyse different time periods in a single system of education are not defined here as comparative but as historical). Field research studies were those that were based on field work.

Secondly, while it is generally agreed that comparative education should help solve educational problems, it is equally observed that among the core problems of comparative methodology is that of establishing criteria for the selection of relevant data. Hence there is need to have clearly defined concepts (operationalized) so that similar meaning is attached to them by all concerned.

Third, it is generally agreed that all comparative studies should move beyond description to analysis and interpretation, and that among the approaches must be systematic attempts to establish a body of knowledge based on the observation of educational phenomena which will allow drawing of generalizations.

Fourth, comparative education has suffered an apparent identity crisis due, largely, to its eclecticism. This lack of consensus on methodology has been compounded by the fact that comparative education represents a field in which scholars from a wide variety of disciplines lay claim to expertise. The implication is clear : no single method can be prescribed as the "correct" method for comparative education research. The methods or approaches will largely depend on the purposes and character of specific studies. As Trethewey (1976, p.70) points out, "the question is not whether a particular approach is most acceptable, but which particular approach will produce the most valid answers to a particular set of questions".

Fifth, the entry of theoretical orientations such as feminism, marxism, post modernism and the like, have not invalidated empirical quantitative approaches to comparative education research, rather, they have provided an extension and variety of analytic tools for a comprehensive understanding of the relation between education and society. This relation may be examined at the level of the whole education system, or aspects of it.

While this study was generally informed by all of the above observations, the following specific adaptations, largely based on a combination of Holmes' Problem Solving Approach and Noah and Ecksteins' Social Science Approach, were employed:

(i) Problem identification and analysis, which are common to both approaches were adopted. However, the framework for the analysis of determinants was focussed

mainly on structural factors rather than ideological and miscellaneous factors, as defined by Holmes. This, as stated earlier, is due to the fact that ideological factors and miscellaneous factors such as climate and terrain, though important, were considered to be of little relevance in distorting major indicators under investigation in this study whose main focus is the efficiency and effectiveness of vocational training in the informal sector;

(ii) The formulation of research hypotheses as outlined in Noah and Ecksteins' approach, was adapted to this study by the formulation of a set of research questions; and

(iii) The selection of *reference* countries according to Holmes, or *cases* according to Noah and Eckstein, were adopted. However, while taking into consideration the usual assumptions guiding the above selection, *cases* for this study entailed a continental sample in which the selection of actual reference countries was based on the availability and accessibility of information or data to the researcher.

Summary

In this chapter, the background to, and statement of the problem have been outlined, and the purpose, justification, significance, delimitations and major assumptions of the study provided. It has been argued that the training component of the informal Jua Kali sector has attracted little attention from researchers and that as a result, vocational training policies for the development and growth of the sector were largely based on certain untested assumptions about the nature and characteristics of the sector. Accordingly, it has been shown that this study not only sought to subject such assumptions to an empirical examination based on primary data on the actual practice of informal apprenticeships in the Jua Kali sector, but to also make a cross-national comparative analysis of training and related characteristics of the informal sector in selected countries.

A discussion of the conceptual framework within which the study was located has been made. In particular, the major assumptions of Human Capital theory, with specific reference to the

assessment of cost-effectiveness, as well as different approaches to Comparative Education research have been explored, and the specific approach adopted for this study clarified. For instance, while some of the criticisms to Human Capital theory have been highlighted, the overall conclusion made is that such criticisms neither disprove central assumptions of Human Capital theory, nor point to real methodological flaws in studies conceptualized within the human capital framework. Instead, it is argued that given some unique characteristics of Kenya's informal Jua Kali sector, and since such criticisms essentially advocate for a broader concept of efficiency and effectiveness, they actually strengthen rather than weaken the approach adopted in the operationalization of key variables and analysis of informal sector characteristics.

In the next chapter, a review of relevant literature is made.

CHAPTER 2

REVIEW OF LITERATURE

CHAPTER 2

Introduction

There is an abundance of literature on vocational education and training, most of which addresses three major aspects: the rationale for its provision; the mode of provision; and the assessment of its impact. For most of this literature, however, the focus has been the formal institutional or apprenticeship training (Foster, 1965, 1987; Fuller,1976; Kraak,1991; Psacharopoulos and Loxely, 1985; Sifuna, 1992; and Caillods, 1994). Informal sector activities generally, and skills formation within the sector specifically, have received comparatively little attention from researchers. This should not be surprising as it was only in the 1970s that the concept "informal sector" first emerged, and specifically in 1972 that it received official attention by the International Labour Organization's Employment Mission to Kenya (ILO,1972). However, the informal sector does not operate and develop in a vacuum: it is intricately interwoven with various formal aspects of a nation's socio-economic system. Accordingly, many of the studies on vocational education and training in the formal education system, as shown in this chapter, also shed some light on aspects of skills acquisition in the informal sector

The specific intent of this chapter is threefold: first, to examine the rationale for the provision of vocational education and training and explore the debate for and against the various modes of its provision; second, to make a critical review of literature on Kenya's informal Jua Kali sector, with specific emphasis on identifying the structural and social characteristics of the sector (assumed or empirically constructed) as well as the policies governing its operation and development; and third, to examine the training and related characteristics of the informal sector of other African countries, with a view to identifying general trends (if any) in access to skills training, quality of the sector's skilled workforce, and the relative contribution of the different modes of training to the informal sector's skilled workforce, among others. Accordingly, this chapter is organized into three sections each dealing with one of the three themes (intents) stated above.

The central purpose of this study, as has already been stated, was to assess the relevance, efficiency and cost-effectiveness of the informal Jua Kali sector as a mode of vocational training. However, the relevance, efficiency and cost-effectiveness of this sector cannot be assessed in isolation from other modes of training. Rather, they can best be understood and judged within a broad context of debates focussing on rationale for the provision of vocational education and training. Such debates not only provide us with a broad picture of the political, social, economic and structural contexts within which vocational education and training either thrives or is inhibited, but also shed light on the general principles upon which policy decisions on investment in vocational education and training are predicated. However, since most of such debates largely draw on experiences of the formal sector, they tell us little about specific and unique variables that may be associated with the Jua Kali sector. A critical analysis of literature on the informal Jua Kali sector therefore fills this gap: it illuminates the strategies and policies that have been adopted for the development of the sector, isolates the major assumptions underlying such policy and relates these policies and strategies to the broad contexts of vocational education and training, in the assessment of relevance, efficiency and cost-effectiveness. The other purpose of this study, was to contribute to informed policy for skills development in the informal sector. A review of literature on skills training in other African countries was vital in providing comparative data on certain variables which are central to the basic argument in this study. The three sections of literature review that constitute this chapter, are therefore conceptually interlinked.

Rationale for Providing Vocational Education and Training

The provision of vocational education and training has been and continues to be a key concern to governments of both developed and developing countries. In Britain, for instance, there has been intense debate on the Technical and Vocational Education Initiative (TVEI), in Germany the Dual System which combines vocational instruction at institutions and apprenticeship training in industries has been in the limelight, while in Kenya there is the ongoing debate on reforming the vocationalized 8-4-4 education system. The support for vocational and technical education programmes by international donor agencies such as the World Bank, International Monetary Fund (IMF) and the ILO in particular, as reflected in their direct funding as well as

research and publications (King, 1991), is a further reflection of the concern for vocationalism. However, while there appears to have been some general consensus among providers on the usefulness of vocational education and training, the actual delivery, particularly in Africa, has been met by incidences of enthusiasm, suspicion, resistance and rejection by cousumers, at various points in history. There are four major factors upon which the provision of vocational education and training has either been justified or questioned: the ideological factor; the relevance factor; the social equity factor; and the industrialization and self-employment factor. Eacb of these factors is examined below.

The Ideological factor

The advocacy or rejection of vocational education and training on ideological grounds may be explained in terms of the disjuncture between the expressed intent of the providers and the perceived intent by the recipients and critics. In this context, conflict between the two parties is inevitable. As a way of illustrating this ideological factor, a brief historical and contemporary overview of the rationale for the provision of vocational education and training would suffice.

Some form of vocational or "practical" curriculum was offered to Africans by the colonial regimes in most African countries. The need for such education for the "natives" was emphasized by the Phelps Stokes Commission of 1922. Such emphasis was predicated upon two ideological factors: the presumed intellectual inferiority among Africans and the need to instill the virtue for work among them.

However, mainly manual rather than technical skills constituted such curricula. In Kenya, for instance, some kind of technical education with hand tools, needed for the agricultural sector mainly, was offered to Africans by the colonial government. However, it was strongly resisted by the Africans who felt it was "designed to hamper their political advancement ... and closed doors on them for any hopes of obtaining clerical or white collar jobs" (Sifuna, 1982, p.17). Thus in colonial Africa, the emphasis on vocational education was perceived by Africans as having a hidden agenda: to provide cheap labour for white settlers; establisb, sustain and promote a culture of white supremacy against black inferiority; and suppress political

sensitivity among Africans by denying them an academic oriented curriculum. Despite the fact that on the eve of their independence, many African countries had some significant elements of practical education, especially in their primary curricula, the perceived colonial legacy led to their immediate de-emphasis. This is clearly illustrated by King (1991) who points out that:

> In most cases, these "colonial curricula" were abandoned at independence, from the Gambia, to Kenya, to Tanzania, to Zimbabwe, partly because of the pressure of expansion, and partly because they were loosely identified with the notion of a different future for Africans than Europeans (King. 1991, p.61).

The apparent use of vocational education as an ideological tool for the manipulation and control of certain sections of society does not seem to be limited to colonial Africa. It has been argued, for instance, that the implementation of the Youth Training Schemes (YTS) and The Technical and Vocational Education Initiative (TVEI) as two forms of the British Vocationalism, in effect embraced ideological preparation of the youth, as one of its main features. This is because it effectively narrowed the learning experience down to the attainment of a set of employer-defined skills, thereby constituting an attack on the previous broad curriculum which promoted a balanced understanding of society, and a capacity for critical reflectiveness or autonomous judgement (Kraak, 1991). Moreover, according to Kraak (1991, p.416), skills formation in apartheid South Africa largely entailed the development of certain ideological attributes and had little to do with new technical requirements. In this respect, he argues, vocationalism in apartheid South Africa had a great resemblance to the new vocationalism experienced in Britain in recent years.

It is therefore clear from this brief analysis that while the development of employable skills has constituted one of the major justifications for the provision of vocational education and training, it has also been the major rationale for the rejection or suspicions of this type of education by both recipients and critics, who view such skills as being an ideological tool for containment by the establishment, rather than an avenue for personal social and economic advancement. More importantly, the ideological factor in advocating or resisting vocational education and training has been two dimensional: an ideology of second-class education for Africans, exemplified by the apartheid system in South Africa and colonialism in the rest of Africa; and an ideology mobilised for socialist education in Africa, exemplified by education with-production in its Zimbabwean iteration and in Tanzania's self-reliance campaign.

Although it was partly due to the quest for relevance, that at independence, most African countries de-emphasized vocational education in favour of academic oriented education, the massive expansion of the school system and the resultant high rate of school leaver output that followed soon posed serious problems, in a number of African countries such as Kenya, Tanzania, Ghana, Nigeria and Zambia. In all cases, the supply of labour, in form of school-leavers, soon outstripped the job opportunities (especially white collar) available in the formal public and private sectors. This led to rising rates of unemployment among the youth. The education systems, in respective countries, were then accused of being irrelevant: producing school-leavers with no marketable skills. In Kenya, the government identified three major causes of school-leaver unemployment: a lag between school leaver output and the number of jobs requiring their skills; explosive, unrealistic aspirations among school-leavers for higher job placements; and inappropriate skills (or lack of them) for medium range jobs (Kenya, 1979, p.38). Clearly, school-leaver unemployment was not only being blamed on the failure of schools to impart relevant skills to the youth, but also for the unrealistic occupational attitudes and aspirations that general education supposedly developed among them.

As a response to this trend of school-leaver unemployment, there has been a sustained emphasis, by individual governments as well as international donor agencies, on the provision of vocational education and training. This emphasis is based on two major assumptions generally held about the potential outcomes of vocational education and training. The first assumption is that vocational education and training provides a more realistic link between education and employment, by developing a pool of youth with relevant knowledge and skills required by industry and business than does general education. The second assumption is that vocational education and training develops, among the youth, occupational attitudes, aspirations and other characteristics that are consistent with, and relevant to, the local socio-economic conditions and the underlying opportunities. This belief in the potential contributions of vocational education and training in enhancing employment opportunities of school-leavers and re orientating their occupational aspirations and attitudes, especially when provided within the formal school system, has been challenged by several studies. In one such

study by Sifuna (1982), whose main purpose was to examine the rationale of the government's heavy investment in the expansion and formalisation of technical secondary education as a way of combatting school leaver unemployment in Kenya, three key findings emerged:

(i) Technical secondary school graduates were found to face unemployment problems largely similar to those faced by graduates from the academic schools;

(ii) Multinational companies were reluctant to employ technical secondary school graduates for they considered them to be relatively expensive; and

(iii) A substantial number of technical secondary school students did not intend to pursue technical careers, while those who intended to had very high aspirations: to become elitist engineers rather than technicians or artisans.

As it has already been discussed in chapter one of this study, Psacharopoulos and Loxley (1985) who, in a longitudinal tracer study, investigated the employment experiences of graduates of the diversified secondary school curriculum in Tanzania and Columbia, made largely similar observations: that graduates of vocational tracks neither earned more, nor got better jobs, nor did they prove more likely to enter into specialised technical areas of the labour market than the graduates of the academic tracks. Moreover, graduates of the vocational tracks had high aspirations for further education and training. Other studies that have examined career aspirations and employment opportunities of vocational trainees or graduates, and reported similar findings include: Barasa (1989); Neuman and Ziderman (1989); and Cantor (1989). These studies were carried out in Kenya, Israel and the USA, respectively. One of the major observations resulting from Cantor's study in particular is reflected in the remark that "As we have seen, most secondary school programmes in United States are ineffective in increasing either the earnings or the employment prospects of students"(Cantor, 1989, p.131).

The expected impact of findings emerging from such studies would naturally be a gradual weakening of the belief in the relevance of vocational education and training on the basis of assumptions about its potential contributions discussed above, and an affirmation of the value

of general education. However, it may be argued that such studies do not, in the main, question the relevance of vocational education *per se* but the mode of its vocation.

The Social Equity Factor

A major rationale for the provision of vocational education and training has been the equity consideration. The equity factor is closely related to the belief that this type of education considerably improves the employment and income opportunities of individuals. A public provision of vocational education and training which ensures an equitable access to training opportunities by the various groups (socio-economic, gender and ethnic) therefore, it is argued, would open access to the income earning opportunities, and lead to the distribution of income/wealth and economic growth (Middleton, 1991; Carnoy, 1994).

The equity rationale for the provision of vocational education and training may not only be viewed in terms of the distribution of income opportunities, but also a strategy for inclusion through the creation of alternative routes for upward mobility, especially for low academic achievers and those from disadvantaged socio-economic backgrounds. The National Qualification Framework (NQF)[6] recently introduced in South Africa, with emphasis on flexibility and portability of programmes, is a good illustration. Indeed, some vocational institutions, programmes or tracks in certain countries are known to have been either directly designed or implicitly popularised to cater for those who are variously defined as school dropouts or academically incompetent. Relevant examples are the Youth Polytechnics and Technical Training Institutes in Kenya, the Brigade Schools in Botswana and, to some extent, the British New Vocationalism one of whose major features, as has been observed, is that "... its boundaries are specific, being intended for the 14 to 18 age group, and being *aimed* [emphasis mine] much more at the lower two-thirds of the ability range than those who take the more traditional academic curriculum" (Pollard, 1988, p.5).

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[6] See Isaacman, Jeannette (1996) *Understanding the National Qualifications Framework*. Johannesburg: Heinemann Educational Publishers.

Although most studies have shown that vocational training programs, especially when provided in public institutions, tend to embrace many youth from socio-economically disadvantaged backgrounds, there is little evidence to sustain the justification of providing such programmes on the basis of promoting gender equity. Vocational programmes that offer competitive skills required in industry and business are usually male dominated (Vale Souza, 1988; Oketch, 1995; Boeh Ocansey, 1995; D'Souza and Thomas, 1995). A further criticism to the equity rationale for the provision of vocational education and training is that, given that it demands relatively high investments in form of machinery and a skilled, competitively-paid workforce in form of teachers, both of which most governments in developing countries can ill-afford, it offers a limited access. Accordingly, it is argued that within the formal school system, a more rational approach would be to invest available resources in general education which is cheaper but offers comparable or even better returns than vocational education (Middleton, 1991, p.9).

The Industrialisation and the Self-employment Factors

The provision of vocational education and training has sometimes been justified as one of the important strategies for a country's industrialisation (Bennell, 1991; Gospel, 1991; Kenya, 1996). Such justification rests on the assumption that there exists a catalytic relationship between vocational training and industrialisation. In such a relationship, vocational training is seen to activate or speed up the process of industrialisation by ensuring an efficient supply of a skilled workforce. This type of thinking is commonly reflected among official government policy documents, of countries aspiring for industrial transformation, rather than in academic circles. Those who argue against such a premise insist that the provision of a good general education within the formal school system, which develops an individual's mathematical, scientific, comprehension and communication skills, knowledge and attitudes, is the right strategy for industrialisation (Psacharopoulos, 1991).

As it has been argued, the declining white collar job opportunities against a soaring rate of school-leaver output arguably led to the questioning of the relevance of academic oriented education, and a subsequent re-emphasis on vocational education and training. Likewise, it may be argued that a general decline in job opportunities in the formal public and private

sectors, against an increasing rate of vocational and general school-leaver output, has led to a shift from a general emphasis on vocational education and training for employment, to a specific emphasis on vocational education and training for self-employment. In this respect, the relevance of education is not just perceived in terms of the development of attitudes, knowledge and skills that would be marketable in the modern sector, but that would enable one to be self-employed especially in the informal sector. Accordingly, the provision of vocational education and training is then justified on the assumption that it will produce flexible individuals who may be salaried employees or self-employed. This justification is particularly notable in countries where the informal sector is fairly developed, such as Kenya, Nigeria, Senegal, Togo and India.

It is evident from the foregoing analysis that the four factors upon which the advocacy or rejection of vocational education and training has been based, has not only revolved around the question of whether to provide it or not but also the appropriate mode of provision. The latter is the focus of the discussion that follows below.

The Mode of Providing Vocational Education and Training

While the debate over the provision of vocational education and training has largely revolved around ideological and social factors, that over the mode of provision has revolved around structural and economic factors. Structurally, questions have been raised whether vocational education and training should be located within the formal school system, in specialised post school institutions, or at enterprises. Economic concerns have focussed on the comparative costs and benefits that should guide the choice of any, or rejection of all, of the three modes of provision. However, much of the research and debate that have been documented offer challenges to, rather than support for, the rationale of providing vocational education and training within the formal school system. One of the key challenges to vocationalization of the school system was first offered by Foster (1965) in his work *The Vocational School Fallacy*, in which he argued that while governments advocated vocational education and training, the pupils and parents rejected it in favour of academic schooling which provided greater career opportunities and higher financial returns. Over twenty years later, he echoed

the same sentiments when, in reference to technical/vocational education in developing countries, he observed:

> The relatively high costs [of vocational education] ... are not justified in terms of major cognitive or affective curricular effects, nor is there any compelling evidence with respect to positive labour market outcomes, whether they are measured in terms of destinations or incomes (Foster, 1987, p.138).

According to Psacharopoulos (1991), four factors, among others, that account for the failure of vocational education and training programmes are:

(i) The programmes are regarded as inferior to the academic route by most families;

(ii) The suitability of such programmes, to prepare students for labour markets which are highly unpredictable, cannot be sustained;

(iii) Rather than being driven by public or stakeholder demand, the initiative for the expansion of such programmes has usually been government driven; and

(iv) While such programmes understandably require professionally competent teachers, they have largely been run by teachers who are either inadequately trained or not at all.

Accordingly, in the above study, Psacharopoulus argued that vocational education and training should be divorced from rather than be introduced at secondary school level generally, and primary school level particularly. Instead, he recommended that such programmes should be offered at specialised post school institutions, which should ensure a close linkage between themselves, the employment needs and the changing labour markets (Psacharopoulos, 1991, p.198).

A further challenge to the rationale of advocating the formal school system as a mode of vocational education and training was provided by Sifuna (1992). In a study that examined the rationale for vocationalizing the primary and secondary school curricula, through Kenya's 8-4-4 system of education that had been introduced in 1985, Sifuna identified four key factors

that militated against the successful implementation of the programme: lack of basic resources; poor teaching; under-qualified teachers; and lack of parental support. His emphatic recommendation was:

> Although schools were expected to impart some useful occupational skills through the teaching of pre-vocational subjects, they are certainly not the right institutions for such training in depth. The main task of schools is to prepare pupils for post school occupational training although they may expose pupils to pre-vocational skills (Sifuna, 1992, p.144).

According to Watson (1994), apart from institutional capacity, economic considerations and parental rejection discussed above, two other factors account for the general failure of particularly school-based vocational education and training programmes:

(i) A disregard, by governments, for indigenous cultures, local employment opportunities and the reality of the local environment, due mainly to influences of multinational agencies;

(ii) The dependency culture, as manifested through overseas training, course evaluations and assessments, as well as the use of expatriate staff/western equipment/machinery. This has prevented the development of indigenous programmes except where intermediate technology or self-help programmes have prevailed (Watson, 1994, p.92).

There appears to be few similar studies available that have provided contradictory evidence to those discussed above. One such study was carried out by Ziderman (1989) in Israel. Ziderman carried out a longitudinal tracer study of graduates from four modes of vocational training: vocational secondary school; traditional apprenticeship; factory based industrial school; and year-long Ministry of Labour teenage course. In the study, earnings of 1,233 former trainees of the three modes were monitored over a seven year period. The major finding was that there were no significant differences between the earnings of the graduates of the different modes for the period under consideration. This was an apparent demonstration that individuals terminating formal education at a vocational secondary school did not differ

from (and clearly did not fall short of) those from other training modes. However, rather than affirm the relevance of school-based vocational training, Ziderman asserted the need to divorce vocational training from the school system by observing that "the vast majority of skilled workers [in Israel] are trained in relatively expensive vocational secondary schools that, perhaps surprisingly, offer no earning advantages even in the longer term) over cheaper, work-related training programmes" (Ziderman, 1989, p.254).

On the grounds of cost-effectiveness, Ziderman argued, the above findings indicated the desirability of a redirection at the margin of the skilled manual trades in Israel, away from vocational schools (principally the lower track) toward non formal, job-related training modes. However, he cautioned that in doing so, the wider social and educational goals of vocational education had to be considered carefully.

Although most of the studies considered above provided empirical evidence and convincing arguments against the suitability of the formal school system as a mode of vocational education and training, and recommended instead that it be offered at specialised post school institutions, none of them provided proof that such institutions would provide redress to the perceived inadequacies of the vocational school system. Moreover, recommendations that specialised post school institutions be responsible for the provision of vocational education and training, rested on the assumptions that such institutions would attract and retain qualified and competent teachers, be responsive to labour market demands by establishing and maintaining close links between themselves and industry, and being presumably fewer and serving essentially interested clientele, they would be well-resourced and more cost-effective.

However, as it has already been shown in chapter one, there has been consensus among most reported studies that have compared the two modes of post school vocational education and training, that the enterprise based mode of training is more cost effective than the pre employment institutional-based mode (Fuller, 1976; Borus, 1977). This observation seems to be applicable across nations, as Fuller's study was based in India while Borus based his study in Israel, but both arrived at similar conclusions. Moreover, in Zimbabwe, Bennel (1993) assessed the relative cost-effectiveness of three alternative modes of vocational training: formal craft apprenticeship; school-based; and institutional pre-employment. Like

Borus, his approach entailed a comparison of the various graduates' post training job performance with training costs, using individual pre-tax income as the key indicator of job performance and overall social benefits. The findings were largely similar to those discussed above: there were minimum unemployment rates among enterprise-based craft apprentices but considerably high ones among other modes; craft apprentices earned three to four times more than those of other training modes; and craft apprenticeship was considerably more cost-effective than the other modes, due to high internal and external efficiencies. In contrast, "school-based and institutional pre-employment artisan training in Zimbabwe were less efficient, both internally in relation to the process of training itself and externally in relation to employment outcomes" (Bennel, 1993, p.448). Further, in a *World Bank Policy Paper* for vocational and technical education and training, it was observed that "much public pre-employment training is isolated from market forces and rigidly administered. These factors contribute to low levels of job placement for graduates" (Middleton, 1991, p.13). In this Policy Paper, the World Bank suggested that public pre-employment training should only be used in special circumstances such as where employer training capacity was underdeveloped, or where economic restructuring and the resultant displacement of labour may demand occupational change and skills retraining.

Clearly, many studies and debates are clearly in favour of locating vocational education and training at enterprises rather than the institutional pre-employment mode. As has been shown, two key concerns among advocates of the enterprise-based mode of vocational education and training are relevance and cost-effectiveness. Among studies that subscribe to this view, two major methodological assumptions are identifiable: that one criterion of relevance of training is increased productivity; and that individual income is a valid measure of productivity. Accordingly, the preferred mode of vocational education and training would be one whose graduates were more readily absorbed into productive employment and, with higher individual returns in the form of increased income. While such studies have provided useful ways of conceptualizing relevance and measuring cost-effectiveness in economic terms, they have largely failed to embrace pedagogic and some other non quantifiable indicators in their justification for the preference of the enterprise-based mode over the others.

However, enterprise-based training may take two forms: formal apprenticeship in the modern sector; and informal apprenticeship in the informal sector. The former has received much attention from researchers and is the basis upon which most assertions about the relevance and cost-effectiveness of enterprise-based training have been made. The latter, as has been pointed out previously, has attracted relatively little attention. But what is known about the nature and characteristics of apprenticeship training in the informal sector generally, and Kenya's informal Jua Kali sector particularly? What about questions of relevance and cost-effectiveness which, as discussed above, have been key considerations in the drive for enterprise-based vocational training? The next section attempts to address these issues.

The Informal Jua Kali Sector in Kenya: A Review of Relevant Studies

There are few reported studies on Kenya's informal Jua Kali sector which focus on skills acquisition or training, especially in skilled occupations. Most of the authors have tended to examine the nature and relevance of skills acquired at formal sector institutions *for* the informal sector, rather than skill formation *within* the informal sector itself. However, there are some key works that have either directly addressed or indirectly influenced skills formation in the informal Jua Kali sector. In this section, each of those works as well as official policy documents that have, in certain ways, influenced and shaped the growth and development of the sector, are reviewed.

The first major reported work on Kenya's informal sector emerged as the ILO (1972) publication: *Employment, Incomes and Equity: A strategy for Increasing Productive Employment in Kenya*. This ILO report formed part of the recommendations of a World Employment Mission, and forms the basis for crediting Kenya as the first country where the concept of the informal sector was originally developed (King, 1996, p.xiv). The Employment Mission noted the potential of the informal sector, identified what it perceived as major distinguishing characteristics of the sector, and made certain policy recommendations for promoting its growth and development. Further, the Employment Mission noted that the process of economic transformation and growth in Kenya had been marked by growing inequalities in the distribution of wealth and income among Africans, but rejected the usual

traditional-modern division of the economy as an explanation. In such explanation, it was argued, the westernized modern sector was depicted as the source of dynamism and change while the traditional sector slowly withered away. Specifically, the Employment Mission noted:

> This view does not correspond to the reality of Kenya; we reject it for that reason, and because it ignores the dynamism and progressive elements indigenous to the Kenyan economy. We have considerable evidence to refute a view that attributes the sources of economic and social change almost exclusively to outside forces (ILO, 1972, p.503).

The Employment Mission identified the following as key distinguishing characteristics of the informal sector:

(i) It operated largely outside government benefits and regulation;

(ii) It neither had direct access to formal credit institutions nor to main sources of foreign technology;

(iii) It was a low-income sector, characterised by the majority poor;

(iv) It mainly employed labour-intensive techniques of production; and

(v) Many of its agents operated illegally, especially while pursuing activities similar to those of the formal sector.

These characteristics were contrasted with those of the formal sector which, apart from having characteristics largely opposite to those stated above, also enjoyed protection from competition, privileged access to resources and favourable access to locations from government. However, while most of these characteristics were true at that time, recent political, economic and technological changes have rendered many of them inapplicable. The recent liberalisation of the Kenyan economy, for instance, has left very little room for the direct protection of formal sector enterprises by government.

One of the other key observations made by the Employment Mission was that while the urban informal sector was clearly a source of livelihood for many in Kenya, surprisingly little was known about it. In the absence of relevant facts and necessary data, subjective assumptions rather than an objective view of the sector, were prevalent. This is evident from the

Employment Mission's remarks that "government policy towards the urban informal sector has in our view contained too few elements of positive support and promotion, and too many elements of inaction, restriction and harassment" (ILO, 1972, p.226). This policy, it was argued, was based on three major assumptions:

(i) That persons in the urban informal sector were largely temporary inhabitants or occasional migrants, many of whom could be induced to return to rural areas;

(ii) That persons in the urban informal sector were unemployed or sporadically employed, contributing little to urban income, while constituting a significant health, fire and political hazard; and

(iii) That any attempt to improve living conditions in the urban informal sector would only induce additional migration, and might thus be self-defeating.

The Employment Mission carried out a statistical survey whose results discounted all of the above assumptions. Accordingly, it made four notable policy recommendations for the promotion of the urban informal sector: abandonment of irrational slum demolition; abolition of licencing, except for health related practices; encouragement of sub contracting and increased government purchases of informal sector products as well as services; and intensification of technical research and aid, aimed at improving techniques for the production of intermediate goods within the sector and strengthening linkages between the informal and agricultural sectors. The Employment Mission noted that the urban informal sector was not only providing employment but also contributing to skills development. In this regarded, it asserted:

> The informal sector is not a problem, but a source of Kenya's future growth. In addition, it is in its workshops that practical skills and entrepreneurial talents are being developed at low cost (ILO, 1972, p.505).

However, specific policy reforms that were proposed for improving education and training, mainly reflect what the ILO's prime concern was: raising productive employment and ensuring an easier transition from school to work, rather than developing the training

component of the informal sector. Arguably, apart from noting that skills development was occurring in the sector, the Employment Mission neither provided details on the nature or process of skills acquisition, nor empirical evidence of the numbers or characteristics of instructors and trainees involved. Moreover, given the plurality of activities and personnel in Kenya's informal sector, some of the generalisations made can tell us little about specific aspects of the sector. For purposes of this study, however, the most important observation is that the ILO Employment Mission:

(i) Highlighted the significant potential contribution of the informal sector to the national economy through employment generation and skills training;

(ii) Pointed to the inherent danger of policy interventions for the informal sector that are based on popular assumptions rather than relevant facts and objective data.

The second major published study on Kenya's informal sector appeared as *The African Artisan*, King (1977). The purpose of the study was an "...attempt to flesh out the people of the informal sector, and describe the actual process of skill acquisition among them" (King, 1977, p.vii). Unlike the multifaceted ILO study discussed above, King's study was more focussed, targeting the productive and manufacturing side of the informal sector. King acknowledged that there was a substantial training function attached to much of the productive and skilled areas of the sector, and alluded to the need for examining its various dimensions such as the internal structure, diffusion potential, attitudes and aspirations of its participants, as well as links with the more formal Indian and western production enterprises that were existing then. However, he cautioned against attempts to apply western labels to skilled workers in Kenya, without regard to their different contexts. His specific advice was:

> It is necessary to stress that this is not at present a rather uncommon event, but it is wisely and explicitly acknowledged by workers to be a way of becoming skilled. It is not therefore particularly useful to transfer to the Kenya context the standardized western job classification of unskilled, semi-skilled, skilled and professional, because this static picture distorts the widespread manipulation of the unskilled casual category to attain skilled status (King, 1977.p.49).

According to King, the Kenyan indigenous apprenticeship system had three main characteristics: payment of fees by apprentices to the masters, although this was either waived or amount reduced if there was some kinship or friendship relations; flexible period of training, largely depended on the trainee; and a culture of openness, where masters easily associated and identified the locations of their previous trainees. However, King notes that in pre-independence Kenya, Indian craft workers in building, tin, wood, steel, carpentry and many other skills restricted their craft expertise as far as possible to their community, although "...it became politically difficult at independence to stand for a policy of restriction, monopoly and limited access" (King, 1977, p.53). Nevertheless, skill formation among tinsmiths in post-independence Kenya, it is claimed, was predominantly male dominated and largely patterned along ethnic lines, as there had not been a great number of inter-ethnic training arrangements (King. 1977, p.148).

Results of a survey on the informal sector, comprising a sample of 150 candle makers (Tinsmiths) drawn from Nairobi, Embu, Eldoret, Thika and Machakos, are reported in the study. Only two (2.7%) of the 75 respondents whose relevant information was available had reached the secondary level of schooling, but both had dropped out of the system after completing only two of the required four years. The rest had attained primary schooling, but mostly lower primary. Accordingly, the study observed that most candle makers did not get the chance of continuing with their education for two major reasons: death of parents or inability to pay fees. For most of them, it was observed, the informal sector acted as an alternative route of upward mobility. Moreover, most artisans and their trainees had a "fierce determination not to be employed again [by state or whatever]" (King, 1977, p.55).

Overall, the major strengths of this study are that it offers a historical analysis of informal sector development in Kenya up to 1976, provides an in-depth case study of product development (candle making) among tinsmiths, and attempts to map out the nature of skills training and the socio-economic characteristics of artisans and trainees engaged in the sector. However, several weaknesses are evident in the study. Firstly, the study offers several fundamental observations and explanations about the informal sector, few of which are supported by objective data. For instance, while it makes assertions about ethnic and geographical considerations as playing some significant influences on the diffusion of skills

and reduction of competition within the sector, it offers little or no support in terms of statistical evidence. Even in the reported survey in which some artisans and trainees were interviewed, and from which some generalisations about the sector emerged, methodological issues such as sampling procedure and representativeness go begging, as they are not addressed. Secondly, and perhaps more importantly, some internal contradictions are evident. One such contradiction, as illustrated in the extracts below, is where the high quality of informal sector products and services is acknowledged while at the same time the mediocrity of the informal sector skills development programme and graduates is asserted.

> It could be argued that these very un-institutionalised garage schools [informal sector motor mechanics] offer a more relevant training experience than a handful of high cost technical and trade schools - or at least more relevant to spreading across the country rough and ready mechanics, who are used to operating without premises and sophisticated equipment (King, 1977, p.173).

> Cars that have been spray-painted or panel-beaten in a vacant lot [informal sector open-air workshop] only substantially differ from Indian garage workmanship [formal sector] in price (Ibid, p.56).

> Training in the informal sector is often product specific... the informal sector operator is not really a skilled craftsman at all, although we have ourselves used the word "skill" or "craft" loosely in discussing him; for he does not turn out a product where the quality of the finishing is crucial to the article. Rather, he is a rough and ready improvisor with a limited range of materials. On any skill spectrum in fact, he is probably nearer to the semi-skilled worker in a small factory or workshop than he is to the traditional craftsman (Ibid, p.200).

Oketch (1995) carried out a study, commissioned by the Overseas Development Administration (ODA), on education and training for the informal sector in Kenya. The specific objectives of the study were to: identify training initiatives that were being undertaken to support the informal sector; evaluate the relevance and effectiveness of each of those initiatives in providing the necessary skills for paid or self-employment in the informal sector; and make some long term suggestions for increasing entrepreneurial and employment capacity of the informal sector. A review of literature (mainly from secondary sources of data) and collection of primary data from five groups or projects which, according to the researcher, were involved in the provision of education and training to certain informal sector operators, constituted the methodology for the study.

According to Oketch (1995), there were three categories of training initiatives being undertaken to support the informal sector: formal school system, especially the vocationalized 8-4-4 primary school component; post school vocational and technical training institutions; and direct agency interventions in the sector. Drawing largely from Sifuna (1975), Kerre (1987), Owano (1988), House et al (1990) and Shiundu (1991), Oketch argued that the 8-4-4 system had largely failed to adequately address the training needs of the informal sector. The failure was attributed to: poor planning and high costs of implementation; negative attitudes of teachers and pupils towards practical subjects; a curriculum that was too broad in relation to the allocated time frame; and the examination system that undermined vocational subjects by laying emphasis on academic subjects. The post school vocational training institutions such as Youth Polytechnics (YPs), Technical Training Institutes (TTIs) and Harambee Institutes of Technology (HITs), which constituted the second category of training initiatives for the informal sector, seemed to have also largely failed. Although the production of individuals who would be self-employed was one of the original objectives for all of these institutions, it was observed that in 1981only 23 percent of the YP graduates got into self-employment (Caplen, 1981), while generally less than 10 percent of the HIT graduates got self-employed because "the skills obtained from these institutes [HITs] are capital intensive and thus the graduates require large amounts of capital to be able to start their own businesses" (Oketch, 1995, p.70).

Direct interventions by various agencies, as the third training initiative for the informal sector, according to Oketch, took various forms. The Ministry of Technical Training and Applied Technology in collaboration with the ILO, for instance, implemented the Entrepreneurship Education Project (EEP) in 1990, whose objective was to introduce entrepreneurship to all students enrolled in the technical training institutes. In addition, the project was also meant to give existing small scale businessmen some training in practical business skills, and as it was reported, the ministry through the Provincial Training Officers, also conducted periodic training for Jua Kali artisans and businessmen. Much of the training was said to involve business management skills, methods of book-keeping and entrepreneurship creativity, as well as visits to enterprises during which practical on the job tips were offered to entrepreneurs (Oketch, 1995, p.75). Further, according to Oketch, there were 29 projects and programmes involved in education, training and entrepreneurship for the informal sector in 1993, only four

of which were managed by government and the rest by NGOs. A case study on five of the ten projects located in Nairobi (Kenya's Capital), which aimed at establishing the activities and strategies of the projects, sources and amounts of support per year, the number of clients trained each year, the number of those who had started their own businesses, and the constraints faced by the projects, was reported. The projects and programmes covered in the case study were: Appropriate Technology for Entreprise Creation (ApproTEC); Voluntary Services Overseas (VSO/Kenya); Assistance in Technical and Entrepreneurship Skills for Jua Kali Women; Entrepreneurship Education Project (EEP); and Redeemed Gospel Church Inc. All the projects were established between 1983 and 1991.

Although the five projects and programmes were considered as training initiatives for the informal sector, their activities as described and analysed by Oketch (1995), reflected a high concentration and focus on formal sector institutions such as Youth Polytechnics and Harambee Institutes of Technology. They were said to be involved in activities such as curriculum development, market research, appropriate technology design and manufacture of machine tools. Moreover, most of them tended to address entrepreneurial rather than technological skill requirements, and their criteria for choice of participants excluded many potential beneficiaries. It was reported, for instance, that some of the projects were involved in "... conducting training of trainers in entrepreneurship education institutions, conducting awareness forums for policy makers, conducting post graduate entrepreneurship education programmes, establishing small business centres in Technical Training Institutes, and backing the Ministry in implementing EEPs" (Oketch, 1995, p.85), while others dealt with entrepreneurs who were able to raise between twenty thousand and one hundred thousand Kenya Shillings, and preferred retired civil servants or people who had been running their own business for some time. Moreover, for all the five projects and programmes, there had not been any attempt to evaluate their impact: even for those individuals who were said to have been trained and benefited in any other way, there existed no mechanism of monitoring how many of them were actually actively involved in the informal sector thereafter.

Oketch acknowledged that apprenticeship training took place in the informal sector, but observed that such training tended to limit skill transfer to kinship considerations.

> Much of the training going on in the informal sector is, however, through the apprenticeship system. In this system, an apprentice gets attached to an established businessman and gets on-the-job training in exchange for his free labour or a small fee. The kinship or social network system plays a big role in access to this type of training (Oketch, 1995, p.77).

Overall, while Oketch's study acknowledged the significance of the informal Jua Kali sector in skills training, it neither provided a comprehensive analysis of the skill development process itself nor empirical evidence of the socio-economic characteristics of those involved. Instead, it was argued that there was no criteria by which the quality of training offered in the sector could be assessed, and that among other things, there was need to update knowledge of how the apprenticeship system in Kenya worked, especially the terms and methods of instruction. Despite having argued that the formal school system and post school vocational training institutions had largely failed in meeting their objectives, and asserted that informal apprenticeship was in fact more relevant and cost-effective (albeit with no supporting data), Oketch's recommendations for improving the informal sector largely focussed on reforming the formal education system, with little attention (if any) to the sector itself. This, as we argue later, has been a common but largely distorting trend among most Jua Kali researchers, writers and policy makers.

King (1996) in *Jua Kali Kenya: Change and Development in an Informal Sector*, perhaps represents one of the most comprehensive, recently published texts on Kenya's informal Jua Kali sector. Although the text analyses the informal sector policy development process as well as aspects of education and training for self-employment in Kenya, its major purpose, as a follow up study to *The African Artisan* (King 1977), was to:

(i) Examine change over time such as processes of: transition to self-employment; acquisition of tools; and utilization of savings;

(ii) Establish a history of interviewees' production, such as the nature and reasons for changes in goods manufactured; and

(iii) Establish, where possible, inventories of machinery, products and product sales.

In the text, a sort of tracer study in which efforts were made to trace and interview Jua Kali artisans who had been interviewed in early 1970's, is reported. However, unlike the former study whose sample included only the candle makers (tinsmiths), the study reported in this text extended its sample to other occupations: carpentry, metal work and tailoring. The study was located at one urban and one rural informal sites: Gikomba in Nairobi and Githiga in Kiambu, respectively. The methods of data collection included use of interviews, checklists and the examination of documents at the Ministry of Technical Training and Applied Technology, as well as especially designed forms which had been filled by various artisans when joining the co-operative societies, as a strategy of gaining access to credit facilities which had been promised by the state.

In reviewing the policy development process for the informal sector up to 1995, King (1996) makes four observations. Firstly, that most ideas about the potential and actual contributions of the informal sector to the national economy, and from which informal sector policies have ensued, have largely originated from, and been influenced by international donor agencies and NGOs rather than the government itself. Hence according to King's analysis, one sees Government involvement in the policy development process as having been largely reactionary. As illustrations, the Sessional Paper No. 1 of 1986 on *Economic Management for Renewed Growth*, and Sessional Paper No. 2 of 1992 on *Small Scale Enterprise and Jua Kali Development in Kenya,* both of which emerged long after the ILO (1972) Employment Mission Report, are cited. As a further example, King cites a World Bank Project of approximately US$20 million negotiated with the Kenya government in 1994 whose purpose was: to provide skill upgrading and improved training for the benefit of the Jua Kali; to increase access to appropriate technology, marketing information, and better infrastructure; and to improve the policy and institutional environment, in part through addressing the management capacity of the Kenya National Jua Kali Federation. Among the conditions of the loan was that the government was to make amendments to certain Business Acts that were

thought to militate against the growth and efficient operation of the Jua Kali sector, and facilitate ownership of land (specific sites) by Jua Kali operators (King, 1996, p.36).

Secondly, that government policy, especially as exemplified by Sessional Paper No. 2 of 1992, tends to view the Jua Kali operators as recipients of action taken by others, thereby largely ignoring any initiative by the sector itself. In effect, it is argued, Jua Kali operators have not been considered important players in the whole policy development process. It is in this light that King notes:

> The most astonishing dimension of informal sector history in Kenya is the silence of its principal actors. There has been no shortage of papers about the informal sector, but it has had no voice of its own... (King, 1996, p.21).

Thirdly, that despite having received individual and informal patronage of the Kenyan Head of State as well as official recognition as reflected in national policy documents, informal Jua Kali sector activities in general still only enjoyed second place rating among top policy makers. Citing the ODA Report of Small Enterprise Policy Implementation Programme (SEPIP), King notes:

> However, equally important is SEPIP's view that the SME [Small and Medium Enterprise] sector continues "to be regarded as an isolated sector that can be planned for in isolation" ODA, 1994b: 17). Despite the fact that the sheer size of the sector means that it impinges on the lives of all Kenyans and on all policies related to rural development, industrialization and urbanization, it still gets thought of as a convenient sponge for surplus labour (King, 1996, p.41).

Fourthly, that one of the major policy initiatives by government for Jua Kali operators, which led to the formation of the Kenya National Jua Kali Federation, is likely to have several implications among which will be an increasing opportunity for the voice of Jua Kali actors to be heard. Through the federation, it is speculated, the Jua Kali actors could emerge as a formal pressure group largely similar to the local chambers of commerce, and consequently exert pressure on Local Governments and Town Councils for equitable treatment, allocation of space and representation.

In the study, King provides some statistical data and discussions which, as already pointed out, are largely derived from official government records. Despite the usual caution with which such data should be treated, some useful observations about the plurality of informal sector activities, educational levels of workers in the sector, and methodological difficulties that may be encountered in measuring the informal sector, were made. From a sample of 59 Jua Kali workers who came from one locality (Githiga), belonged to one local Jua Kali Association, and had filled application forms supplied by, and in anticipation of developmental assistance from, the Ministry of Technical Training and Applied Technology, a number of activities and occupations in which the applicants were engaged or to which they belonged respectively, were listed. These included: metal work, tailoring, curios, maize milling, cycle repair, shoe making, catering and hotel, clothes sellers, hawkers, carpentry, motor mechanics, electrical, watch repair, kiosk and charcoal dealers (King, 1996, p.59). Out of the same sample, 24 (41%) had primary level of education, 27 (46%) had secondary level of education, while the rest had not indicated their levels of education. Moreover, a majority of enterprises (56%) reported that they had trainees.

In order to authenticate the above findings which were based on a government administered survey, King (1996) carried out a parallel survey in the same locality two years later. Some statistical discrepancies in terms of actual numbers of artisans in specific trades and the ratio of artisans to trainees, but not in the actual nature of activities reported earlier in the government administered survey, were noted. However, the independent survey did not give any data on the educational levels of the respondents. Alluding to some of the difficulties that may be encountered by informal sector researchers in attempts to acquire accurate data, King noted:

> Another difficulty in producing a really accurate profile of a village from an enterprise perspective is that it is not always possible to allocate an individual to a single, particular trade type, and thus be able to say that there are so many welders or cycle repairers, or tailors in the area. Quite a number of individuals have more than one trade or activity that they are able to practise, again depending on what is demanded... A few examples will illustrate this tendency: welding; bicycle repair and clothes repair; dry-cleaning and clothes dying; battery charge and cycle repair; shoe repair and agrochemicals; retail shop and shoe seller; household utensils and tailoring; and bar and butchery (very common) (King, 1996, p.143).

Although the alleged difficulty in obtaining accurate data on the informal sector is explained in terms of the apparent multiplicity of skills/activities/occupations associated with an individual, the real problem, as is evident from the above quotation, may lie in the criteria of classifying informal sector activities, skills or occupations. For instance, classifying dry-cleaning and clothes dying (both of which deal with textiles) or retail shop and shoe seller (both of which are shop keeping businesses), as multiple skills or occupations, may be questionable in the Kenyan context. Moreover, one must distinguish between a shopkeeper or entrepreneur who owns the business and employs people who carry out such listed activities, and one who does all the activities by himself. In present day Kenya, for instance, it is only in extremely rare occasions that one would come across a shopkeeper who is at the same time a shoe repairer. Shoe repairers usually operate their businesses on the shop verandah. Moreover, as shown in chapter four of this study, a number of Jua Kali entrepreneurs, often with different specializations (but with working knowledge of related trades) usually enter into partnerships to start a business. In a motor garage, for instance, one may find a number of skills being practised but under different self-employed workers.

With regard to enterprise-based training for the Jua Kali sector, King (1996) made four main observations:

(i) That the Jua Kali enterprise itself was a key site for skill acquisition through various kinds of informal apprenticeships;

(ii) That Jua Kali masters and employers themselves do not necessarily see themselves as involved in an informal training agreement;

(iii) That enterprise-based training for Jua Kali does not take place exclusively within the informal sector, and that a substantial number of Jua Kali workers and owners acquire their major skills from the formal sector of the economy; and

(iv) That one of the principal challenges to the training quality in the informal sector itself was the range of technologies available to any particular enterprise, and that it was in

view of this that projects which have sought to improve the standard of training in the sector have targeted either: the level of technology; range of equipment; or skill levels of the master.

Two of the observations made above are subject to contestation and further research. Firstly, King does not only make assertions (that a substantial proportion of Jua Kali workers and owners acquire their major skills from the formal sector) based on assumptions rather than empirical data, but also contradicts himself. For instance, while seeking to show that skills acquired from the formal sector were of major utility in the informal sector, he contradictorily observes that:

> A substantial number of Jua Kali workers and owners acquire their major skills from the formal sector of the economy. Of course, it is not the function nor the intention of the formal sector to provide training for the informal sector (King, 1996, p.186),

but on the next page notes that:

> Still it is worth bearing in mind that one factor in the great differences we noted between the micro-enterprises (and their incomes) in Gikomba and those in the tinsmithing concentration of Kamukunji was that a significant number of the Jua Kali owners we met in Gikomba had had direct experience of working in the formal sector of the economy, while the technologies being employed in Kamukunji had *all* been learned *directly within* [emphasis mine] the formal sector itself (Ibid, p.186).

Secondly, while the study offers an explanation as to why intervention programmes for improving the standard of training in the informal sector have targeted the technology, equipment and the master craftsmen, it neither explains how such measures would enhance skill acquisition by the thousands of informal apprentices in the sector, nor why such intervention measures are usually characterized by a complete disregard for any direct reference to those trainees. Finally, while it is claimed that Jua Kali masters and employers do not see themselves as involved in an informal training agreement, it is equally reported that the same masters and employers clearly categorized members of their respective enterprises as either trainees or employees. Moreover, it is apparent that in most enterprises, the number

of trainees was higher than that of employees. These factors constituted some of the central issues for investigation by the present study, and are discussed in chapter four and five.

Livingstone (1998) has provided a key methodological critique of King (1996). According to Livingstone, the major limitation of King's study was that it employed a social anthropological approach based on a limited number of in-depth interviews that were selected to exemplify and demonstrate the content of economic activities, but which does not provide a sufficient basis to substantiate the assertions made. Specifically, it was observed:

> ... a more systematic quantitative approach would have provided a statistical basis to better substantiate what are a number of major assertions made in different chapters regarding progress in Kenya's informal sector. In addition, King would have had less difficulty in drawing the sought of overall conclusions which social scientists would be looking for 25 years after the ILO's Employment, Income and Equity in Kenya (Livingstone, 1998, p.761).

Apart from corporate bodies and individual researchers who have shown interest in, and researched on the informal Jua Kali sector, the interest, contribution and influence of the Kenya government, as explored in the next section, is evident.

Government thinking and influence on the development of the informal sector is mainly reflected in two types of official publications: Sessional Papers and National Development Plans. Sessional Paper No. 1 of 1986 on *Economic Management for Renewed Growth*, represents the first major policy document in which the leading role of the informal sector in job creation and income generation was recognized, and policies for supporting its development were announced. In this Sessional Paper, it was argued that in order to accommodate Kenya's rising population (estimated to be 35 million by the year 2000), there was need for the country to generate and sustain a rapid economic growth. The rapid economic growth would be generated by, among others, a dynamic informal sector that created jobs at low cost and catered to the needs of people at all income levels. Noting that the modern, urban industrial sector could not be depended on to employ much of the growing workforce, the Sessional Paper recommended that it was imperative that "most investment be directed to create a prosperous agriculture, to build rural market centres and towns, and otherwise to support informal sector growth" (Kenya, 1986, p.2).

The sessional Paper identified seven positive characteristics that the informal sector possessed, which were considered central to the vital role it played in contributing to renewed economic growth of the country. These characteristics were:

(i) That informal sector activities: conserved scarce foreign exchange; required very little capital to create jobs; relied primarily on family savings; often provided its own skill training at no cost to the government; were a prime training ground for future African entrepreneurs; and

(ii) That above all, the informal sector offered an unmatched potential as a source of new jobs for the expanding labour force, and fulfilled key functions in support of agriculture and other local production by making and selling small tools, maintaining vehicles and equipment.

Apart from articulating the positive characteristics of the informal sector, the Sessional Paper identified a number of pitfalls to the informal sector. Three of the pitfalls identified, that are of significance to this study, were: the sector suffered from a negative public image; most of the operators lacked collateral required to borrow money from financial institutions; and very few of the sector's enterprises were subject to corporation or income tax and therefore did not benefit from the policy of tax incentives. While all of the characteristics and pitfalls identified above had been noted earlier by the ILO Employment Mission in 1972, it is instructive to note the different ways in which the two bodies (ILO and Government) conceptualize and explain the informal sector's alleged negative image. According to the ILO's Employment Mission, the informal sector did not suffer from a "public" negative image, but an "official" negative image that was created and nurtured by government through its actions that portend a hostile policy environment. Such actions included demolition of informal sector business establishments, forced eviction of entrepreneurs from certain locations and enactment of restrictive legislation or regulations. According to the government, however, the negative public image of the informal sector was attributed to a lack of knowledge among the public, about the several positive characteristics of the sector, referred to earlier. The two conceptions of, and explanations for the perceived negative image of the informal sector, however, are neither contradictory observations nor sufficient explanations. At best, they generally present

a common observation, offer complimentary explanations and reflect similar assumptions about the characteristics and potential of the informal sector. At worst, they fail to sufficiently relate (if at all) social and educational factors to the perceived negative image of the sector, instead heavily appealing to economic factors only.

In the light of the characteristics and pitfalls of the informal sector that it had observed, the Sessional Paper proposed three key macro-economic policies for the growth of the informal sector. These were: to raise farm productivity and income so as to stimulate the demand for goods and services provided by the sector; to lower tariffs on raw materials, semi-processed goods and other intermediate inputs used by the sector; and to encourage the substitution of labour for machinery in order to boost informal sector activities which were characteristically labour intensive. These macro-economic policies were to be complemented by specific efforts to provide direct assistance to individuals as well as informal sector businesses.

In the Sessional Paper, the government did acknowledge, as has already been indicated, that the informal sector not only created employment opportunities but also provided opportunities for skills training. However, while specific policy recommendations to enhance the employment component of the informal sector were given, such as expansion of access to credit for informal sector business and dissemination of information on market opportunities, no corresponding attention was given to the training component. Instead, in addressing the training needs of the informal sector, the policy recommendations advanced were: the expansion of youth polytechnic training and focussing it on appropriate skills and management techniques; the promotion of schemes to provide graduates of Youth Polytechnics and other technical secondary schools with the tools of their trade and with small infusions of working capital to start up their businesses (presumably in the informal Jua Kali sector); and ensuring that technical and vocational secondary school level played a crucial role in developing artisans, managers and entrepreneurs for the informal sector in both rural and urban centres (Kenya, 1986, p.57).

The above observation that specific policies for enhancing the employment component of the informal sector were made but the training component either ignored or mirrored by recommendations focussed on formal training institutions, which has also been made about

the policy recommendations made by ILO (1972), points to a major pitfall in policy studies and the policy development process of the informal sector in Kenya. Further, it raises questions about the gaps and, to a certain extent, contradictions about the highly contested relevance of training offered by vocational schools and formal post school vocational/technical institutions, the acknowledged significance and relevance of the informal sector in skills training, and the apparent neglect of its training component whenever policy recommendations for the growth of the sector are made.

A further recommendation made by Sessional Paper No. 1 of 1986 was the establishment of a special task force to review all policies to promote the informal sector, with special focus on creating a healthy legal and regulatory climate for informal sector activities. The recommended special task force was appointed in march 1987. Its work culminated into the publication and adoption of Sessional Paper No. 2 of 1992 on *Small Enterprises and Jua Kali Development in Kenya.* This Sessional Paper is considered a landmark policy document for the promotion and development of the informal sector in Kenya. In the Sessional Paper on Jua Kali Development, previous government involvement in, and support for the sector is articulated as: the provision of infra structural facilities; the formulation and enforcement of regulatory policies; and, in some cases, the provision of land. Further, the Paper identified two key factors that are said to have militated against efforts to implement government policies and programmes, and build institutions specifically aimed at promoting the sector as: poor coordination among implementing agencies; and lack of adequate needs assessment.

Unlike Sessional Paper No. 1 of 1986 which referred to "characteristics" of the informal sector, the Sessional Paper on Jua Kali Development refers to "benefits", although both are talking about the same thing. Among those identified as benefits of the informal sector were: the significant contribution to the economy through goods produced and services offered; the creation of jobs at relatively low capital cost; the development of a pool of skilled and semi-skilled workers who formed a base for future industrial expansion; the support to industrialization policies that promoted rural-urban balance; and the ability to adapt quickly to market changes. According to the Sessional Paper under review, there was need to shift from an interventionist policy approach that the government had adopted previously, to a facilitative policy approach. In this regard, it is argued that government intervention in small

enterprise development had encouraged the culture of dependence among entrepreneurs.

> In the past, there has been too much reliance on the government to provide leadership and direction for small enterprise development. With a view to changing this attitude of dependence, associations of small enterprise entrepreneurs are being formed. These associations will be encouraged to promote the interests of their members through activities such as: training on specific business topics; lobbing for specific concerns on behalf of their membership; promoting professional and social relationships among members; and conducting studies and surveys for its members (Kenya, 1992, p.4)

In this Sessional Paper on Jua Kali Development, a number of factors were identified as inhibiting the growth of the sector, notable among which were lack of enterprise culture, and management skills. An enterprise culture, according to the Paper, "is an environment that prepares the community as a whole to take advantage of the available business opportunities in society and provides supportive measures for entrepreneurs at all levels of development to realize their potentials, regardless of sex" (Kenya, 1992, p.23). In order to develop a more dynamic enterprise culture, it was proposed that universities and other training institutions would introduce entrepreneurship education in their degree and diploma programmes, while the Ministry of Technical Training and Applied Technology, in collaboration with other relevant organizations would: provide training to entrepreneurs and their employees in the choice and use on new technologies; use innovative methods, including distance learning, use of self-instruction materials, and short booklets in specific business problem areas; and develop curricula for apprenticeship courses so that an organized approach to training would be adopted. Graduates of apprenticeship programmes were to be accorded opportunities to participate in refreshercourses on self-employment, entrepreneurship development and skills enhancement. Most of the other recommendations focussed on staff development in agencies that were expected to promote growth of the Jua Kali sector.

Although the Sessional Paper on Jua Kali Development identified the development of a pool of skilled and semi-skilled workers, as one of the benefits of the Jua Kali sector, the policy recommendations for the growth of the sector that followed, made no specific reference to improving the training component of the sector. Like other policy documents discussed earlier, the Sessional Paper on Jua Kali development located the training needs of the informal sector within formal technical training institutions. Moreover, while it had been argued that

there was need to discourage a culture of dependence and instead improve the entrepreneurial culture in which Jua Kali workers took initiative, a number of policy recommendations made largely reduce them to passive recipients of externally constructed programmes and innovations. King (1996) has observed that:

> What is intriguing about the Sessional Paper on Small Enterprise and Jua Kali Development in Kenya is that while every conceivable organization and government department is charged with doing something about the informal sector, there is not a single recommendation in which the Jua Kali themselves have to take the initiative. It might appear that the Jua Kali are very much seen as recipients of action taken by others (King, 1996, p.21).

A further major feature to be noted in the Sessional Paper on Jua Kali Development is the frequent use of the terms entrepreneurs, artisans and employees, when referring to the categories of people involved within the informal Jua Kali sector. The terms apprentice or trainee are rarely visible in the document. In chapter five of this study, the policy and practical implications of constructing Jua Kali apprentices as employees rather than trainees are discussed.

The National Development Plans represent some important sources of literature from which policy developments in the informal Jua Kali sector have been documented. Although the informal sector had received official international attention in 1972 through the ILO Employment Mission to Kenya, it was only in 1984 that it first appeared in Kenya's Development Plan. The *Development Plan 1984-1988*, whose theme was mobilising domestic resources for equitable development, however, neither identified the needs of the informal sector nor constraints to its growth. However, the growing importance of the sector in employment generation was clearly acknowledged: it was estimated that between 1976 and 1981, the employment growth rate of the urban informal sector had been 4.7 percent as opposed to 3.5 percent for the formal modern sector (Kenya, 1984, p.7). Further, it was noted that despite the high demand for, and physical expansion of, the formal education system that had been experienced in the past, it appeared inevitable that most school leavers would neither proceed for further formal education (beyond primary or secondary school) nor gain access to employment in the shrinking modern sector.

Specifically, it was observed that "the attitudes of both parents and students to formal education as a route to modern sector employment need to be changed since many school leavers will be forced to look for employment in the informal sector"(Kenya, 1984, p.149). Accordingly, rather than commit scarce government resources to the unrestricted expansion of the general education system, it was argued, such "resources might be used for programmes which either directly or indirectly create jobs and training opportunities outside the formal education system" (Ibid).

According to the Plan, four specific policy initiatives for promoting growth of the informal sector were to be pursued during the plan period (1984-1988): provision of support services such as water, simpler licencing procedures, refuse collection; protection from harassment; and provision of post primary and post secondary training opportunities for those unable to proceed for further formal education, by converting existing technical secondary schools into post secondary technical training institutes, as well as expanding other formal vocational training institutions. Overall, this Plan may be viewed as the first official attempt by government to positively identify and incorporate the informal sector into main-stream economic planning, albeit devoting only a total of less than two out of two hundred and twenty five pages to it. However, in the *Development Plan 1989-1993* that followed, the government gave special attention to the informal sector. It was in this Plan that: the term "Jua Kali" was first introduced into official literature; the relative neglect of the Jua Kali sector that had prevailed over time was acknowledged; the enormous potential contribution of the sector in job creation and income distribution was affirmed; and specific policies for its growth and development outlined. In a key observation, it was noted:

> ... a serious omission has been the neglect in exploiting the full potential of the small scale and Jua Kali enterprises. This potential can no longer be ignored if the country is to meet the targets for employment and income generation set out in this plan...(Kenya, 1989, p.164).

The Plan largely based its analysis of, and policy recommendations for, the informal sector on Sessional Paper No. 1 of 1986 on *Economic Management for Renewed Growth*, that has already been discussed. The characteristics of the informal sector, for instance, are reproduced while a commitment to policy restructuring and liberalization is asserted. Further, by noting

that "In the past, government has provided support to various small scale and Jua Kali enterprises, ...in training and skill formation through Village Polytechnics and *Harambee* Institutes of Technology" (Kenya, 1989, p.165), an apparent belief that formal pre-employment vocational training institutions are key suppliers of the Jua Kali workforce, and the subsequent neglect of the training component of the Jua Kali Sector, is reinforced. Although there was an explicit acknowledgement that apprenticeship schemes already existed in the small scale and Jua Kali sector, and that formal training institutions were not well placed to respond to specific training needs of the sector, very little was said about tangible strategies for improving the Jua Kali apprenticeships, except the observation that:

> Since small scale and Jua Kali enterprises are being called upon to create a large number of jobs and since formal training institutions may not necessarily be knowledgeable about the conditions obtaining in this sector, such institutions may not be as efficient as the apprenticeship schemes which already exist in this sector. It is, therefore, proposed to explore ways and means of extending these apprenticeship schemes, including the possible use of the training levy, in order to ensure that the skills of existing master craftsmen are not only extended to their peers but also transmitted to future generations (Kenya, 1989, p.168).

The overall theme of the Plan was: cultivating, among small scale and Jua Kali entrepreneurs, an entrepreneurial spirit. Such a spirit, according to the Plan, revolved around dynamism, inventiveness, innovation, initiative and a propensity to take risks. Regrettably, it was noted, entrepreneurs in the informal sector were largely overlooked by commercial financial systems and ignored by external aid agencies. While it would be a natural reaction for government to provide direct financial support to entrepreneurs in this sector, such support, it is argued, would inevitably lead to slow entrepreneurial development, failure for entrepreneurs to take risks, and eventually an in built dependency in the very people government wishes to encourage to be self-reliant (Kenya, 1989, p.166). This is a clear reflection of the existing tension between positive intervention and what may be viewed as negative intrusion in the growth and development of the informal Jua Kali sector. This point is highlighted later in this chapter and extensively discussed in chapter five of this study.

The *Development Plan 1994-1996*, laid less emphasis on the informal sector, than the two Plans already discussed. Its major recommendation was that the policies outlined in Sessional Paper No. 2 of 1992 on *Small Enterprise and Jua Kali Development in Kenya* would be implemented during the plan period. Clearly, in what may be regarded as the government's version of the "Jua Kali Mission Statement" cited below, there is no reference to the sector's training component:

> The government recognizes the important contribution of the informal sector in the country's industrialization process, generation of employment opportunities and thereby, alleviation of unemployment. This led to the establishment in March 1992 of the Directorate of Applied Technology to cater for the purpose of employment creation (Kenya, 1994, p.40).

The central focus of the *National Development Plan 1997-2001*, however, is to lay a foundation that will enhance the transformation of Kenya from an agricultural-based economy to a newly industrialized country by the year 2020. In this plan, it is noted that while the modern sector realized an average employment growth of 1.9 percent between 1991 and 1994, that of the informal sector was 16.1 percent over the same period (Kenya, 1997, p.10). However, it is observed that many of the jobs created in the informal sector did not pay well due to low productivity. As a result, it is claimed, many informal sector workers were poorly paid and/or underemployed.

The Plan highlights several problems confronting the Kenyan education system: declines in enrolments and completion rates; financing; and relevance. It is reported, for instance, that on average only 47 percent of students complete primary school education. Specifically, it was stated:

> ...of the students entering standard one, only 77 percent of boys and 80 percent of girls enter standard four while only 55 percent of boys and 35 percent of girls enter standard eight [last grade of the primary school education cycle] (Kenya, 1997, p.137).

According to the Plan, the Directorate of Industrial Training had carried out an assessment of training needs and the potential for institutional capacity to meet those needs. This study, carried out in 1995 and focussing on Kenya's formal technical and vocational training institutions, had reported the following findings (among others):

(i) That patterns of skill distribution in industry reflected a relative shortage of technicians: the ratio of technologist to technician to craftsman was 1:3:12 as opposed to the optimum (recommended distribution) of 1:5:10. A possible implication of this is that craftsmen are ineffectively supervised at production level, resulting into poor quality;

(ii) Technical graduates lacked hands-on experience, had poor work attitudes and were inflexible. Moreover, the institutions in which they were trained not only failed to keep pace with changing technologies, but also lacked proper and up-to-date equipment. Accordingly, rather than employ and retrain technical graduates, entrepreneurs have increasingly resorted to on-the-job training. However, it is argued, this practice inflates the number of unemployed graduates and therefore not only reduces labour mobility and flexibility, but also compromises the attractiveness of pursuing institutional technical courses;

(iii) That the informal sector, despite its considerable training potential, made an insignificant contribution to formal sector skills accumulation largely because an inadequate number of formal sector employees presented themselves to be tested for formal sector qualifications; and

(iv) That the multiplicity of bodies that carried out the certification of technical qualifications in Kenya, created problems in rating, comparing and equating the different certificates (Kenya, 1997, p.141).

In view of the above shortcomings of the training system, it was recommended that during the Plan period and thereafter, on-the-job training would be emphasized in both public and private sectors. Specifically, resource levels in industrial training institutions would be improved and the curricula re-oriented to meet specialized skill requirements of industry. Further, certification of all national, occupational qualifications, except at university level, would be centrally coordinated by the Kenya National Examinations Council. Much of what appears in the *National Development Plan 1997-2001*, however, is largely a replication of Sessional Paper No. 2 of 1996 on *Industrial Transformation to the Year 2020.* The purpose of the

Sessional Paper was to map out a strategy for Kenya's industrialization process and the role to be played by the government in its implementation. The basic premise of the Sessional Paper was that industrialisation is the major catalyst to sustained economic growth and rapid employment generation, and the role of government in the industrialization process was to support and facilitate private enterprise through investment in human resource development.

Notably, the Sessional Paper on Industrial Transformation was the first official document to conceptualize the importance of the informal sector as transcending self-employment and being an integral part of the industrial sector.

> The importance of the informal sector extents beyond employment, for it provides a point of entry for many Kenyan entrepreneurs into the manufacturing and service sectors and as a testing ground for development of low cost products (Kenya, 1996, p.13).
>
> Throughout the discussion in this Sessional Paper, the informal sector is taken as an integral part of the industrial sector, and ... proposals put forward should be taken to integrate the informal sector (Ibid, p.14).

Further, according to the Sessional Paper on Industrial Transformation, constraints to the growth of the small scale and Jua Kali sector revolved around: access to credit at start up, during operations and for expansion purposes; access to land; access to training and technical support; and access to technology and information. Land problems were largely linked to the practice whereby many Jua Kali entrepreneurs located on un-utilized public or private land, resulting in constant harassment and demolition of their business premises by the local authorities. This implies insecurity of tenure and lack of fixed address for successful business operation. Apart from constraining growth, it is argued, such practices result in loss of property as well as market and customer credibility. Besides, it is difficult for basic services such as water and electricity to be provided to such nomadic businesses or Jua Kali enterprises (Kenya, 1996, p.52). As a solution, it was suggested that government and local authorities would identify suitable and commercially viable sites that could be let or leased to informal enterprises. However, as shown in chapter four of this study, past attempts of such land policies have largely been unsuccessful, partly due to: non involvement of Jua Kali entrepreneurs in the choice of location of site; and pushing entrepreneurs to peripheral areas

away from markets.

With regard to training, several policy strategies for industrialization were recommended, including:

(i) Making entrepreneurial skills and ability part of the regular curriculum of universities;

(ii) Reviewing the 8-4-4 curriculum to make it more focussed on to the national strategy of transforming Kenya into a Newly Industrialized Country (NIC) by the year 2020;

(iii) Developing a National Skills Training Strategy, whose prime objective would be to put in place a National System of Skills raining provision in Kenya, taking into consideration the current and future needs of the economy;

(iv) Encouraging close collaboration between training institutions and employers of labour, in order to bridge the gap (reduce the level of mismatch) between the output of graduates and skill demands of the job market, thereby enhancing the quality and relevance of training;

(v) Introducing enterprise education as a non-examination subject at primary schools so as to inculcate the enterprise culture; and

(vi) Strengthening support to informal training through developing stronger links between informal sector artisans and both public and private sector training institutions. In an apparent belief that graduates of such formal training institutions had an almost direct transition to the informal sector, it was observed: "Kenya has over 600 registered Youth Polytechnics (YP) which are well spread around the country... Their total enrolment is 50,000, with an annual output of 15,000 graduates most of whom directly join the informal sector" (Kenya, 1996, p.31).

Emerging Issues

From the foregoing review of literature on Kenya's informal Jua Kali sector, five major issues emerge. The five issues relate to: definition of the Jua Kali sector; tensions between positive intervention in, and negative intrusion of the sector by the State and other agencies; skills acquisition *within* the Jua Kali sector; education and training *for* the Jua Kali sector; and defining competency levels of Jua Kali workers. A discussion of each of these issues is made below.

Definition of the Jua Kali Sector

One of the key issues that clearly emerges from the literature is the difficulty in defining the Jua Kali sector. This difficulty arises whether one attempts to define the sector in terms of the nature of activities, the nature and level of skill requirements, the size of enterprise in terms of personnel and capital, the nature and status of employment, or the nature of organizational and operational regulation associated with the sector. The informal sector in Kenya is characterized by a plurality of activities: shoe-making and repair, street hawking; tailoring; hair salons; traditional medicines and healing; *matatu* (taxi) businesses; textile trading, especially second-hand clothes dealers; grocery and food kiosks; and skilled occupations such as carpentry, motor mechanics, electrical/electronics and masonry, among others. These activities, are associated with different demands in the nature and level of skill requirements, they provide and symbolise different income opportunities, and are often subject to varying degrees of state legislation and control. This implies that studies which draw generalizations about the informal sector, without contextualizing the activities in question, may end up concealing more than what they reveal. Specifically, it is difficult to accurately define and make generalizations about the informal sector without specifying the activities in question.

The Kenya government, for instance, has defined the informal sector as "enterprises comprising of between 1-50 employees and up to Kenya Shillings 5 million in turn over" (Kenya, 1989, p.164; Kenya, 1992, p.1). This definition is problematic since it wrongly assumes, as it has been argued elsewhere in this chapter, that all people (including trainees)

associated with informal enterprises are employees. Moreover, not only does the definition fail to distinguish between direct and indirect employees of informal sector enterprises, but also lends itself to "a tentative definition" by including a fixed monetary value (5 million), which in actual practice is dependent on economic factors that vary over time.

It has also been common to refer to people who work in the informal sector as "the self-employed". The tendency in this case is to define the sector as one which provides self-employment to people, especially the majority poor (ILO, 1972, p504, McGrath, et al, 1995). In such references, it has been traditional for most statical data to merely show three things: the total number of people employed in the informal sector; the comparative percentage proportions of modern and informal sector lahour force; and the comparative employment growth rates of the two sectors. Rarely does one come across statistical data that distinguish between informal sector workers who are self-employed and those that are salaried employees. This is largely because of the general belief in, and official promotion of informal sector enterprises as self-employment agencies. Although McGrath *et al* rightly caution that the concept of the informal sector itself is not amenable to generalisation, they nonetheless adopt a definition which perpetuates the self-employment discourse. Specifically they state:

> Throughout this report we have employed a rather broad distinction between two tiers of the informal sector and types of self-employment: **subsistence self-employment** and **entrepreneurship self-employment**. This division can be described as the difference between the upper echelons or the upper tier of the informal sector where the self employed may be thought of as micro-entrepreneurs and the much larger, lower reaches or lower tier of the self-employed, where they may also be termed the casual poor, disadvantaged groups, or, in a word, populations that are in reality **surviving** rather than developing through self employment (McGrath *et al*, 1995, p.1).

However, as we show elsewhere in this study, defining the informal sector in terms of the nature or status of ones' employment (self-employment), largely represents popular promotional rhetoric based on assumptions of what the sector should ideally be, but does not adequately reflect a realistic assessment of practice. Accordingly, defining the informal sector merely in terms of the nature or status of ones' employment may be inadequate and even misleading.

Some early studies of the informal sector in Kenya, on the other hand, attempted to define it in terms of the degree of non compliance with state regulations and legislation. According to such definitions, the informal sector is one which is highly unregulated and whose operations are not subject to labour laws such as minimum wages. However, if one considers that presently informal enterprises are subject to certain regulatory practices such as licencing, restrictive locations and local authority service charge payments, then the idea of the sector being highly unregulated becomes problematic as well. Moreover, one wonders whether the perceived unregulated nature of the sector may be explained in terms of failure by informal sector entrepreneurs to comply with what may arguably be described as insensitive and oppressive laws, or failure by the state to devise laws that are responsive and conducive to the specific needs of the sector.

Given the concerns highlighted above, one can discern the likely pitfalls in any study which attempts to simplistically draw generalizations about the informal sector on the basis of limited samples that neither define the occupational, numerical, nor geographical characteristics of the population. What then would be a suitable definition of the Jua Kali sector? Although it would appear that a better approach would be to define the sector in terms of its characteristics, even such characteristics are not necessarily applicable across occupational boundaries. For instance, the characteristics of a street hawker are likely to differ markedly from those of a skilled motor mechanic who owns an enterprise, employs other skilled workers and trains apprentices. On the outset therefore, it would appear that presently, one of the major challenges to informal sector studies is the lack of a clear definition of the concept of informal sector. This has key implications for for both researchers and consumers of the research output. It does not only demand conceptual, operational and contextual clarity from those who research the informal sector, but places limits on the generalisability of research findings. Further, it suggests that consumers of such findings, in particular policy makers and development agencies, should take cognisance of such limitations. Accordingly, while the natural inclination at this stage of analysis would be to provide an alternative definition of the informal sector, we prefer instead to raised it as an issue for further research.

Tensions between Positive Intervention and Negative Intrusion

State involvement in the activities of the informal Jua Kali sector tends to be labelled as either intervention or intrusion. It is positive intervention if strategies adopted and actions taken result into further job creation, improved productivity and satisfaction of both the Jua Kali operator and his or her clients. It is, however, perceived as negative intrusion if actions by the State result into retardation or stagnation of growth, a culture of dependency rather than independence, and dissatisfaction among Jua Kali entrepreneurs. Clearly, the gradual shift in government policy for the growth and development of the Jua Kali sector may be categorized into three principal phases: negative intrusion; passive indifference; and positive intervention. The negative intrusion phase was characterised by active government involvement in indiscriminate demolitions of informal sector establishments and the enforcement of strict licencing policies. The passive indifference phase was characterized by a "hands off" approach by government in which, following the ILO (1972) Employment Mission's report, the active and indiscriminate demolitions of informal sector enterprises was downscaled, but the official recognition of the sector's contribution to the country's economic growth was inhibited. The positive intervention phase, on the other hand, has been characterised by rhetorical affirmations of the importance of the sector in employment generation, selective demolitions of informal sector establishments, and formal recognition and integration of the sector in national economic plans.

Although presently the contribution of the informal sector to Kenya's economic growth is well acknowledged and its needs reasonably identified, intervention measures have either been reluctantly embraced and cautiously pursued, or readily adopted and hastily implemented. In the former case, the underlying assumption has been that uncritical and hasty interventions may formalize the informal and thereby destroy the very foundation upon which the sector thrives, while in the latter, the assumption is that purposive and timeous intervention would enhance the growth and contribution of the sector to economic growth. Whichever the case, however, it appears that debates on measures that constitute positive interventions and negative intrusions of the informal sector by the state and other agencies, will largely be resolved when there is an increasing move away from subjective assumptions about the characteristics of the sector, to objective views based on relevant data. It is in this light that

studies, especially ILO (1972), have pointed to the danger of policy interventions for the informal sector that are based on popular assumptions rather than relevant facts and objective data.

*Skills Acquisition **Within** the Informal Jua Kali Sector*

It has been widely acknowledged by virtually all studies and policy documents reviewed above, that one of the activities taking place within the informal sector is apprenticeship training. In one of the studies, it was estimated that there were probably more school leavers engaged in informal sector apprenticeships than in all formal vocational training institutions in the country. Skill acquisition in the informal sector, however, is said to have been, and still is characterised by some form of restriction on the basis of race(especially in pre independence Kenya), gender, and kinship. The belief that skill transfer in the informal sector, from the master craftsman to the trainee, is closely linked with, and largely restricted to the kinship has either been implied or explicitly stated in official policy documents, and asserted by individual researchers and writers such as King (1977) and Oketch (1995), among others. However, this belief has been propagated without much evidence.

Although some of the literature acknowledges that the informal Jua Kali sector suffers a negative public image, it does not offer sufficient explanation to help us understand why. However, one possible explanation is the apparent assumption that the majority of those who make direct transition from school to the informal Jua Kali sector, are dropouts or school leavers who had failed to meet the academic requirements for progression through formal training institutions. Although the other factor commonly cited is failure to raise fees for formal schooling or training, it is clear that such a factor contributes relatively little to the perceived negative image of the sector. The assumption that failure in school is the major factor that propels direct entry of school leavers into the Jua Kali sector, is clearly reflected in most of the policy documents that have been reviewed. Indeed, one of the major justifications officially advanced for promoting the development of the Jua Kali sector is that it offers employment opportunities for those who "fail to make it" in the formal education and training system. According to King(1988), schools do not give anything positive to their students with regard to the informal sector. Rather, he argues, it is the process of failure in

school that produces the waves of recruits to the sector. In his terms, "it is principally those who are rejected by schools through examinations, lack of places or lack of money for fees who find themselves contemplating informal sector opportunities" (King, 1988, p.268).

Two major observations therefore are: the acknowledgement by most studies that skills training takes place within the informal Jua Kali sector; and the explicit or implicit assumption that such training does not only limit skill transfer to kinship relations but also, is taken mainly by school dropouts or leavers with low levels of education and poor academic backgrounds. However, from the available literature, there seems to be a definite lack of concrete empirical research to confirm or reject these assumptions. This study, as already stated in chapter one, sought to empirically test these assumptions. The findings are presented in chapter four.

Education and Training for the Informal Sector

The potential of the informal Jua Kali sector in contributing to employment generation and skills training has been acknowledged. However, while specific policy recommendations for enhancing its employment component have usually been given, no corresponding attention has been given to the training component of the sector. Whenever reference to training needs of the informal Jua Kali sector has been made, whether by government, NGOs or individuals, attention has largely focussed on how to design or strengthen appropriate training programmes *for* the sector, to be run at or by formal technical training institutions or agencies. Often, such programmes are never directed at trainees (apprentices) but at qualified entrepreneurs (artisans) who either own some business or have been operating in the sector for some time. Moreover, such programmes have laid emphasis on entrepreneurial rather than production skills. While it may be argued that such skills will, if successfully imparted to the entrepreneurs, filter to trainees, it is easily discernible that such a filter would be by accident rather than intent.

The relative neglect of, or passive attention to the training component of the informal Jua Kali sector seems to be predicated on three assumptions: that formal vocational and technical training institutions are major suppliers of the informal Jua Kali workforce; that vocational

training programmes in the informal Jua Kali sector can develop independently and function effectively and efficiently without any external support; and that the training function of the informal sector is secondary to, and a by-product of the production function. On the basis of these assumptions, it is argued that expansion of space, improvement of facilities and innovation of training programmes in formal vocational and technical training institutions, as well as investments in the production and marketing activities of the sector, is a legitimate, necessary and sufficient condition for promoting the training component of the informal Jua Kali sector. These assumptions are investigated in chapter four and discussed in chapter five of this study.

Defining Competency Levels of Jua Kali Workers

Informal Jua Kali workers seem to enjoy a multiplicity of titles which in reality neither reflect their theoretical and practical competencies, nor their socio-economic status. They are variously referred to as: artisans; master craftsmen; semi skilled workers; skilled operators; entrepreneurs; majority poor; and informal traders. Inherent in all these titles is an attempt by researchers, policy makers, journalists and other writers to adopt and use formal concepts to compare and describe the activities, characteristics and workforce of the informal Jua Kali sector. If one was to assume, as depicted by the literature, that the sector comprises a large number of graduates of formal vocational and technical training institutions, of retirees and retrenched victims (of Structural Adjustment Programmes) from the modern sector, and graduates of informal apprenticeships, then the logical conclusion would be that the informal Jua Kali sector is a melting pot, characterized by a diversity of technical qualifications and competencies. Accordingly, any attempt to describe the quality or competencies of the sector's workforce by ascribing to it a single title, would not suffice.

The difficulty in describing competency levels of the Jua Kali workforce not only arises from the infusion into the sector of externally trained workforce, but also from a lack of appropriate and acceptable scales of equivalencies by which the knowledge and skills acquired by those trained within the informal sector itself can be externally certified. As argued in chapters four and five of this study, the common practice of labelling graduates of the informal Jua Kali sector as artisans, based on the argument and assumption that they lack theoretical

competence in scientific disciplines, is not only misplaced but also misleading.

Informal sector activities generally and informal apprenticeships particularly, are not phenomena that are unique to Kenya but socio-economic developments to be found in many other countries. Accordingly, apart from the Kenya-focussed informal sector literature that has been reviewed in the foregoing section, two other categories of informal sector literature exist: that focussing on a specific country (intra-national); and that focussing on two or more countries (cross-national). However, available cross-national literature on the informal sector does not comprise empirical investigations of issues directly relevant to the present study, but theoretical discussions of certain aspects of the sector. Accordingly, rather than make a formal review of such literature in this chapter, it was deemed more appropriate to spare it for chapter five where a discussion of research findings and comparative analysis of emerging issues is made. In the following section therefore, only intra-national literature, which mainly describes the nature of skills training and key characteristics of the informal sector in respective countries, is reviewed.

Training and Related Characteristics of the Informal Sector: Evidence from Other African Countries

A number of intra national studies on the informal sector have been carried out in Africa, and have investigated different aspects of the sector. In this section studies that have examined training aspects and related characteristics of the informal sector in Nigeria, Cameroon, Senegal, and Togo are reviewed. Justification for the choice of these countries has already been made in chapter one of this study. However, it suffices to state that accessibility of literature was the principal factor in their selection.

Among the studies that have examined the informal apprenticeship systems in Nigeria are Oduaran (1988), and Obidi (1995). The study by Oduaran (1988) investigated the training of roadside mechanics in Benin City of Nigeria. Although the study was reported in 1988, it was carried out between 1984-85. The purpose of the study was to establish: the background characteristics of apprentices or trainees and their trainers; whether those characteristics

affected the ability of apprentices to acquire mechanical skills in any way; and the methods used in training to accommodate the observed variations in the characteristics of apprentices. The main instruments for data collection were interview schedules. The key information sought by the interviews included: background characteristics of trainees; trainee's reasons for choice of becoming a motor mechanic; and career prospects. The study comprised a sample of 150 trainees and 61 trainers spread over 15 workshops.

There were four major findings that emerged relating to the profiles of trainees and trainers, the modes of instruction, the duration of training and the method of "certification". With regard to the respondents' profiles, the study established that: about 45 percent of the trainees were aged between 16-20, while 29 percent were aged 25 or above; only 32 percent of the trainees were literate as opposed to 68 percent who were illiterate; the majority of trainers(59%) had acquired their skills through informal apprenticeship, as opposed to 41 percent who had formal qualifications. According to Oduaran, the mode of instruction was mainly through observation and imitation, while "the language of instruction used by all trainees was 'pidgin' English. It is necessary for trainers to use this as their main medium of instruction because their trainees come from different ethnic backgrounds" (Oduaran, 1988, p.307). Although no attempt was made to correlate trainer trainee kinship backgrounds, this statement tries to link ethnicity as a language factor, to instructional efficiency in informal apprenticeships.

With regard to the duration of training as well as methods of assessment and certification, the findings of the study point to two major issues. First is the discrepancy between what trainers prescribe as the suitable duration of training (4 years) and what trainees perceive as the upper limit to duration of training (3½ years). One negative effect of this discrepancy, according to Oduaran, is that it promotes incidences of trainee-dropout. Specifically, he observes:

> Although most of the roadside mechanic trainers interviewed agreed that an average of four years is just enough time to train somebody to become a competent mechanic, 75 percent of the apprentices felt that 3½ years suffice. This discrepancy is important because it was discovered during the interviews that there had been 65 cases of trainees dropping out of training after staying on for only 3½ years and were doing well in their own workshops (Oduaran, 1988, p.305).

Second, is the reluctance by trainees to take government trade tests. According to Oduaran, successful completion of training by the trainee may be certified in two ways: the trainer, using his own judgement as well as customers' comments as criteria for certifying qualification, issues a certificate of competence; and the trainer, having sat and passed government trade tests, gets a formal certificate. However, the study reports that only 53 percent of trainees interviewed indicated a willingness to take the government trade test. The trade test, it is argued, was unpopular because it is seen as testing literacy rather than technical skills. Overall, this study makes useful observations about informal apprenticeships in Nigeria. However, in many cases corresponding explanations to the observations made are not offered.

Obidi (1995) carried out a case study of skill acquisition through indigenous apprenticeship among the Yoruba Blacksmiths in Nigeria. The study focussed on 55 Yoruba Blacksmiths whose selection was made following a purposeful sampling procedure. Structured interview guides were used as the main instruments for data collection. Two notable features of the study that bear direct relevance to our current study are the distinctions made between traditional apprenticeship and formal schooling, and a discussion of the influence of kinship relations to skill transfer within the informal sector in Nigeria. According to Obidi, three of the major distinctions between traditional apprenticeship and formal schooling, and which to a large extent not only reflect the characteristics but also weaknesses of the informal apprenticeships, are:

(i) Apprenticeship comprises ill defined, unstandardized and unregulated or uncoordinated activities, each of which is aimed at a different goal, whereas schooling is a definable, measurable system of relatively standardized and interrelated parts;

(ii) The minimum age for admission to apprenticeship is usually not defined as it is in the school system, though the duration of training is precise and clearly understood by both the craftsman and apprentice;

(iii) In traditional apprenticeship, there is no prescribed syllabus, and therefore no defined standard of performance which can be used to determine a pupil's ability to move to

the next class or to obtain a certificate (Obidi, 1995, p.372).

Although a detailed discussion of these alleged characteristics and weaknesses of the informal sector is made in chapter five of this study, it suffices to mention here that Obidi's analysis reflects a tendency by some researchers of making formal interpretations of the informal. One of the common mistakes by such interpretations is equating differences between the formal and informal sectors with weaknesses of the latter. For instance, the *absence* of a formal written syllabus within the informal sector is interpreted as a *lack* of syllabus and therefore a lack of defined standards of performance, which in turn is seen as a *weakness* of the sector. This is not the case.

Indigenous apprenticeship, according to Obidi (1995), was "a process by which highly valued and guarded skills owned by a family, an individual or group of individuals are passed from one generation to the next in Nigeria" (Obidi, 1995, p.373). Admission to a trade was influenced by traditional beliefs in gods (oracles are usually consulted), and skill transfer from the master craftsman to the apprentice was limited to kinship relations, except in extreme cases when a non relative would be accepted as an apprentice (Ibid, p.375). The influence of Kinship relations in Nigeria is not limited to the recruitment of apprentices but extends to the overall profitability of the business with which a master (artisan) is involved. Often, such relationships worked against the profitability of the informal enterprise. According to Oni (1988), a small community where kinship and economic relations are woven together in a social web work against the artisan. In Nigeria particularly, instances have been reported where artisans working in the informal sector believe that people do not pay them for services rendered or goods delivered because they exploit the advantages of social familiarity (Oni, 1988, p.97).

Demol and Nihan (1982), commissioned by the ILO, carried out a survey of the urban informal sector in Yaonde (Capital of Cameroon) between June and July 1979. The purpose of the survey was: to establish the characteristics of the sector, understand how it functioned, and assess its employment potential; and to provide relevant recommendations to the government with a view to promoting the development of the sector's employment and training potential. The sample comprised 2,600 entrepreneurs, 560 employees and 3, 300

trainees (apprentices) covering skilled occupations: woodworking; metal working; mechanical; electrical repairs; tailoring and leather work. Among the major findings of the study were those relating to: sources of initial investment for establishing informal enterprises; modes of initial skilled training for entrepreneurs; nature of apprenticeship programmes; and the kinship factor in skill acquisition in the sector. The specific findings were:

(i) Most entrepreneurs started their businesses with aid from family capital, or invested individual savings from previous jobs;

(ii) Ninety five percent of all entrepreneurs had undergone apprenticeship training, out of which 83 percent had trained in the informal sector while only 12 percent had trained in the formal sector;

(iii) About thirty percent of entrepreneurs had worked previously in the formal sector but at given points, had opted for the informal sector. The major reason for leaving the formal sector was a search for better earnings offered by the informal sector. The study showed that the average weekly income of informal sector entrepreneurs, especially in production related occupations, was up to five times higher than the legal minimum wage (mandatory for formal sector employees). However, eight percent of the sampled entrepreneurs earned less than the legal minimum wage;

(iv) Fifty two percent of all sampled enterprises had apprentices, with an average of 2.5 apprentices per enterprise. The typical working routine of the entrepreneur entailed the procurement of raw materials, looking for clients, management and training of apprentices;

(v) The apprentices were mainly remunerated in kind (meals and accommodation) or money. In cases of money, trainee allowances amounted to less than one third of the legal minimum wage paid in the formal sector. Generally, the total financial contributions paid by the apprentice or his family to owners of enterprises amounted to approximately one third of the amounts the owners paid to apprentices. However, it is cautioned that:

> The calculation is only partially valid since a major element in the remuneration of an apprentice for the work he does is the fact that he is acquiring skills which are usable in both the informal and the modern formal sectors and which also constitute a sufficient basis at the present time for setting up his own [enterprise] (Demol and Nihan, 1982, p. 80).

(vi) Thirty two percent of apprentices were members of the craftsman's extended family while 27 percent were engaged because they were friends or relatives of friends. However, it is argued that such kinship and friendship bonds between craftsmen and their apprentices had a positive impact: they legitimated checks against exploitation of apprentices. It is in this light that Demon and Nihan observed:

> The fact that the majority of apprentices paid an apprenticeship fee gives ground for thinking that the latter felt they are gaining from the deal. Moreover, bonds of kinship and friendship frequently exist between entrepreneur and apprentice and doubtless enable pressure to be exerted in the event of exploitation (Demol and Nihan, 1982, p.81).

It may be noted that unlike other studies already considered, which made references to the perceived influence of kinship relations between apprentices and their trainers to skill transfer in the informal sector, without supporting data, Demol and Nihan's study does not only provide evidence based on a direct correlation between skill transfer and the craftsman's/trainee's kinship origins, but also one that is based on a relatively large sample, and therefore valid.

A similar ILO sponsored survey of the urban informal sector was carried out in Dakar, the capital of Senegal. According to Lubell and Zarour (1990), who carried out the survey, one consequence of the structural adjustment programmes has been a growing importance of the informal sector, which is expected to absorb a majority of displaced workers from the modern formal sector. Moreover, they argue, the importance of the informal sector is underscored by the fact that it is the major source of training for most of the urban skilled labour force in Dakar, Senegal. For instance, it was estimated that only a small number of individuals received the limited technical training available at the secondary school level in Senegal's formal education system: in 1986, only 4,234 out of 30,342 secondary level students attended

formal technical courses as opposed to 10,317 informal apprentices (Lubell and Zarour, 1990, p.392). The study established that: overall, 80 percent of all sampled enterprises had apprentices but 30 percent of the trainees were relatives of the entrepreneur; the apprentices had generally low levels of education with only 21 percent having reached primary school and 3 percent middle school; and graduates of informal sector apprenticeship programmes had an impressive employment record as 28 percent started up their own business, 57 percent got employed within informal sector enterprises while 15 percent got employed in the formal sector.

Overall, while the ILO sponsored surveys provide us with valuable data on, and descriptions of various characteristics of the urban informal sector, they neither describe nor explain the actual pedagogical processes underlying informal apprenticeships, nor provide a comprehensive picture of their cost-effectiveness. The present study addressed this factor.

Fluitman and Oudin (1992) carried out a study in Lome, Togo, which examined the nature of skill acquisition and work in the informal sector. The study, employing questionnaires as the main instruments for data collection, covered a sample of 528 entrepreneurs and 128 apprentices. A major observation of the study was that while informal sector apprenticeship in West African cities such as Lome' is a well established phenomenon, it was not equally well known. Instead, it suffered from several unsubstantiated assumptions particularly with regard to the characteristics of apprentices. Specifically, it is observed that:

> Over the years, numbers [of apprenticeships] seem to have increased considerably and agreements [between masters and apprentices] seem to have become more formal but, in the absence of careful, systematic research, views on the matter are largely based on casual observation and preconceived notions. The conventional wisdom in typical formal circuits is that informal sector apprentices are mere children, most of them school dropouts killing time with a relative or being exploited by unscrupulous entrepreneurs, that they are badly trained, if at all, and unemployable as a result; and that it is therefore a responsibility of government to step in and set things straight, as recent legislation in Togo is meant to do (Fluitman and Oudin, 1992, p.134).

Three key findings that emerged from the study were:

(i) Only eight percent of the sampled entrepreneurs had received formal pre-employment training, typically for a period of 2-3 years, either in a government centre, with an NGO or other private institution. The rest of the entrepreneurs (92%) had been apprentices in informal sector workshops, usually for 3-4 years;

(ii) It was wrong to maintain that apprentices were essentially primary school failures, as many of them (a majority in the sample) had obtained their primary school certificate;

(iii) That kinship, according to Fluitman and Oudin, played an important, though not exclusive role, in maintaining the apprenticeship system in Togo. Put in their words, "most of the apprentices were indeed directly related (24%) or otherwise previously acquainted (47%) with the master, which suggests an important (but not exclusive) role of kinship in sustaining the apprenticeship system" (Fluitman and Oudin, 1992, p136).

(iv) Informal apprenticeship in Togo is almost always subject to a written contract between a master and a parent of the apprentice, and signed before a witness. Such contracts: complied with rules set by the association to which the master belonged; were largely influenced by the relationship (family, village, ethnic group) between the partners; were subject to arbitration in courts of law in case of disagreements between the parties involved since they stipulated the duration of apprenticeship, payments to be made by the apprentice as well as obligations on the part of the master. Usually, termination of apprenticeship contracts (graduation) was a special occasion marked by celebrations, and the issuance of a "certificate" which is essential for starting self-employment. Without the certificate, aspiring entrants were likely to encounter harassment or worse, from others in the trade, who would argue that such entrants did not only constitute unfair competition by unqualified individuals, but also posed bodily danger to the public; and

(v) The assessment of trainees' post training aspirations revealed that 70 percent planned to be self-employed, 16 percent to get wage employment and 10 percent to pursue further training. Nothing is mentioned about the remaining 4 percent of trainees.

As part of their conclusion, Fluitman and Oudin (1992) argued that Togo's informal apprenticeship system was utterly relevant: it contributed directly, at low cost and effect, to solving a major unemployment problem that faced the country; and it acted as a major recourse, not only for employment but also for skill training in a variety of trades, to a large number of young people.

There exists some other literature on training for the informal sector. For instance, D'Souza and Thomas (1995) have written on the informal sector in India, and Messina (1995) has explored the concept "informal sector"and examined training policies and strategies in the context of Chile. However, these studies and a few others, are essentially literature surveys (most of which has already been cited in this chapter) or case studies of NGOs with projects involving the informal sector. Accordingly, rather than formally review them in this chapter, they are cited in chapter five of this study, where a major discussion of overall findings is made.

Emerging Observations

From the foregoing review of literature on training and related characteristics of the informal sector in other African countries, the following major observations emerge:

Educational backgrounds of Apprentices and Masters

Informal sector apprentices are characterized by low levels of education and, in some cases, are depicted as low academic achievers. In Senegal, for instance, the study (Lubell and Zarour, 1990) established that only 21 percent of apprentices had primary level of education and 3 percent secondary education. In Togo, on the other hand, while the study (Fluitman and Oudin, 1992) argued that informal sector apprentices were not academic failures as a majority

had primary school certificates, it nevertheless confirmed that they had low levels of education. Although not much is said about the levels of education of master craftsmen in these West African studies, there is some indication that the majority of them were illiterate.

However, while these studies have shown the educational levels of informal sector trainees, none has tried to investigate their actual achievement levels in subjects that are known to lay important foundations for further training in vocational occupations, link subject performance as measured in formal school examinations to trainee performance and productivity in the sector, nor demonstrate how differences in levels of education impact on the training process within the informal sector. Simply put, the actual effects of formal education on the various aspects of informal apprenticeships have only been speculated but not sufficiently researched (if at all). This study addresses these concerns.

Duration of Training and Certification of Skills

One characteristic feature of informal apprenticeships appears to be the diversity of practice against a commonality of tensions. The diversity is manifested not only in the differences in length of training periods between enterprises but also across occupations, while a commonality of tensions is revealed in the way those training periods are either imposed and flouted or negotiated and enforced. Even where fixed durations of training were initially stipulated through informal contractual agreements, and exit from training was controlled through ritualistic ceremonies and issuance of "certificate of completion" by masters (for instance Nigeria and Togo), cases of trainees walking out on masters as soon as they realized they had acquired enough skills have been reported. Moreover, attempts to have informal apprentices take government trade tests have largely been met with reluctance on the part of apprentices. Therefore, processes of assessing and certifying skills seem to be one of the principal challenges facing apprenticeship training in the informal sector. This issue is discussed in chapter four of this study.

Aspirations of Apprentices and Post Training Experiences of Graduates

Some of the studies reviewed above have not only investigated the post training aspirations of apprentices, but also examined aspects of post training experiences of informal sector graduates. One of such aspects, which is of direct relevance to the present study, is the nature of employment either desired for, or actually engaged in, upon graduation. In Togo, the study (Fluitman and Oudin, 1992) showed that 70 percent of apprentices aspired to self-employment, 16 percent salaried employment and 10 percent further training. In Senegal, on the other hand, the study (Lubell and Zarour, 1990) revealed that 28 percent of the informal sector graduates were self-employed, 57 percent were salaried employees within the informal sector itself, while 15 percent were salaried employees in the formal modern sector.

The above observation points to two things about the sector. First, that the high levels of aspiration for self-employment among trainees, exist parallel with incidences of low levels of self-employment among graduates of the sector. Second, that although informal apprenticeships make some notable contribution to the formal sector workforce, a majority of informal sector graduates are absorbed by the sector itself. However, it must be noted that these inferences can only be tentative as they are drawn from studies made in only two different countries, and which investigated the two phenomena independently: the study in Togo examined trainee aspirations while that of Senegal examined post training experiences of graduates. There is thus need for further evidence to either reinforce or weaken the inferences made above, and this study provides such evidence from Kenya.

Inter-Sectoral Mobility and Skills Training for the Informal Sector

Evidence from the above studies suggests that despite the perceived inter-sectoral mobility among skilled workers, where graduates of informal apprenticeships moved to the formal modern sector while graduates of formal technical training institutions and formally trained employees of modern enterprises moved to the informal sector, a majority of informal sector entrepreneurs in skilled occupations were trained within the sector itself. The study in Cameroon (Demol and Nihan, 1982), for instance, established that 30 percent of informal sector artisans had had some working experience in the formal sector. The major reason for

moving to the informal sector was the search for better earnings. However, the same study established that 83 percent of informal sector workers were graduates of informal apprenticeships as opposed to only 12 percent who had trained in the formal sector. In Togo, on the other hand, it was established that 92 percent of informal sector workers had trained entirely on-the-job within the informal sector, as opposed to only eight percent who were graduates of formal training institutions (Fluitman and Oudin, 1992). These were some of the central issues researched in this study.

These observations question highly the wisdom of any researcher, planner or anybody else who endeavours to promote skills training *for* the informal sector while rhetorically acknowledging but practically neglecting skills formation *within* the sector itself.

The Kinship Factor and Informal Apprenticeships

In all of the studies reviewed above, there has been a consistent attempt to link skills formation within the informal sector to kinship networks. The perceived positive and negative impacts of kinship relations to informal sector entrepreneurship generally, and skill acquisition particularly, have been discussed. It has been argued, for instance, that in Cameroon the existence of kinship relations between the master and apprentice worked to legitimize checks against exploitation of the apprentice by the master (Demol and Nihan, 1982) while in Togo, it sustained the apprenticeship system (Fluitman and Oudin, 1992).

However, despite the observed tendency to depict kinship relations as playing a significant role in either inhibiting, promoting or otherwise restricting skill acquisition and transfer in the informal sector, evidence from the few studies which have attempted to correlate the trainees' and masters' kinship backgrounds to skills training seems to show the opposite. For instance, as it has already been shown, studies which made empirical investigations of kinship relations between informal apprentices and their trainers established that positive kinship relations were present in only a minority of cases: Cameroon (32%); Senegal (30%); and Togo (24%). Notably, the same belief seems to be held in other countries, and Kenya where no empirical investigations of the kinship factor had till now, not been made.

Conclusion

In this chapter debates about the rationale and mode of providing vocational education and training have been examined. It has been shown that the provision of vocational training within the formal school system has been vilified by research findings and critics, but not entirely abandoned by providers. For mainly economic rather than social and cognitive reasons, there is presently a general advocacy for locating vocational training in specialized post school institutions, especially within enterprises.

In Kenya, the contributions of the informal Jua Kali sector to the country's economic growth through employment generation and skills training, has been acknowledged. However, while there have been specific efforts towards enhancing the employment component of the sector, the training component has largely been incidental to such efforts. Moreover, although the literature reviewed shows that the characteristics of the Jua Kali sector have been reasonably identified and problems fairly understood, it also reveals the prevalence of a number of untested assumptions and problematic conceptualizations of the sector, as well as unresolved issues. These include: definition of the Jua Kali sector; tensions between positive intervention and negative intrusion of the sector by the State and other agencies; education and training for the sector; defining competency levels of Jua Kali workers.

Furthermore, a review of training and related characteristics of the informal sector in four other African countries (Nigeria, Cameroon, Senegal and Togo), has provided valuable evidence about: educational backgrounds of apprentices and masters; duration of training and certification of skills; aspirations of apprentices and post training experiences of graduates; inter-sectoral mobility and skills training for the informal sector; and the kinship factor in informal apprenticeships. However, while such evidence provides firm grounding for a comparative analysis of the informal sector as a mode of vocational training made in chapter five of this study, it also raises a number of critical issues, some of which are clearly beyond the scope of the present study but constitute recommendations for further research made in chapter six. In the next chapter, the research design as well as procedures for data collection, analysis and interpretations are presented and discussed.

CHAPTER 3

RESEARCH METHODOLOGY

CHAPTER 3

Introduction

This study basically comprised a field survey on vocational training in the informal Jua Kali sector in Kenya, and a cross-national comparative review of relevant literature on training and related characteristics of the informal sector in Kenya and some selected countries. The latter has been addressed by chapter two. This chapter provides a discussion of the sampling procedure, instrumentation and some of the major tools applied in analysing and interpreting the data generated by the survey. The survey was aimed at :

(i) Establishing the criteria and procedures used in the selection of trainees who participate in the various vocational training programmes offered by the informal Jua Kali sector;

(ii) Determining the educational profiles (level of formal schooling, and performance in National Primary and Secondary School Leaving Examinations) of Jua Kali trainees and instructors;

(iii) Assessing the internal efficiency of vocational training in the informal Jua Kali sector by examining:

(a) the nature and scope of knowledge and skills offered to, and acquired by trainees (course content);

(b) the methods of instruction and assessment;

(c) the instructor-trainee ratio;

(d) the trainee flow rates;

(e) the unit cost of training; and

(f) the utilization of both human and physical resources;

(iv) Assessing the external efficiency of vocational training in the informal Jua Kali sector by determining:

(a) the average job search period (taken by a trainee between completion of training and his first employment);

(b) the earning capacity of graduates of the sector; and

(c) the graduate cross-sectoral, intra-sectoral and self-employment patterns;

(v) Examining the extent to which the informal Jua Kali sector as a mode of vocational training meets the criterion of relevance as measured by the:

(a) marketability and labour mobility of graduates of the sector;

(b) degree to which graduates of the sector posses the capacity to cope with and influence the technological changes and the underlying skill requirements; and

(c) extent to which the sector fulfills the equity objective by enhancing the life chances of disadvantaged groups, as reflected in the socio-economic backgrounds of its trainees;

(vi) Examining the assumption that the sector limits skill transfer from the instructor (master craftsman) to the trainee to kinship relations, by determining the nature and patterns in kinship relations (if any) between instructors and trainees; and

(vii) Determining the relative contributions of the three modes of vocational training (informal apprenticeship in the Jua Kali sector, formal apprenticeship in the modern

private sector, and formal pre-employment training at public technical institutions) to the informal Jua Kali sector workforce.

In order to realise the objectives of the survey outlined above, the processes and procedures discussed in the sections that follow, were undertaken.

Population and Sampling Procedures

The informal sector of the Kenyan economy, as has already been stated, comprises three major sub sectors: commerce, manufacturing and service sub-sectors. The focus of this study was on occupations falling within the manufacturing and service sub-sectors: motor vehicle, electrical/electronics, welding and fabrications, as well as carpentry and joinery. Specifically, the informal Jua Kali enterprises in the manufacturing and service sub-sectors, and which also provide informal vocational training to apprentices in the trades listed above, constituted the target population[7] for the survey. As it has been pointed out in chapter one, the choice of manufacturing and service sub sectors was based on the fact that these not only provide the major occupations for which substantial skill training is required, but they are also the most common trades in which the mode of vocational training under review is practised.

The survey covered 102 instructors and 177 trainees spread in four of Kenya's eight administrative provinces. The provinces covered by this study were Nairobi, Rift Valley, Nyanza and Western. The choice of these provinces was made on three grounds. Firstly, they represent about 65 percent of the total population in Kenya, are home to five of Kenya's seven largest cities, and by extension constitute a high proportion of the urban informal Jua Kali sector in Kenya. Secondly, they provide a good balance in the analysis of the kinship factor

[7] The target population for this study was defined in terms of Jua Kali sub-sectors and occupations rather than in conventional precise numerical terms, as there was no prior register or inventory of Jua Kali personnel and related resources. The local authorities which licence Jua Kali activities did not maintain any register that classifies them into specific trades/occupations. On the other hand, registers of Jua Kali associations, which could be possible sources of estimating the numbers involved, were not only outdated, but also suffer contestations of who actually constitute a Jua Kali entrepreneur (King, 1996, p.129), represent a minority proportion of entrepreneurs as score are not registered members of any association, and do not (where they exist) give any indication of numbers of trainees involved. On this basis, it was the researcher's opinion that the use of such documents to estimate the actual target population of those under study would be misleading, hence the use of cluster random sampling applied in this study.

with relation to skill transfer in the informal Jua Kali sector, since they represent both a spectrum of provinces that are known to be predominantly inhabited by one ethnic group (Nyanza and Western), and those that are known to be highly cosmopolitan (Rift Valley and Nairobi). Thirdly, they represent provinces that were reasonably accessible to the researcher within the limitations of time and financial resources available for this study. In each of the four provinces, the provincial capital and one district/divisional headquarters (selected on the basis of accessibility) were selected for the study.

The respondents were selected using a two-stage cluster random sampling technique. The first stage involved identifying, at every provincial/district or divisional headquarters (where applicable), the areas where the informal Jua Kali enterprises were located, and dividing those areas into clusters based on the local government administrative boundaries. The names of the clusters, as defined by the local government authorities, were then established and an alphabetical list of those clusters made. Starting from the first cluster on the list, every third cluster was then selected until fifty percent of the clusters had been included. In each case therefore, a certain number of clusters were randomly selected.

The second stage involved a random selection of a given number of Jua Kali enterprises from each of the selected clusters. Since some clusters covered a very large area (with enterprises widely spread), it was not practicable to physically establish the total number and names of all enterprises within each cluster. In order to randomize the selection of enterprises within each cluster therefore, the following procedure was followed:

(i) A list of major streets within a given cluster, along which enterprises were located, was generated and each street assigned a serial number;

(ii) An equivalent number of small pieces of paper, each bearing a serial number that corresponded with only one of the serial numbers on the list, was made. The papers were then thoroughly mixed in a box and one of them randomly picked. Four of the enterprises located along the street whose serial number corresponded with that on the paper that was picked, were selected;

(iii) The actual selection of the four enterprises was dependent on the point at which the researchers entered the street. Once on the street, the first enterprise to come across was selected, and every third enterprise to the left or right (as applicable) along the street, until four enterprises were covered.

Where the selected street had less than the required number of enterprises, step (ii) and (iii) above were repeated to make up the difference;

(vi) All individuals (instructors and trainees) in the selected enterprises then constituted the final sample of specific subjects for the survey.

This procedure yielded sub-samples of 102 instructors and 177 trainees: a combined sample of 279 respondents. Table 1 gives details of the total number of clusters identified in each province, the actual number and names of clusters that were randomly selected, and the specific number of enterprises that were selected in each of the clusters.

Table 1: Sample Clusters

Province	**City/Town**	**Total Number of Clusters**	**Number of clusters Selected**	**Names of Clusters Selected**	**Number of Enterprises selected**
Nairobi	Nairobi	8	4	Southlands Gikomba Githurai River Road	16
Rift Valley	Nakuru	7	4	Shabab Central Bondeni Kaptembwo	16
Nyanza	Kisumu	6	3	Central Kibuye Nyayo	12
Western	Bungoma	5	3	Kanduyi Central Bondeni	12
Total		**26**	**14**		**56**

In drawing the above sample and adopting the two-stage cluster sampling technique, the following assumptions about the target population were made:

(i) Most informal Jua Kali enterprises covering the trades chosen for this study are concentrated in major urban centres (which provide the necessary infrastructure and market for the goods manufactured and services provided by the sector), with fewer being found in rural establishments. Consequently, the rural-urban divide of the informal sector, which is itself difficult to define, would have had no significant distortion of the characteristics of the sector under investigation.

(ii) Although there are regional variations in the numbers and types of enterprises, it was assumed, for sampling purposes, that each selected cluster would have enterprises providing apprenticeship training in all or most of the trades under review, and that each selected enterprise would have at least one instructor and two trainees. This assumption was necessitated by the fact that there was no list of either individual members or enterprises available, at the time of planning and carrying out this study. Such lack of records is a characteristic feature of informal organizations, and not unique to the Jua Kali sector.

(iii) While no specific claim can be made about the level of confidence for this sample, a sample size of between 100 and 200 respondents was deemed large enough to be representative of the target population, and to yield valid results. Thus for the informal Jua Kali sector, the absolute size of the sample rather than the proportion of the target population was assumed to be the major determinant of precision. As Anderson (1990) asserts:

> A somewhat surprising statistical fact is that it is the absolute size of the sample and not the proportion of the population which is the major determinant of precision. Thus... in general, the major gains are made steadily as sample sizes increase to 150 or 200 after which the gains in precision are much more modest (Anderson, 1990, p.201).

Based on the afore-stated assumptions, the sample size for this study, which comprised 102 instructors and 177 trainees was well above the minimum number of subjects (usually 30) needed for a representative sample size to be used in descriptive statistics. The minimum number of 30 subjects has been recommended by several authors: Fraenkel and Wallen (1993, p.92), Cohen and Manion (1989, p.104), Behr (1983, p.13) and Anderson (1990, p.199).

Research Approach and Instruments

Research Approach

This study adopted a survey rather than ethnographic or case study approach. The grounds for the choice of the survey rather than the latter two approaches were threefold. Firstly, the ethnographic approach mainly lends itself well to research issues that are not easily quantified, and is particularly appropriate to the investigation of individuals' behaviours that are best understood when observed within their natural settings (Fraenkel and Wallen, 1993, p.393). However, the focus of this study was not on individuals' behaviours but on organizational processes, products and structures, most of which required quantification.

Secondly, although ethnographic and case study approaches may offer effective techniques of studying certain issues in education, they would have posed basic problems with regard to this study: they are expensive; require extended periods of time especially for data collection; and demand a considerably high degree of flexibility in planning, all of which could not be reasonably accommodated within the constraints of this research framework.

Thirdly, since this was a national-wide policy study, whose purpose (among others) was to make recommendations for improvements in the policies and practices of vocational training in the informal Jua Kali sector, it was imperative that the sample be large enough and representative of the target population. Consequently, the survey approach, with precise quantifiable measures that are a hallmark of survey research (Cohen and Manion, 1980, p.110), and which is also recommended under similar circumstances by Behr (1983), was adopted.

The appropriateness of the survey approach for this study is therefore justified on the basis of the overall purpose of the study, the population on which the study was focussed, and the resources that were available.

Instruments

The main instruments used in this study were questionnaires and checklists. A brief explanation of the appropriateness, construction and content of each of the two instruments is provided below.

(a) *Questionnaires*

Questionnaires are the most common type of instruments used in survey research. It has been argued that if properly constructed and administered, the questionnaire is the best available instrument for obtaining information from widely spread sources (Behr, 1983, p.150). The questionnaire and checklist are also thought to be particularly suitable for quantitative descriptive research which seeks to collect information about the characteristics of a person, group, programme, or other educational entity (Vockell and Asher, 1995, p.21; Tuckman, 1972, p.9). In this study, questionnaires were employed in seeking factual information from Jua Kali instructors and trainees, as well as determining their attitudes and/or opinions.

Two types of questionnaires were constructed, one for the instructors (master craftsmen) and the other for the trainees (apprentices). The trainees' questionnaire, which as shown in *Appendix 1* had 41 items, was specifically designed to collect information on:

(i) The full description of the geographical location of the enterprise to which the trainee was attached (items 1 to 3);

(ii) The sex, age and home district of the trainee (items 4 to 6);

(iii) The trainees' educational and occupational profiles prior to commencing training in

the informal Jua Kali sector (items 7 to 15);

(iv) The trainees' source of information about the existence of training opportunities in the informal Jua Kali sector, and the major reasons that made trainees opt for this sector rather than other formal modes of vocational training (items 16 and 17, respectively);

(v) The cost of training incurred by the trainee (such as fees, stationery, protective clothing, transport, food and accommodation) as well as the allowances received (if any) from the enterprise during training (items 18 to 26). This particular information was used, as explained later, in assessing the cost-effectiveness of vocational training in the informal Jua Kali sector;

(vi) The nature of kinship relations (if any) between the trainee and his/her instructor (items 27/28);

(vii) The socio-economic background of the trainee as reflected by the parents' literacy, level of formal schooling and occupation (items 29 and 30);

(viii) The trainees' perception about the benefits derived from the training being undertaken, and the comparative advantages/disadvantages of the informal Jua Kali sector as a mode of vocational training as opposed to the formal pre-employment mode at a vocational training institution (items 31 to 35);

(ix) The trainees' post-training aspirations regarding the nature of employment (self-employment/salaried job), the type of sector in which employment would be sought (informal /formal), and the expected monthly income (items 36 and 37);

(x) The major problems experienced by trainees during the training period, the trainees' recommendations on how those problems could be solved, and the trainees' overall attitude about the suitability of the informal Jua Kali sector as a mode of vocational training (items 38 to 41).

There were, thus, 41 items in the trainees' questionnaire.

The instructors' questionnaire, as shown in *Appendix 2*, had 45 items. Generally, this questionnaire was designed to collect information that would be used to assess: kinship relations between instructors and their trainees; the instructors' educational and occupational profiles; the relative contribution of the three modes of vocational training to the Jua Kali workforce; the cost-effectiveness of vocational training in the informal Jua Kali sector; and the instructors' perceptions of the major problems militating against effective vocational training in the Jua Kali sector and the recommended ways of addressing those problems. The specific information sought by the instructors' questionnaire was:

(i) The geographical location of the enterprise, the instructors' home district and employment status in the enterprise: sole owner, partner or employee (items 1 to 4);

(ii) The instructors' age and educational profiles (items 6 and 7);

(ii) The instructors' occupational profile: transition period from school to initial training; trade; mode and duration of initial training; career mobility and underlying explanations (items 8 to 19);

(iii) The nature of kinship relations (if any) between the instructor and his/her trainees (items 20 to 22);

(iv) The instructor-trainee ratio, trainee flow rates, graduate placements and trainee recruitment criteria (items 23 to 35);

(v) The training objectives, as well as methods of instruction, assessment and certification (36 to 38);

(vi) The nature of linkages(if any) between the informal Jua Kali enterprises and the formal modern sector, and underlying reasons for the presence or absence of such linkages (items 39 to 41);

(vii) The methods and strategies used by the informal Jua Kali sector workforce to cope with rapid technological changes and their underlying skill requirements (item 42);

(viii) The instructors' perceptions of the potential of the informal Jua Kali sector, the major problems that the Jua Kali enterprises face in their efforts to provide efficient and effective training to their trainees, and the appropriate measures for improving this mode of vocational training (items 43 to 45).

Thus in all, there were 45 items in the instructors' questionnaire. Although the number of items in the questionnaires (41 for trainees' and 45 for instructors') may impressionistically suggest that long questionnaires were used, the actual length of the questionnaires was rationalised by using structured items (as much as possible) and applying appropriate print formatting techniques. The use of structured items, which enabled respondents to select their answers from a number of options, further reduced the total time spent on completing the questionnaires. However, whenever a structured item was used, an "other" choice was provided in order to enable the subjects to write in responses that the researcher may not have anticipated.

A further justification for the number of items used in the questionnaires (and checklists discussed below) was on grounds of improved reliability of data collected. Since some of the information required relied on the ability of the respondent to accurately recall some information such as performance in National Primary and/or Secondary School leaving examinations, it was necessary that some items aimed at counter checking the respondents consistency of responses be included in the questionnaire. As Vockell and Asher (1995) have rightly argued, an inadequate number of observations or items is one of the major sources of unreliability of data. According to them, "a general rule about reliability is that the shorter the measuring instrument or the smaller the number of observations, the greater the opportunity for chance factors to operate, and the more likely that unreliability will be present" (Vockell and Asher, 1995, p.90).

(b) *Checklists*

The checklist, shown in *Appendix 3*, had 31 items and was designed to be completed by managers[8] of the informal Jua Kali enterprises. In designing the checklist for this study, the format of designing checklists for evaluating vocational training programmes which were developed by Hunting, Zymelman and Godfrey (1986) for the World Bank, was adapted. While the questionnaires were used to get information about characteristics specific to individual instructors and trainees, the checklists were primarily designed to get consolidated information about characteristics specific to each Jua Kali enterprise as an entity. The information acquired was used in assessing the efficiency and cost-effectiveness of vocational training in the informal Jua Kali sector. The specific information sought by the checklist was:

(i) The name, year of establishment and geographical location of the enterprise (items 1-3);

(ii) The type of training programme(s), as well as the total number of instructors and students for each training programme (item 4);

(iii) The nature of tenure for the land on which the enterprise was located, type and nature of physical structures (if any), year of construction, cost of construction and maintenance, and the expected life span (items 5 to10);

(iv) The personnel expenditures, such as salaries for instructors, support staff and trainee allowances, incurred by the enterprise; and enterprise expenses on water, electricity and other forms of energy (items 11 to 14, 19 to 21);

(v) The type of equipment, year and cost of acquisition, cost of maintenance and expected life span (item 15);

[8]Managers of Jua Kali enterprises are individuals who, by virtue of being either partners in, or sole owners of the enterprise, are responsible for administrative decisions such as record keeping, budgeting, settling of bills such as rates and staff salaries/trainee allowances etc. This study established that most managers played both managerial and instructional roles.

(vi) The nature and amount of income the enterprise directly receives from the trainees, such as fees (items 16 to 18);

(vii) The managers' assessment of the impact of trainees on the productivity of the enterprise (items 22 and23);

(viii) The trainee flow rate, job placements and underlying explanations (items 24 and 26);

(ix) The external sources of income and/or assistance (if any) that the enterprise received (items 26 to 29); and

(x) The managers' assessment of the adequacy/inadequacy of the quality and relevance of training offered by the enterprise to the trainees, and suggested improvements (items 30 and 31).

Thus, the checklists had a total of 31 items. The use of checklists is usually recommended where a researcher is interested, as was the case for this study, in data representing nominal categories rather than ordinal scales (Tuckman, 1972, Fraenkel and Wallen, 1993). Such data lend themselves to non parametric statistical analyses (where desired) such as the chi-square tests of statistical significance. With respect to the checklist response mode, Tuckman (1972, p.212) argues that there are no specific rules for response mode selection; the kind of information sought and the manner in which data would be treated determines the most suitable response mode. For instance, for instance, if one was investigating age, the respondents can be provided with a blank space and asked to fill in their age, or one may give them a series of age groupings (20-30, 31-40) and ask them to check the one into which their age falls. Given the plurality of activities, training programmes and related characteristics in the informal Jua Kali sector, some of which could not be accurately anticipated by the researcher, the checklist for this study was designed to allow the use of both types of respond mode.

The research tools (trainees' questionnaires, instructors' questionnaires and checklists) used in this study had some combined appropriateness as well as complementary advantages. The use of separate questionnaires for instructors and trainees, for instance, acted as, and allowed for a check on reliability of data. This was particularly evident where parallel information was independently sought from instructors and trainees, and used to test a common assumption, such as the kinship factor in skills transfer within the Jua Kali sector. As shown in the next chapter of this study, for instance, the analysis of responses on kinship relations between the instructor and trainee, which were obtained independently from the respondents, revealed a close agreement (within acceptable limits) between the two groups of respondents, that there were no kinship relations between a majority of instructors and their trainees: 73.7 percent (from instructors responses) and 76.44 percent (from trainees' responses). Moreover, as it is argued elsewhere in this chapter, the use and parallel administration of separate tools for gathering information from trainees, instructors and managers of enterprises allowed the different groups of respondents a reasonable degree of independence and confidentiality, thereby enhancing the chances of obtaining reliable data on certain "sensitive" items.

The three instruments discussed above were designed, constructed and subjected to a pre-test prior to the actual data collection. One of the main purposes of the pre-test was to yield data concerning instrument deficiencies. The results provided valuable information, lessons and experiences which were used to improve and validate the instruments. One such lesson was a realization of the need to use more of items providing structured responses and less of items requiring unstructured responses, owing to the generally busy schedule of trainees and instructors in the informal Jua Kali sector. Another very important lesson was the realization that a number of Jua Kali enterprises are operated on a partnership basis. This means that two or more master craftsmen, often but not always of different trades, combine and establish an enterprise in which some costs such as lease of land, water/electricity bills, and security services are shared. In estimating costs to the enterprise as well as to the different training programmes run by such partners in the same enterprise, there was need to carefully design items that required responses which would discriminate between the two. The significance of the pre test to this study can therefore not be overemphasized.

Having designed, constructed, pre-tested and validated the research instruments, the stage was now set for data collection in the field. A discussion of the actual data collection processes follows here below.

Data Collection

The data collection process, which mainly involved the administration of questionnaires and checklists, was carried out in Kenya's informal Jua Kali sector between April and July 1997. The initial step involved the identification and training of two research assistants. The researcher and his trained assistants then individually visited the selected Jua Kali enterprises for a face-to-face administration of questionnaires and checklists. Once at the enterprise, the researcher and his assistants first sought the managers', instructors' and trainees' consent for their participation in the research, by explaining to them its purpose and significance as well as assuring them of confidentiality where applicable. Thereafter, the questionnaires and checklist(s) were distributed and each respondent asked to complete them individually. In cases where for some reasons the respondents were unable to complete the questionnaires by themselves, they were assisted by the researcher or his assistants. Throughout the exercise, the research team was available to provide any other forms of assistance (such as further clarifications of items in the questionnaires and checklists) as was required by the respondents. At the end of the exercise, the completed questionnaires and checklists were collected. The process was then repeated for each of the enterprises.

The face-to-face strategy of administering questionnaires and checklists was adopted for four reasons. Firstly, results of the pilot study had indicated a need for this strategy as most respondents, who opted for completing the questionnaires on their own and to return them the following day, either lost them or could not themselves be traced by the researcher within the available time. This was particularly true for respondents in the motor vehicle and electrical trades, who sometimes engaged in contracts which required them to work away from their enterprise sites. Moreover, as the pilot study showed, some other respondents who retained questionnaires for completion and submission the following day, simply failed to do so due to what they explained as pressure of work at the enterprise and social demands at home. The

face to face strategy was therefore aimed at ensuring a high return rate.

Secondly, some of the items in the questionnaires and checklists required information that would be considered confidential by the respondents. For instance, trainees were required to explain any training related problems (including instructional) that they experienced, and by implication assess their instructors. Certainly, such information (especially if unfavourable in the eyes of the instructor) would not be given truthfully, at least in this context, unless the trainee was assured that the questionnaire would not end up in the instructor's custody. The face -to-face strategy, where the questionnaire moved from the researcher directly to the trainee and then back to the researcher, provided such assurance.

Thirdly, there was no prior information available from which the exact location of the enterprises, their postal addresses as well as the names and numbers of instructors and trainees could be established. Consequently, despite the acknowledged constraints of finance and other resources, the alternative method of collecting data by postal questionnaire could not have been used. Moreover, as discussed earlier, such a method would have compounded problems of low return rates.

Fourthly, given the then prevailing assumption that the informal Jua Kali sector comprised a workforce with low levels of education, and although this assumption was itself a subject of investigation in this study, adopting a face-to-face administration of the questionnaires and checklists was considered safe as it would enable the researcher or his assistants to clarify any questions or concepts to the respondents, and to ensure a high rate of response.

While the face to face strategy of administering questionnaires proved largely successful, it did not ensure one hundred percent return rate at the end of each exercise. In the few cases where some respondents were either unable to complete and return the questionnaire or checklist the same day, or were absent from the enterprise at the time of initial administration, an appropriate appointment was made for the next or subsequent day(s). This data collection exercise yielded generally high return and response rates among all categories of respondents, and provided the researcher with the necessary confidence of being able to answer the research questions. The response and return rates are provided in the next chapter.

Data Analysis

The data generated by the survey were sorted, coded and then subjected to both qualitative and quantitative analysis at varying degrees, in order to establish and examine the various characteristics and variables respectively that would facilitate interpretations. Corel Quattro Pro 8, a statistical computer programme, was employed in data analysis: sorting data; computations; and generation of tables, charts and graphs. A detailed explanation of the data analysis procedures specific to each variable under investigation is given below.

Educational Profiles of the Jua Kali Workforce

The educational profile of the Jua Kali workforce was addressed by items 7 15 of the trainees' questionnaire and items 6 - 7 of the instructors' questionnaire. These items sought information on the trainees' and instructors' levels of formal education, and the trainees' performance in National Primary and/or Secondary School Leaving Examinations. The analysis of this information was done at three levels:

(i) The highest level of formal education attained by each respondent was classified as either primary, secondary or college (post secondary formal training institution). The proportion of respondents, among trainees and instructors, who had reached each of the three levels was computed, and expressed in percentages. In order to facilitate a comparison of the levels of education among, and between trainees and instructors, charts and a bar graph were generated.

(ii) The trainees' overall performance in the Kenya Certificate of Primary Education (KCPE) was classified as either *Fail, Pass,* or *Distinction.* The classification was based on the trainees' total score (defined as the sum of percentage marks for the seven subjects offered at KCPE). Based on this classification, a *Fail* (0 - 349) refers to the number of trainees whose total score in KCPE did not meet the minimum requirements for admission to a secondary school; a *Pass* (350 - 499) refers to the number of trainees whose total score in KCPE met the minimum requirements for

admission to a secondary school; while a *Distinction* (500 - 700) refers to the number of trainees whose total score did not only meet the minimum requirements for admission to a secondary school, but also symbolised some academic excellence. Similarly, the trainees' KCPE performance in individual subjects was classified as either *Pass* or *Fail*.

(iii) The trainees' mean performance in the Kenya Certificate of Secondary Education (KCSE) was classified as either *Fail, Certificate, Diploma* or *University* while performance in specific subjects was classified as either *Fail*, or *Pass*. The classification of the KCPE mean performance (defined as the symbol representing the average percentage mark for the subjects offered at KCSE) was based on the subsequent level of formal training for which the trainee had attained (if at all) the minimum requirements for admission. *Fail* (symbol D - E) means the trainee had failed to meet the minimum requirements for admission to any subsequent level of formal training, while *Certificate* (D^+ - C^-), *Diploma* (C - C^+) and *University* (B^- - A) mean the trainee had met the minimum requirements for admission to subsequent formal training at certificate, Diploma or University level, respectively. The classification of the trainees' performance in individual subjects as Fail, or Pass is as explained in (ii) above.

The purpose for, and assumption upon which the above analysis of the educational profiles of the Jua Kali workforce was made need to be clarified. Firstly, examining the educational profiles of the Jua Kali workforce (level of formal education, and specific performance in subjects that are usually considered essential in laying a firm foundation for vocational training), was meant to serve two functions: to provide a pointer to the quality of skilled personnel in the informal sector; and to facilitate the testing of the assumption that the informal sector largely consists of people who are school dropouts or graduates with low levels of academic achievements. Secondly, while the trainees' performance in National Primary and Secondary School Leaving Examinations was investigated, that of instructors was not. This was based on the assumption that most instructors would have left school many years ago and would therefore not accurately remember the details of their performance, as opposed to trainees whose memories would still be relatively fresh, having left school only

recently. Further, as this study shows elsewhere, the majority of trainees get employed within the informal Jua Kali sector itself upon completion of training. Consequently, their educational profiles reflect that of potential instructors of the sector.

Skill Transfer in the Informal Jua Kali Sector: The Kinship Factor

Items 21 - 22 in the instructors' questionnaire and 27 - 28 in the trainees' questionnaire were designed to provide information on the kinship relations between instructors and their trainees. In both cases, each respondent was first asked to indicate whether there was any kinship relation between him or her and the instructor or trainee (as applicable). Item 21 in the instructors' questionnaire and 27 in the trainees' questionnaire required the respondent to select a "Yes" option if there was any form of kinship relation and a "No" option if there was none. The "Yes" response was classified as *Positive* kinship relation while the "No" response was classified as *Negative* kinship relation. Items 22 and 28 in the instructors' and trainees' questionnaires respectively required respondents who had indicated that there was a positive kinship relation between them and their instructor or trainee(s) to specify the nature of that relation. The kinship relations were then classified as either *Family* or *Ethnic.* A family relation implies that the instructor and the trainee had a blood relation (were both members of an immediate or extended family) such as brother/sister, cousin/in-laws/uncles, father/son, grandparent, etc. An ethnic relation means the instructor and the trainee did not belong to the same immediate or extended family, but only belonged to the same ethnic group (tribe).

In order to determine the extent to which skill transfer in the informal Jua Kali sector is limited to Kinship relations, the following procedure was followed:

(i) The total number of trainees who had positive kinship relations with their instructors, as well as that of those who had negative kinship relations, was established and denoted (N_p) and (N_n) respectively;

(ii) The percentage of trainees with positive kinship relations, as well as that of those with negative kinship relations was then calculated as shown below:

$$\text{(a) Positive Kinship Relation} = \frac{N_p}{N_s} \times 100$$

$$\text{(b) Negative Kinship Relation} = \frac{N_n}{N_s} \times 100$$

Here N_s is the sample total. Similarly, the percentage of instructors who had indicated positive kinship relations with their trainees as well as that of those who had indicated negative kinship relations, was computed. The results were then tabulated separately: one table for trainees and another one for instructors.

(iii) In order to further examine the nature of kinship relations between the trainees and instructors, the number of trainees whose specified relation could be classified as Family was established and denoted (P_f), while that of those whose specified relation could be classified as Ethnic was denoted (P_e). The percentages of family and ethnic kinship relations were then calculated as shown below:

$$\text{(a) Family Kinship Relations} = \frac{P_f}{N_p} \times 100$$

$$\text{(b) Ethnic Kinship Relations} = \frac{P_e}{N_p} \times 100$$

Again N_p is as defined in (i) above. A similar procedure was followed in analysing the instructors' nature of kinship relations with their trainees

Instructors owned and worked, or were employed, in Jua Kali enterprises whose *geographical location*[9] was either within or outside their own home districts. The influence of the geographical location of a Jua Kali enterprise relative to the instructors' home district, on the assumed tendency for the sector to limit skill transfer to kinship relations, was therefore examined. The specific aim was to establish whether an instructor who owned and worked, or was employed, in an enterprise located in his own home district was more likely to only recruit and train apprentices from either his immediate or extended families, than one who owned or worked in an enterprise located outside his own home district. Items 2 and 4 of the instructors' questionnaire required the instructors to state the geographical location of the enterprise with which they worked, and their own home district, respectively. Using the information provided by these items, a computer sorted list of all instructors who had positive kinship relations with their trainees, as established in (iii) above, and which clearly indicated side by side the instructor's home district and the geographical location of the enterprise, was made. From the list, the number of instructors whose home districts were the same as the districts where their enterprises were located was established, and the corresponding percentage calculated. Having established the percentage proportions of instructors with positive kinship relations between the two groups (those whose home districts were: (i) same as, and (ii) different from, the districts where their respective enterprises were located), it was then possible to evaluate the influence of the geographical location of the enterprise to the presumed tendency of the informal Jua Kali sector to limit skill transfer to kinship relations.

Skills Training for the Informal Jua Kali Sector: A Comparison of Training Modes

The information for determining the relative contribution of the three modes of vocational training (informal apprenticeship in the Jua Kali sector, formal apprenticeship in the modern private sector, and formal pre employment training at public technical institutions), to the

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[9]*Geographical Location* is the term used to describe the exact place where, given a geographical map which defines Kenya's administrative boundaries, a given Jua Kali enterprise would be located. Kenya's district boundaries in general historically tended to be modelled along ethnic considerations. Ones' home district is often defined as his/her place of birth or the geographical location where his/her parents (and by extension most of the kin) live.

informal Jua Kali sector workforce, was sought by item 10 of the instructors' questionnaire. The item required the instructors to indicate whether they had taken their initial training on-the-job in the Jua Kali sector, on-the-job in a private factory/industry/company, or through formal pre-employment at a technical training institution. The data generated were coded into the three modes of vocational training, the percentage proportions for the three modes computed, and the results presented in a chart to facilitate a comparison of the relative contribution of the three modes of training to the supply of skilled workforce for the informal Jua Kali sector.

Informal Jua Kali Mode of Training: The Relevance Criteria

The relevance of the informal Jua Kali sector as a mode of vocational training was assessed by examining the extent to which it meets the three criteria (equity, adaptability, and marketability or labour mobility) discussed in chapter one of this study. A brief explanation of how relevant data for each of the criterion were analysed is given below.

(a) *The equity objective*

The extent to which the sector enhances the life chances of disadvantaged groups, and therefore fulfilling the equity criteria, was addressed by examining the socio-economic backgrounds of trainees. The basic data sought to evaluate the trainees' socio-economic background included: trainees' age and level of education; parents' occupation, level of education and literacy; and the reasons for selecting the informal sector as a mode of vocational training. The justification for using trainee's age and level of education as indicators of socio-economic background is provided in chapter four of this study.

The trainees' ages were classified into four categories: primary school age (6 - 14); secondary school age (15 18); post-secondary school age (19 - 24); and post-basic college age (25 and above). The figures in brackets represent the normal expected age range for people at the stated levels of education and training, assuming the absence of age-grade distortions. Based on this classification, most trainees were expected to fall within the second and third

categories. The actual distribution of trainees by age was established and the result presented in a tables. Apart from giving a pointer to the maturity of trainees in the informal Jua Kali sector, the age distribution provides an indication of the level of social responsibility that the trainees were likely to shoulder. The analysis of trainees' levels of education has already been addressed in the earlier section of this chapter.

The parents' occupation, level of education and literacy were addressed by items 29 and 30 of the trainees' questionnaire. The parents' occupations were classified into four: Unskilled, Skilled, Professional, and Unemployed. Unskilled occupations included those that did not require any special or substantial skill training such as farm labourers or construction workers, domestic workers, petty traders including hawkers etc. Skilled occupations mainly referred to those that were of a technical nature which required special training eg artisans, craftsmen, technicians, drivers, etc. Professional occupations mainly included teachers, lawyers, engineers, medical personnel, civil servants, etc, while those categorised as unemployed were either not actively engaged in a regular income generating activity or were peasant farmers.

The parents' levels of education were classified as: None (for those who never attended formal schooling); Primary; Secondary; College (for those who attained post secondary none degree awarding institutions); or University. Since some parents may never have attended formal schooling but could, for other reasons such as literacy campaigns, read and write, trainees were specifically asked to indicate whether their parents were literate or not. For the purpose of this study, trainees: (i) whose parents' occupations were classified as Unemployed, Unskilled and to a lesser extent Skilled, or (ii) whose parents were either outrightly illiterate or had attained only a primary level of education, were considered to come from a disadvantaged socio-economic background. By establishing (through frequency tabulations) the proportion of trainees who met either criteria (i) or (ii) above, it was possible to make judgement regarding the extent to which the informal Jua Kali sector as a mode of vocational training fulfills the equity objective by providing alternative training opportunities to the disadvantaged.

Item 17 of the trainees' questionnaire required the respondents to give the major reasons that led to their decision to train in the informal Jua Kali sector. The reasons given by respondents were classified into five factors: self employment factor; school fees factor; parental pressure factor; marketability factor; and the practical attachment factor. The self-employment factor denotes those who joined the sector primarily because they considered it as providing the necessary experience and prospects for self-employment upon completion of training. The school fees factor refers to those who joined the sector because they were unable to pay high fees demanded by the formal school system; while the parental pressure factor refers to those for whom the parents' influence (or outright dictates) was the overriding factor that propelled their entry into the sector. The marketability factor refers to those who argued that graduates of the informal Jua Kali sector were more marketable than those of the formal sector, due to the high practical component of the training programmes offered in the sector, while the practical attachment factor refers to trainees who had taken their initial training in the formal pre-employment technical training institutions, and then joined the informal Jua Kali sector for practical skills training. By determining the frequency with which each of the five factors was mentioned, and subjecting the results to a chi-square test of statistical significance, their relative influence on the entry of trainees to the informal Jua Kali sector for training purposes was examined. To the extent that the school fees factor and parental pressure in particular represented the greatest or least influence, the informal Jua Kali sector was judged as fulfilling or not fulfilling the equity objective, respectively.

(b) *The Adaptability to Technological Changes*

The various strategies employed by the instructors and other skilled workers in the informal Jua Kali sector, to cope with technological changes and their underlying skill requirements, were addressed by item 42 of the instructors' questionnaire. For the purpose of this study, these strategies (as identified from the instructors' responses to item 42, and discussed in the next chapter) are fourfold: technological confidence; innovation; intra Jua Kali consultations; and inter-sectoral linkages. A critical analysis of the extent to which the informal Jua Kali sector as a mode of vocational training, meets the criterion of relevance through the development of these technological adaptive capacities and attitudes among its graduates, is

provided in the next chapter.

(c) *Marketability and Labour Mobility*

In order to examine the marketability and labour mobility among graduates of the informal Jau Kali sector, the following procedure was followed:

(i) All instructors who had indicated that they took their initial training in the informal Jua kali sector were selected;

(ii) The job search period, defined as the time taken between completion of initial training and first employment, for each of them was established (from their responses to item 12 of the instructors' questionnaire). The job search period was classified as either: immediate, 3 - 6 months, 7 - 12 months, or over 12 months. The frequency for each category of job search periods was compiled, and from it the mode determined;

(iii) The procedures outlined in step (i) and (ii) above were repeated for instructors who indicated that they had taken their initial training in the formal sector, and the results tabulated in order to facilitate comparisons of job search periods for graduates of the modes of vocational training. To the extent that a training mode produces graduates with a short job search period (less than six months), it is judged as relevant.

(iv) From the list of instructors who had taken their initial training in the informal Jua Kali sector as generated in (i) above, the percentage proportion of those among them, who had indicated (according to item 17 of the instructors' questionnaire) that they had some post-training employment experience in either the formal private or public sector, was determined. Further, using information provided by respondents to item 18 and 19 of the instructors' questionnaire, five important aspects of labour mobility for each of the instructors were established as:

(a) The type of sector in which the instructor had been employment. This was

classified as either *Private* or *Public* sector;

(b) The nature of job skills required and utilised during that employment. The skills were classified as either *Relevant* or *Irrelevant* to what was acquired during the initial training in the Informal Jua Kali sector;

(c) The duration of employment. This was classified as either *Unstable* (less than one year), *Fairly Stable* (1 - 2 years), or *Stable* (above 2 years). The instructors' mobility within the informal Jua Kali sector itself was similarly examined, and a comparison of job stability among graduates of the two modes of training made;

(d) The job status, which was classified as either Ordinary Worker, Supervisory, or Managerial and;

(e) The major reasons for moving from the formal to the informal sector. The reasons were classified as either Better Salary, Resignation, Loss of Employment, Skill Improvement, or Voluntary Retirement for Self Employment.

By examining patterns in the frequencies, and corresponding modes for each of the various aspects of labour mobility for instructors who had trained in the informal Jua Kali sector, as explained under the above classifications a, b, c, d and e, the extent to which the informal Jua Kali sector as a mode of vocational training promotes labour mobility among its graduates, and therefore fulfills the criterion of relevance, was analysed.

Assessment of the Cost-effectiveness of Training

In this study, the standard procedures for evaluating cost-effectiveness were adopted. These are: the ingredients approach to costing (Levin, 1983) and the efficiency evaluations technique (Rossi and Freeman, 1989). Accordingly, the program inputs were estimated in monetary terms, and outcomes determined in terms of actual impact as defined by the various measures

of effectiveness outlined later in this section of the chapter. The first major task therefore, involved the specification and measurement of costs and effectiveness factors. For the purpose of analysis, cost factors for training were reduced to a manageable set of five as recommended by Buchanan (1985) namely: trainee costs; instructor costs; cost of facilities; overhead costs; and instructional development costs. A summation of these costs was done in order to determine the total costs for the training program at the enterprise level.

In order to determine a summation of the trainee costs, the following formula was applied:

$$T' = (NT \times L) (TS + PPD + LO) + NT (TTC)$$

Where T' = Total trainee costs

NT = Number of trainees

L = Course length in months

TS = Trainee salary or allowance per month

PPD = Housing costs per month

LO = Lost opportunity cost per trainee

TTC = Trainee travel costs

Further, in the estimation of fixed costs for capital items such as buildings (where applicable) and equipment or machinery, the cost of capital investment was multiplied by an annualization factor which was deemed to reflect both the depreciation over the lifetime of the item and the return to the capital in an alternative use (that is the social rate of discount, which is not necessarily the same as the official interest rate). Thus the annualization factor (a) for any given service life (n) and social rate of discount (r) was given by the formula:

$$a_{r,n} = \frac{r(1+r)^n}{(1+r)^n - 1}$$

The opportunity cost for a trainee (to the enterprise) was estimated as the difference between the wages of a non-trained employee and those of a trainee during the training period.

The instructor costs were estimated from the salaries (including any allowances such as medical, housing, insurance etc) paid by the enterprise to the instructors over the average training period of a trainee(s). Overhead costs, on the other hand, comprised expenditures on salaries to support staff such as secretary, cashier, security guards, etc as well as expenses on conservancy such as water, electricity (or other sources of energy), and rentals. Instructional development costs were taken as the expenses incurred specifically for developing instructional materials or skills for purposes of improving instructional delivery. These included costs of purchasing teaching aids, stationery, trainees' toolboxes, etc.

Having obtained the costs associated with each of the five cost factors: trainee costs (TC); instructor costs (IC); cost of facilities (CF); overhead costs (OC); and instructional development costs (IDC); the total training cost (Z) was then obtained through a summation of the five cost factors as shown below:

$$Z = TC + IC + CF + OC + IDC$$

The unit cost per trainee (for each enterprise) was then estimated by dividing the total cost (Z) of the program(s) offered by the enterprise by the total number of trainees.

A detailed explanation of how data on the various aspects of cost and effectiveness factors (not discussed above) were analysed is given below.

The Internal Efficiency

The internal efficiency of vocational training in the informal Jua Kali sector was assessed by:

(a) Providing a descriptive analysis of the trainee recruitment or selection criteria and procedures (based on information obtained from responses to items 35 and 16 of the instructors' and trainees' questionnaires respectively), and course content as well as methods of instruction and assessment (based on responses to items 36 - 38 of the instructors' questionnaire);

(b) Establishing patterns in class sizes and determining the instructor to trainee ratios. Data on class size, were generated from responses to items 28 - 34 of the instructors' questionnaire, which asked instructors to indicate: the minimum and maximum numbers of trainees they had had at any one time; the optimum number of trainees (optimum class capacity) they could admit and efficiently train, considering the available resources at the enterprise; and the reasons for generally operating below or above the optimum class capacity. The reasons given were classified as either the adequacy or inadequacy of training *Resources*, the affordability or prohibitive nature of the *Cost* of training, the appropriateness, inappropriateness or lack of clear *Marketing Strategies*, or the positive or negative *Public Image* of the informal Jua Kali sector. This analysis was also aimed at facilitating recommendations for improving the policy and practice of vocational training in the informal sector.

The instructor to trainee ratio was derived from information provided by the instructors' responses to item 20 of the instructors' questionnaire, which had asked each instructor to indicate the number of trainees who were directly under his or her supervision. Since each instructor was considered independently from others, the number of trainees stated directly converted to the instructor trainee ratio without any further calculations. For instance, if the instructor stated that he or she had four trainees, then the instructor to trainee ratio was one to four (1 : 4). This instructor trainee ratio was referred to as the *Current Ratio.* Since the instructors had provided information on their previous minimum and maximum numbers of trainees, it was possible to establish the corresponding instructor to trainee ratios and hence make a retrospective analysis and comparison of the emerging patterns, and their implications for the efficiency of the informal Jua Kali sector as a mode of vocational training. The instructor to trainee ratios derived from the previous maximum and minimum numbers of trainees for each instructor were referred to as *Past Maxima Ratio* and *Past Minima Ratio*, respectively.

(c) Examining the patterns in trainee flow rates, and the underlying reasons. The trainee flow rates were examined at the level of the enterprise as a whole. The analysis of patterns in trainee flow rates entailed:

(i) Establishing the period (**P**) that the enterprise had been in operation since its establishment, and the total number of trainees (**T**) that had been admitted within that period;

(ii) Establishing the number of trainees who had successfully completed their training program(**G**), and the number of those who had dropped out (**D**);

(iii) Deriving the trainee average completion and dropout rates as shown below:

$$\text{Completion Rate} = \frac{G}{T} \times 100$$

$$\text{Completion Rate} = \frac{D}{T} \times 100$$

(iv) Calculating the average annual graduate output of the enterprise, by dividing the number of trainees who successfully completed the program (**G**) by the period (**P**) for which the enterprise had been in operation since its establishment.

(d) Determining the unit cost of training per trainee, as already explained.

The External Efficiency

The external efficiency of vocational training in the informal Jua Kali sector was assessed by:

(a) Determining the nature and rates of employment and unemployment among graduates of the enterprise. This was done at two levels: the individual instructor; and the

enterprise as a whole. In both cases, the analysis involved four stages.

Firstly, the period for which the instructor had worked in the informal Jua Kali sector, or the period the enterprise had been in existence since its establishment, was established.

Secondly, the total number of trainees that the individual instructor had successfully trained, or the number the enterprise had produced, over that period was determined.

Thirdly, the numbers of graduates produced by the individual instructor, and the enterprise as a whole, who were: (i) unemployed; (ii) employed in jobs where they were directly making use of relevant skills that they had acquired from the Jua Kali training; (iii) employed in jobs which had no relevance to the skills that they had acquired from the Jua Kali training, were established.

Fourthly, the proportions of (i), (ii), and (iii) were calculated and the results tabulated.

(b) Determining the average job search period, as already explained under marketability and labour mobility of graduates. By relating each instructor's job search period to his or her initial mode of vocational training, it was also possible to compare the job search periods among graduates of the three modes of vocational training, as they had all contributed to the informal Jua Kali skilled workforce, although in varying proportions.

(c) Determining the earning capacity of graduates from the informal sector. Item 13 of the instructors' questionnaire required the respondents to indicate their monthly salaries. The instructors' salaries were then classified into five levels corresponding with the civil service salary scales. Since the actual entry point for salaries of the civil servants in Kenya is largely based on ones' level of formal education and training, the type of classification adopted here served to facilitate a direct comparison of the earning capacities of the Jua Kali workforce and their counterparts in the formal public sector. The five classifications were: *Unskilled* Level Capacity (below 3000); *Certificate*

Level (3000 - 4500); *Diploma* level (4501 - 6000); *Degree* level (6001 - 7500); and *Postgraduate* level (above 7500). The figures in brackets refer to monthly salary in Kenya Shillings.

The evidence adduced by the analysis discussed in the foregoing sections, provided a basis upon which the effectiveness of the informal Jua Kali sector as a mode of vocational training was assessed, against the general objectives of vocational training, and the specific identified objectives of skills training in the sector.

Summary

In this chapter, whose focus was the survey research on vocational training in the informal Jua Kali sector in Kenya, five key aspects of the survey have been addressed: the specific objectives of the survey have been outlined; a discussion of the sampling procedure made; the types of, justification for, and validation of the instruments employed provided; the data collection procedures explained; and a detailed explanation of the data analysis procedures made. Further, it has been pointed out that while largely employing certain standard sampling, data collection and data analysis procedures, some unique characteristics of the informal Jua Kali sector necessitated a careful adaptation of the same. For instance, some of the unique characteristics and their methodological implications were:

(i) The absence of information on the exact numbers and locations of the target population. As a result of this, a two-stage cluster random sampling technique was employed in order to achieve a certain degree of representativeness. Had a list existed, a simple random sampling technique would have been used, and the task of locating enterprises made easier. However, although the time and money saved from such strategies would have been invested into expanding the sample size, the overall benefits towards improved reliability and validity of the research would have been minimal.

(ii) The variations in durations of training (course length) among trainees within the same training program, as well as variations in monthly incomes for individual instructors (especially those that were self-employed) necessitated that the training costs were assessed as *average estimates* rather than as absolute figures. The latter would have led to more precise figures.

In addition, it has been indicated that overall, the research design, data collection procedures adopted and subsequent data obtained as reflected by both the return and response rates, provide sufficient ground for data analysis, interpretations and discussions to proceed. In the next chapter, the specific results of the survey are presented.

CHAPTER 4

PRESENTATION AND INTERPRETATION OF RESEARCH FINDINGS

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PRESENTATION AND INTERPRETATION OF RESEARCH FINDINGS

Introduction

This chapter provides results of the survey research on vocational training in Kenya's informal Jua Kali sector. The organization, analysis and interpretations of data are made under five major sub-themes:

(i) Return and response rates to questionnaires and checklists;

(ii) Educational profiles of instructors and trainees;

(iii) Skill transfer and the kinship factor;

(iv) Skills training for the informal Jua Kali sector: a comparison of three training modes; and

(v) The assessment of relevance of the sector as a mode of vocational training; and

(vi) The assessment of efficiency and cost-effectiveness of training

Throughout this chapter, familiarity with the specific details of the data analysis procedures, techniques and their underlying assumptions is assumed, as that has been addressed by the previous chapter.

Return Rates

As explained in the previous chapter, two types of instruments were used for collecting data: questionnaires and checklists. Two types of questionnaire were developed and administered: one for completion by the instructors, and the other by the trainees. Checklists were for completion by managers of the Jua Kali enterprises. A face-to-face strategy[10] for the administration of questionnaires and checklists was adopted throughout the exercise.

[10]The face-to-face strategy refers to the process of data gathering in which the researcher and/or his assistants physically visited all sampled enterprises, distributed questionnaires and checklists to respondents, and availed themselves for any clarifications where needed. For reasons discussed in the previous chapter, the use of postal questionnaires was not feasible.

Table 2 shows a break down of the total number of questionnaires and checklists administered, the number returned in each case and the respective return rates expressed as percentages.

Table 2: Return Rates for Questionnaires/Checklists

Instrument	Total Number Administered	Total Number Returned	Percentage Return (%)
Trainees' Questionnaire	184	177	96.0
Instructors' Questionnaire	108	102	94.0
Checklists	58	58	100.0

It may be observed from table 2 that the return rates were generally high for all the three categories of respondents: 96 percent for trainees, 94 percent for instructors and 100 percent for managers of Jua Kali enterprises. The major factors that account for these exceptionally high return rates are:

(i) A face-to-face strategy was used to administer the research instruments. This ensured an on-the-spot collection of questionnaires and checklists, immediately after completion by respondents, thereby minimizing incidences of non-return; and

(ii) Unlike some instructors and trainees, who sometimes get assigned to tasks involving contracts which require them to work away from their enterprise sites, managers of Jua Kali enterprises are usually found at the enterprise sites. Thus while the researchers had a relatively easy and constant access to all managers, the same was not possible for trainees and instructors. This meant that while all trainees and instructors who were present at the time of the visit to the enterprise received a copy of the relevant questionnaire, for reasons explained in the next section, not all were able to respond to the items and return it the same day. In such cases, respondents were left with the questionnaires and requested to return them the following day, although a few failed to. This explains why the return rate among managers was 100 percent while that among trainees and instructors was slightly lower.

In terms of the acceptable return rates for research questionnaires, these returns ensure a high degree of confidence in the findings obtained from the same.

Response Rates

The response rates for each of the items in trainees' and instructors' questionnaires, as well as the checklists are shown in table 3.

Table 3: Item Response Rates

Item No	R/Rate (Instructors) %	R/Rate (Trainees) %	R/Rate (Managers) %
1	99.0	98.0	100.0
2	100.0	100.0	100.0
3	100.0	100.0	100.0
4	99.0	100.0	100.0
5	100.0	100.0	100.0
6	100.0	97.0	100.0
7	100.0	99.0	99.0
8	100.0	99.0	100.0
9	100.0	99.0	100.0
10	100.0	99.0	100.0
11	100.0	98.0	99.0
12	99.0	97.0	100 0
13	100.0	99.0	100.0
14	99.0	99.0	100.0
15	99.0	99 0	100.0
16	98.0	97.0	100.0
17	99.0	99.0	100.0
18	100.0	100.0	99.0
19	100.0	100.0	100 0
20	97.0	99.0	100.0
21	97.0	100.0	100.0
22	99.0	100 0	100.0
23	100.0	92.0	99.0
24	99.0	100.0	99.0
25	97.0	100.0	100.0
26	96.0	100.0	100.0
27	96.0	98.0	100.ú
28	99.0	98.0	100.0
29	98.0	93.0	100.0
30	99.0	90.0	100.0
31	98.0	96.0	100.0
32	99.0	96.0	
33	100.0	96.0	
34	98.0	96.0	
35	100.0	96.0	
36	97.0	97.0	
37	81.0	97.0	
38	91.0	98.0	
39	99.0	96.0	
40	99.0	94.0	
41	92.0	96.0	
42	91.0		
43	97.0		
44	98.0		
45	97.0		

A major observation is that there was a generally high item response rate by all categories of respondents: trainees, instructors and managers. Clearly, the results of, and lessons from the pre-test, which were used in refining the research instruments, as well as the face-to-face strategy of administering instruments, which enabled researchers to clarify any questions or concepts to respondents, played instrumental roles in achieving the significantly high response rates.

As in almost all surveys, however, some items (as shown in table 3) recorded comparably low response rates. Various reasons may account for the comparably low response rates to those items. In the section that follows, such items are identified (under each category of respondents) and brief explanations for the observed response rates are provided.

(a) *Trainees' Response Rate*

Item 30 of the trainees' questionnaire, which required trainees to indicate their parents' level of education, had the lowest response rate (90 percent). Item 23 which sought the trainees' monthly expenditure on transport to and from the enterprise had a 92 percent response rate, while item 29 which required trainees to indicate their parents' occupations had a 93 percent response rate. The only other item with a comparably low response rate (94 percent) was item 40. This item required trainees, who had earlier identified the major problems which they faced during training, to state measures that they thought should be taken to solve each of the identified problems. The rest of the items, as may be seen from table 3, had response rates of 96 percent and above.

There are two explanations for the comparably low response rates to items 29 and 30, which (as indicated above) sought certain information regarding the trainees' parents. Firstly, it is considered a taboo among some communities in Kenya to discuss the dead. Consequently, most trainees whose parents had passed away were either reluctant or outrightly refused to provide any information on their deceased parents. Secondly, some trainees confessed an absolute lack of knowledge about their parents' levels of education, and argued that such had never been a subject of discussion within their families. However, all trainees could tell

whether their parents were literate or not. Implications of this finding are discussed later in this chapter.

The major explanation to the observed response rate to item 23, relates to the inability of some trainees to estimate their monthly expenditure on transport. This was particularly true for those whose mode of transport to and from the enterprise, did not involve direct or predictable use of money. Such trainees explained that since they neither kept records of their expenditures on transport, nor could recall when and how much it cost them over a period of months, it was not possible to estimate the monthly cost. However, most of the trainees who responded to this item had regular modes of transport whose costs were fairly predictable.

While virtually all trainees readily identified and articulated the problems that they encountered during training (as reflected by a 98 percent response rate to item 38), a comparably smaller percentage could equally suggest (as required by item 40) feasible solutions to those problems. This conforms to the general trend throughout this study, where open ended items had comparably lower response rates than closed-ended items. The possible explanation to this observation is that not only do open-ended items always demand more from the respondents than the closed ones, but it is also easy to identify ones' problems, but quite difficult to suggest solutions to the same. It takes careful thought to generate solutions. Moreover, if one can suggest feasible or plausible solutions to problems, it is only resources that can prevent solution.

(b) *Instructors' Response Rates*

The response rates among instructors were generally high, except for items 37, 38, 41, 42 and 45 which recorded comparably low response rates. Item 37 required the instructors to outline specific aspects of the training programme which had been designed to ensure that each of the training objectives (as previously identified in item 36) were attained, while item 38 required them to specify the assessment criteria for each of the objectives. As shown in table 3, item 37 had an 81 percent response rate while item 38 had a 91 percent response rate. An attempt was made to interview some of the non-respondents to these two items, and they explained

that since they always held holistic views of the training programme offered, there had never been an attempt to break it down into "small discrete" training activities or assessment criteria. Morever, they argued that they neither had a formal nor uniform syllabi for all trainees, as they treated each individually according to his needs. These factors explain the comparably low response rates for items 37 and 38.

Item 41, which had a response rate of 92 percent, required instructors (who had indicated in item 39 that they had no links with the formal sector), to explain the absence of such links. Most of the non-respondents to this item were those who had opted to complete the questionnaire on their own and at their homes after duty. Asked to explain their non-response, such instructors simply said "I don't need them"- meaning they did not see any need for linkages with the formal sector. Item 42, on the other hand, required instructors to explain how, in the light of rapid technological changes, they coped with the underlying changes in skill requirements. Most of the instructors whose responses were categorized as non-response simply wrote "it is our secret"- meaning they considered their coping strategies as guarded secrets that should not be divulged to the formal sector. This point is discussed in detail at a later stage in this chapter.

(c) *Managers' Response Rates*

All items in the checklists recorded very high response rates, with only five of the thirty one items recording response rates lower than 100 percent. Two factors account for these high response rates among managers of the Jua Kali enterprises. Firstly, apart from taking time to individually explain to each of the managers the purpose and importance of the study, the researcher (or his assistant) was available to provide necessary explanations or clarifications of items to the respondents, as was required. Secondly, the face-to-face interaction between the researcher and respondents created a good rapport and further reinforced the assurance of confidentiality which had been promised in the cover letter to the respondents.

The foregoing analysis of the return rates, the response rates and observations thereto, call for some explanations of their implications for the subsequent data analysis and interpretations.

In particular, the key question is: would the findings have been different had return and/or response rates been higher? For purposes of this study, the answer to this question is largely no. This may be justified at two levels:

(i) The overall response rate for all items in the three instruments was above 90 percent (except one item which had 81 percent). This is well above the minimum 70 percent response rate, below which is normally considered as lacking validity (Behr, 1983, p.156). In this study therefore, higher response rates would not have had any significant improvements on the validity of the results; and

(ii) Most items, as has already been shown, which had comparably low response rates sought data that were to be subjected to qualitative rather than statistical analysis. The ultimate purpose of such items was to provide information that would facilitate an in-depth understanding of the nature of and perceived solutions to problems experienced by trainees in the informal Jua Kali sector, the content and assessment criteria of the sector's training programs, and the strategies employed by the sector's workforce to cope with technological changes. As shown later in this chapter, the responses received from over 80 percent of the respondents pointed to similar problems, perceived solutions and coping strategies. It is therefore unlikely that the non-respondents would have given information which would have made the findings different.

A further explanation relates to the link between the overall return rates, the response rates to specific items, and the figures used in computing percentages or related statistics. It is clear from the above analysis that while the overall return rate for each instrument is fixed (94% for instructors, 96% for trainees and 100% for managers), the response rates for each item in the three instruments vary. Throughout this chapter (and subsequent ones) therefore, the *sum* or *total* (whenever used in any statistical calculation) refers to the total number of respondents who responded to the particular item(s) that provided information upon which the particular statistical calculation is made.

Educational Profiles of Instructors and Trainees in the Informal Jua Kali Sector

One of the objectives of this study was to test the assumptions that the informal Jua Kali sector largely consisted of people who were school dropouts with low academic qualifications, and who only resorted to joining the sector after failing to qualify for the formal academic or vocational routes. Items 7 - 15 of the trainees' questionnaire and items 6 - 7 of the instructors' questionnaire were therefore designed to establish and examine the educational profiles of trainees and instructors in the informal Jua Kali sector. Accordingly, the items required both the instructor and trainee respondents to indicate the highest level of formal schooling they had attained. In addition, the trainees were required to indicate their mean(overall) performance as well as performance in specific subjects in National School Leaving Examinations, as applicable. The data generated were subjected to frequency tabulations, conversions to percentages and graphical and tabular representations, in order to establish the key characteristics that define the trainees' and instructors' educational profiles.

The results of the above analysis are represented in figures 1, 2, and 3. Figures 1 and 2 show the highest levels of formal education attained by the instructors and the trainees respectively, while figure 3 gives the results of a direct comparison between the instructors' level of formal schooling and that of their trainees.

Figure 1: Level of Formal Education
(Instructors)

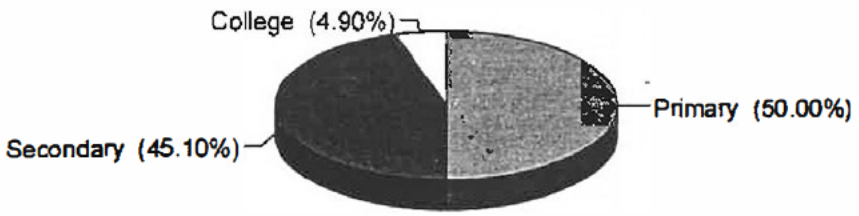


Figure 2: Level of Formal Education
(Trainees)

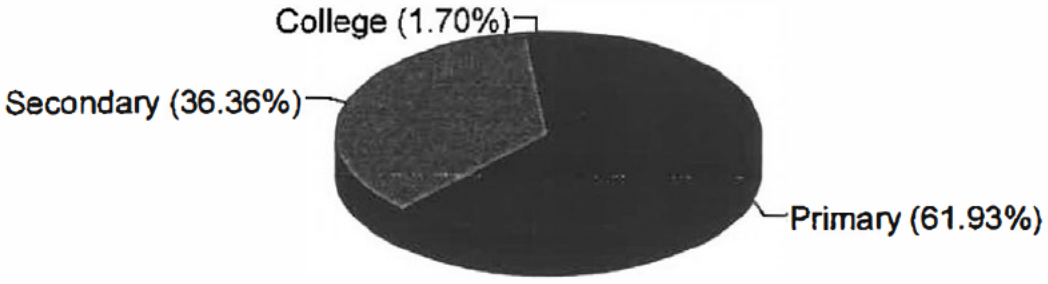
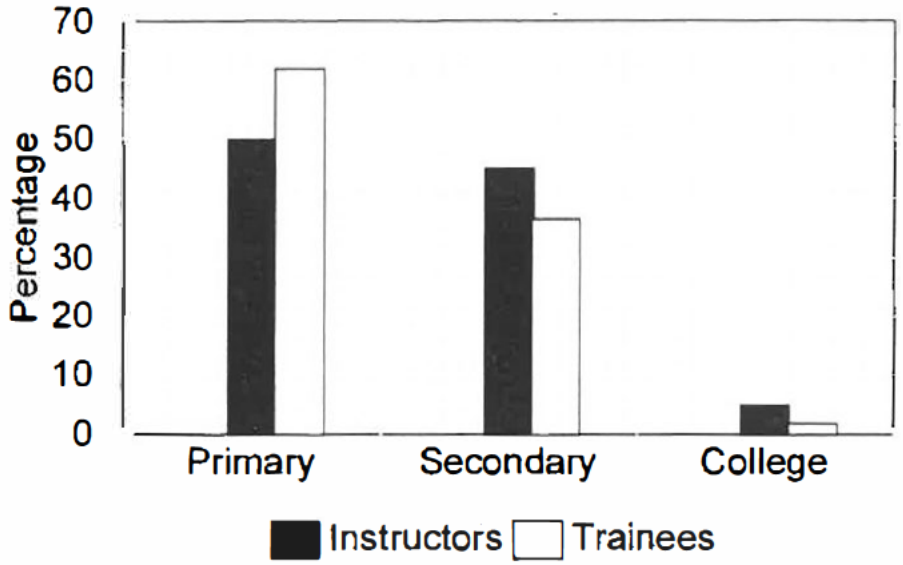


Figure 3: Levels of Formal Education
(Instructors & Trainees)



Two major observations may be made from figures 1 and 2:

(i) About 62 percent of the trainees were primary school leavers, and only 36 percent had attained secondary school level of formal education. Although the results show that about 2 percent of the trainees had some formal college level education, it was

established that this group comprised trainees from formal technical training institutions, who had gone to the informal Jua Kali enterprises for practical field work or attachment.

(ii) The highest level of formal education attained, generally reveals similar patterns among instructors: 50 percent had attained primary level of education; 45 percent secondary level; while about 5 percent had attained college level of formal education.

Figure 3 provides a direct comparison of levels of formal education between the instructors and trainees in the informal Jua Kali sector. It may be observed that the level of formal education (at all three levels: primary, secondary and college) among instructors is generally higher than that of the trainees. Confirming this, some instructors indicated that they preferred trainees whose level of formal education was either the same as or lower than their own. Such trainees, they argued, were obedient, committed and hard working. Those trainees whose level of formal education was higher than that of their instructors, it was claimed, tended to be less respectful and yet demonstrated no better mastery of skills than their counterparts with lower levels of formal education. Although no attempt was made to pair up and compare levels of formal education for individual instructors and their trainees, the above observation seems to suggest that the quality of trainees recruited into the informal Jua Kali sector apprenticeship programmes is a function of the instructors' level of formal education. The policy implications of this observation are discussed in chapter five.

The results of the analysis concerning the trainees' academic performance in the Kenya Certificate of Primary Education (KCPE) and the Kenya Certificate of Secondary Education (KSCE) are summarised in tables 4, 5 and 6. The results are not specific to any one year, as trainees had sat examinations and left school in different years. However, the classification such as mean score or mean grade, upon which admission to subsequent levels of education and training are based, is usually the same each year. Thus regardless of the year in which the trainee sat a particular examination, the classification used in this study would apply.

Table 4: Trainees' KCPE Mean Performance

Mean Score		Number	Percentage
000 - 349	(*Fail**)	32	23.0
350 - 499	(*Pass**)	98	70.5
500 - 700	(*Distinction*)	9	6.5
Total		**139**	**100.0**

Table 5: Trainees' KCPE Overall Performance (at a glance)

	Number	Percentage
Passed *all* subjects	95	70 4
Passed only *some* subjects	40	29.6
Failed *all* subjects	0	0.0
Total	**135**	**100.0**

Table 6: Trainees' KCPE Performance by Subject

Subject	Number Passed	Number failed	Total
English	97 (72%)	37 (28%)	134 (100%)
Kiswahili	100 (74%)	35 (26%)	135 (100%)
Mathematics	95 (70%)	40 (30%)	135 (100%)
Gen. Science	104 (81%)	24 (19%)	128 (100%)
Home Science	99 (74%)	34 (28%)	133 (100%)
Business Education	106 (80%)	26 (20%)	132 (100%)

*Key to *:*

In tables 4, 5 and 6, the trainees' performance is related to the National official definitions of *pass, fail* and *the admission criteria* to the various levels of the formal education and training system. These terms are operationally defined as follows:

Pass Refers to the number of trainees whose score in the subject named, or whose mean score (in the case of table 4) in KCPE met the minimum requirements for admission to a secondary school.

Fail Refers to the number of trainees who failed in the subjects named, or whose mean score in KCPE did not meet the minimum requirements for admission to a secondary school.

Distinction Refers to trainees whose total score did not only meet the minimum requirements for admission to a secondary school, but also symbolised some academic excellence.

It is clear from table 4 that overall, (107) 77 percent of the trainees had qualified (6.5 percent with distinction, 70.5 percent with pass) for admission to secondary school. Further, as shown in tables 5 and 6, the majority of the trainees had passed in all subjects with the highest passes being recorded in General Science (81%) and Business Education (80%), while the lowest pass was recorded in Mathematics (70%).

The analysis of the trainees' mean and subject performance in the Kenya Certificate of Secondary Education (KCSE) is presented in tables 7 and 8.

Table 7: Trainees' KCSE Mean Performance

	Number	**Percentage**
Fail (D - E)	2	6.25
Certificate (D^+)	11	34.38
Diploma (C^- C^+)	18	56.25
University (B^- - A)	1	3.12
Total	**32**	**100.00**

Table 8: Trainees' KCSE Performance by Subject

*Subject	Number Passed	Number Failed	Total
English	26 (81%)	6 (19%)	**32 (100%)**
Kiswahili	25 (78%)	7 (22%)	**32 (100%)**
Mathematics	17 (53%)	15 (47%)	**32 (100%)**
Physics	21 (91%)	2 (9%)	**23 (100%)**
Chemistry	19 (83%)	4 (17%)	**23 (100%)**
Physical Science	5 (71%)	2 (29%)	**7 (100%)**
Business Educ.	20 (80%)	5 (20%)	**25 (100%)**
Applied Subject	17 (90%)	2 (10%)	**19 (100%)**

**Note*: Unlike primary school leaving examinations in which all the examinable subjects were compulsory, the secondary school leaving examinations provide optional subjects to candidates. As a result, one may choose to do physical science instead of physics and chemistry as separate subjects. Accordingly, not all trainees who sat the KCSE examinations had registered for each of the subjects listed in the table above. This explains the variations in the totals among subjects, as shown above. .

Like for the KCPE, the classification of trainees' performance in KCSE (used in tables 7 and 8) is consistent with the official criteria applied nationally for all national examinations. While the actual mark that constitutes a grade such as A, B, C, D, or E may vary slightly from one year to another, the criteria for admission to subsequent levels of formal education and training are usually based on the grades, and do not vary. Based on this classification, candidates whose mean score is D or E do not usually qualify for admission to formal education and training institutions, which offer certificate level or equivalent qualifications. In this regard, it may be seen from table 7 that out of the 32 trainees who sat for the KCSE, only (2) 6.25 percent of them did not meet the minimum requirements for admission to the next levels of formal education and training. Further, the analysis of individual trainee's performance by subject reveals that a total of 17 trainees (53%) passed in *all* subjects taken, while two of them (6%) failed in all subjects taken. The consolidated trainees' KCSE performance per subject is shown in table 8.

From table 8, it is evident that over 71 percent of the trainees passed in each subject (except mathematics which recorded 53 percent pass rate). Thus patterns in the performance among primary and secondary school graduate trainees are largely similar: the majority qualified for progression to the subsequent levels of formal education and training, though they did not proceed. From the foregoing analysis of the educational profiles of trainees and instructors in the informal Jua Kali sector, two major observations emerge.

Firstly, this study provides evidence which confirms that most of the informal Jua Kali workforce have generally low levels of formal education (primary level for most of them). However, the evidence largely contradicts the belief that trainees in the informal Jua Kali sector are largely academic failures who join the sector purely as their only safety valve, having failed to attain necessary academic qualifications for admission to the next cycle of formal schooling such as secondary school. About three quarters of all who sat the six subjects at KCPE passed and only one quarter failed, while over 90 percent of those who sat KCSE had passed as well. The social demand for schooling and training is affected by many variables such as the inability to forego earnings by advancing to secondary education. Although there are some indications (as shown later in this chapter) that the lack of fees, as well as the relatively short course durations and highly practical content of Jua Kali apprenticeship programs are some of the key factors that influence entry to this sector, until we conclusively know why a majority of Jua Kali instructors and trainees choose not to go to higher education, it is wrong to assume they do so due to poor academic performance.

Secondly, this study shows that most of the trainees in the informal Jua kali sector had the necessary foundation in literacy, numeracy and basic scientific principles (within the limitations of the primary and secondary cycle of the country's 8-4-4 system of education), to proceed to the subsequent levels of formal schooling or vocational training. This is reflected in the good performance of trainees in language, mathematics (particularly at primary school level) and science subjects, as already shown.

In view of the above, it is plausible to suggest that strengthening the 8-4-4 curriculum, especially at the primary school level, would have a direct impact on the quality of trainees in the Jua Kali sector. This is in line with the World Bank study of vocational education by

Psacharapoulos and LoxeLy (1985), which argued that *higher levels* of general education are not necessary, but that *good general* education provides a good foundation for vocational education. The *World Bank Policy Paper* on Vocational and Technical Education and Training, has made the same recommendations (Middleton, 1991). Thus a basic quality primary education would save money and maximize gains.

Skill Transfer in the Informal Jua Kali Sector: The Kinship Factor

The extent to which skill transfer in the informal Jua Kali sector is limited to kinship relations was one of the central investigations of this study. Items 21 - 22 in the instructors' questionnaires and 27 - 28 in the trainees' questionnaires, were designed to facilitate this investigation. The items required the respondents to state if they had any kinship relations with their trainee(s) or instructors respectively, and if so, to specify the nature of that relationship as either family or ethnic. As explained in chapter 3, a family relation implies that the instructor and the trainee had a blood relation (were both members of an immediate or extended family) such as brother/sister, cousin/in-laws/uncles, father/son, or grandparent, while an ethnic relation means the instructor and trainee did not belong to the same immediate or extended family, but only belonged to the same ethnic group (tribe). In the results provided here below, where any relation (family or ethnic) was reported, the kinship relation was coded as positive, but where no relation was reported, it was coded as a negative kinship relation. Tables 9 and 10 provide summaries of the findings, based on frequency cross-tabulations of the trainees' and instructors' responses to the kinship relations items.

Table 9: Kinship Relations Between Instructors and Trainees
(Derived from instructors' responses)

Kinship Relation	**Number of Instructors**	**Percentage**
Positive (*Related*)	26	26.26
Negative (*Not Related*)	73	73.74
Total	**99**	**100.00**

Table 10: Kinship Relations Between Trainees and Instructors
(Derived from trainees' responses)

Kinship Relation	Number of Trainees	Percentage
Positive (*Related*)	41	23.56
Negative (*Not Related*)	133	76.44
Total	**174**	**100.00**

It may be noted from tables 9 and 10 that 73.74 percent of the instructors indicated that they had no kinship relations with their trainees, while an equally high percentage of trainees (76.44) indicated that they had no kinship relations with their instructors. Further, out of the 26.26 and 23.56 percent of instructors and trainees, respectively, who reported the existence of some kinship relations between them and their trainees or instructors, only about 19 percent of them (for both groups) could be classified as having family relations. This evidence clearly points to the fact that a large proportion of master craftsmen in the informal Jua Kali sector train apprentices with whom they have no kinship relations.

A further attempt was made to examine whether the geographical location of a Jua Kali enterprise, relative to the instructors' home district, had any significant influence on the assumed tendency of the sector to limit skill transfer to kinship relations. The assumption here was that, if the informal Jua Kali sector limited skill transfer to kinship relations, then instructors who owned or worked in enterprises geographically located in their home districts where a majority of their kinsmen lived, would be more likely to only recruit and train apprentices from either their immediate or extended families, than those who owned or worked in enterprises located outside their own home districts. Information derived from responses to items 2 and 4 of the instructors' questionnaire, was therefore used to examine this factor. Item 2 required the instructors to state the geographical location of the enterprise with which they worked, while item 4 required them to state their home district.

From the analysis (cross-tabulations) of the interrelationships among the variables: the enterprise location, instructor's home district, and kinship relations, it was established that 76.47 percent of the master craftsmen (instructors) either owned and worked, or were

employed, in Jua Kali enterprises whose geographical location was outside their own home districts, where a majority of their kinsmen were expected to live. Further, 20.83 percent of the instructors who owned or worked in enterprises located in their own home districts had positive kinship relations with their trainees, as opposed to 26.92 percent of those who owned or worked in enterprises outside their home districts. This suggests that regardless of the geographical location of the enterprise, kinship considerations do not significantly influence the recruitment and training of apprentices in the informal Jua Kali sector. Equally, the move away from home areas by most instructors, is a possible pointer to the fact that master craftsmen in the informal Jua Kali sector are astute business people who know the burdens of supporting an unproductive familial labour force.

While conclusive explanations for the above observations are themselves a subject of further research, the evidence provided by this study clearly suggests two facts:

(i) That assumptions which have been held about the limitations of traditional apprenticeships in skill transfer, and which for some reasons have been taken to apply to the informal Jua Kali sector, can no longer be upheld;

(ii) That the informal Jua Kali sector cannot be seen to limit skill transfer to kinship considerations any more than can the formal education and training system in Kenya (especially the public sector), where admissions to various educational and training institutions is based on the *quota* system.

The quota system operates in such a way that a certain proportion of existing vacancies to training institutions or programmes is reserved for local residents of the district where the institution or programme is located. This policy is officially referred to as the District Focus for Rural Development Strategy. As explained earlier, most of the district boundaries are themselves defined and modelled along ethnic lines. It may therefore be argued that the formal education and training system, (which unlike the informal Jua Kali sector, operates and models its processes and practices on the District Focus strategy), is more likely to restrict skills acquisition and transfer to ethnic considerations than the Jua Kali sector. Accordingly, the continued neglect of, or reluctance to support and enhance the training component of the informal Jua Kali sector on such grounds cannot be justified.

As it has been observed in chapter two, evidence from the three studies in Cameroon (Demol and Nihan, 1982), Senegal (Lubell and Zarour, 1990) and Togo (Fluitman and Oudin, 1992), which made empirical investigations of kinship relations between informal apprentices and their masters, have reported largely similar findings. A comparison of their findings with that of Kenya established in this study, is presented in table 11. Consequently, the assumption that the informal sector limits skill transfer to kinship relations cannot be empirically upheld, especially in occupations covered by these studies.

Table 11: Cross-National Comparison of Kinship Relations Between Instructors and Trainees in the Informal Sector

Country	Positive Kinship Relation (%)	Negative Kinship Relation (%)	Total
Kenya	25*	75*	100
Togo	24	66	100
Senegal	30	70	100
Cameroon	32	68	100

- The figures indicated are an average of kinship relations as was computed from trainee responses (76.44%) and instructor responses (73.74%).

Skills Training for the Jua Kali Sector: A Comparison of Training Modes

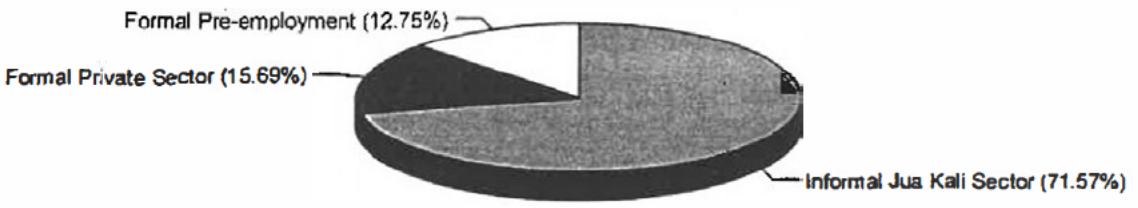
As stated earlier, one of the contributory factors to the apparent neglect of the training component of the informal Jua Kali sector, has been the assumption that the formal sector in general, and the public pre-employment vocational training institutes in particular, are the principal sources of supply for this sector's workforce. One of the purposes of this study was therefore to establish and compare the relative contribution of the three modes of vocational training to the informal Jua Kali workforce. In order to do this, item 10 in the instructors' questionnaire required each of them to indicate where he/she had taken initial training for the job: on-the-job training in the private modern sector; formal pre-employment training at a vocational/technical training institute in the public sector; or on-the-job training in the informal Jua Kali sector. A frequency tabulation for their responses was made, and a chart

generated to facilitate a comparison of the three modes of training. Figure 4 gives a summary of the results.

It is evident from figure 4 that just over 71 percent of the instructors trained on-the-job within the informal Jua Kali sector itself, 15.69 percent in the modern private sector, while only 12.75 percent trained in the formal pre-employment technical training institutions. This evidence largely contradicts policy assumptions that formal technical training institutions are

Figure 4: Mode of Vocational Training

(Instructors)



the principal sources of supply for skilled workforce in the informal Jua Kali sector, and instead asserts the significance of the training component of the sector, in meeting its own labour force needs. Specifically, it suggests that the contribution of formal pre-employment technical training institutions to the skilled workforce in the informal Jua Kali sector is relatively insignificant, as the sector appears to be self sustaining in terms of skills development. As has been shown in chapter two, similar trends have been reported in Cameroon (Demol and Nihan, 1982) and Togo (Fluitman and Oudin, 1992): that a majority of informal sector skilled workforce were trained entirely on-the-job within the informal sector itself.

A cross-national comparison of the contributions of the formal and informal modes of vocational training to the informal sector workforce is summarised in table 12.

Table 12: Cross-National Comparison of Modes of Training for Informal Sector Workers

Country	Mode of Training		Total (%)
	Informal Apprenticeship (%)	Formal Apprenticeship or Institutional (%)	
Kenya	72*	28*	100
Cameroon	83	17	100
Togo	92	8	100

* Figures rounded up.

Clearly, the policy of enhancing the development of the informal Jua Kali sector by strengthening vocational training programs in formal technical training institutions, which has been based on the assumption that those institutions are the major suppliers of the skilled workforce in the informal Jua Kali sector, needs re thinking. Strengthening the informal Jua Kali sector would be achieved by formulating relevant training policies, and channelling resources directly to the sector itself, rather than doing this indirectly through support of the formal sectors.

The Informal Jua Kali Mode of Training: Assessment of Relevance

Assessing the relevance of the informal Jua Kali sector as a mode of vocational training was one of the objectives of this study. As explained in chapter three, the relevance of the sector as a mode of training was assessed by examining the extent to which it fulfills the three criteria of relevance, namely: the equity objective; adaptability to technological changes; and marketability/labour mobility of its graduates. The results of the analysis on each of these criteria now follows.

(a) The Equity Criterion

The extent to which the informal Jua Kali sector as a mode of vocational training fulfills the equity criterion of relevance, by enhancing the life chances of disadvantaged groups, may be reflected by the socio-economic background of trainees in the sector. For purposes of this study, three key indicators of the trainee's socio-economic background were examined: trainee's age and level of education; parent's occupation and level of education/literacy; and the reasons for selecting the informal sector as a mode of vocational training. Although the usual practice is to apply parent-specific characteristics (occupation, level of education and income) as criteria for measuring pupils' or trainees' socio-economic status, this study applied pupil-specific characteristics (trainee's age, level of education and reasons for choosing the informal sector as a mode of training) as well. In the African context generally and Kenyan context in particular, one may argue that the trainee's age and level of education are important indicators as they are closely linked to socio-economic status of the trainee's family. Moreover, studies have shown that repetition and age-grade distortion are most severe among the most deprived (Schiefelbein and Wolff, 1992), and that the demand for the productive contributions of children to the household economy are closely associated with over age (Bowman and Goldblatt, 1984).

In Kenya, like many African countries, it is not uncommon to come across cases where families needing child labour for agricultural production or related activities, withdraw their children from school or where children are forced by the school authorities (teachers) to repeat grades where they have failed to learn the requisite material during the year, because of work related distractions. Moreover, children coming from regions marked by long distances between their homes and the nearest school, are given time to mature to a stage that they can endure walking such distances, before they enroll in such schools. In such cases, a child's age at a particular grade, or trainee's age at a particular level of training for this case, will be found to be higher than expected. Accordingly, over-age could be due to delayed enrollment (late entry) into primary school, or repetition of grades. Equally, the poor are more likely to enroll late, repeat grades and eventually drop out of school. For such people, the levels of education are likely to be low. Further, if stated reasons for joining the informal sector, are largely

economic in nature, they could also give a reasonable indication of the trainee's socio-economic status. Understandably, while such factors may not conventionally be considered as important indicators of socio-economic status, their importance and relevance in the Kenyan context cannot be ignored.

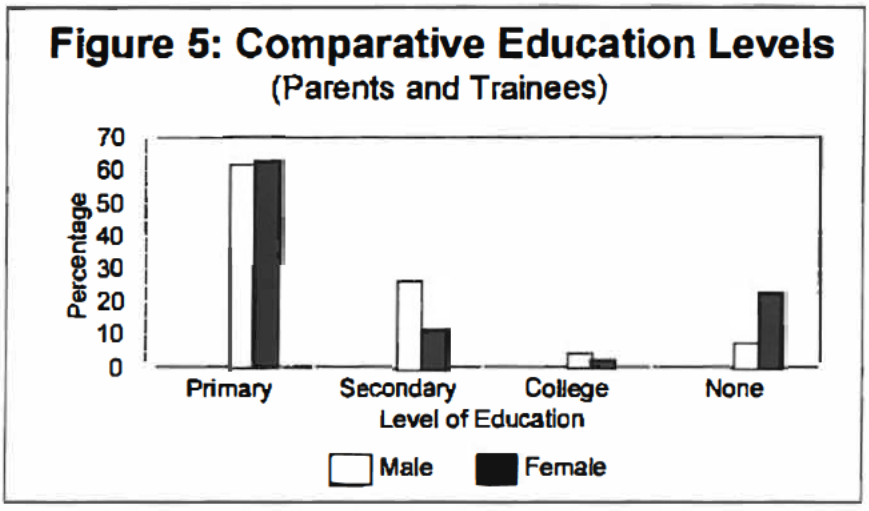
The frequency tabulation of the trainees' age distribution, derived from responses to item 5 of the trainees' questionnaire, is shown in table 13, while table 14 shows the parents' occupational distribution (derived from item 29 of the trainees' questionnaire).

Table 13: Trainees' Age Distribution

Age	**Number**	**Percentage**
6 -14	0	0.00
15 - 18	51	28.81
19 - 24	115	64.97
25 and Above	11	6.22
Total	**177**	**100.00**

Table 14: Occupational Distribution of Trainees' Parents

Occupation	**Male**		**Female**	
	Number	**%**	**Number**	**%**
Unskilled	89	53.94	125	75.76
Skilled	49	29.70	1	0.60
Professional	15	9.09	5	3.03
Unemployed	12	7.27	34	20.61
Total	**165**	**100.00**	**165**	**100.00**



In figure 5, the trainees' male parents' level of education is contrasted with that of their female parents. Data on the parents' literacy and levels of formal education were generated by the trainees' responses to item 30 of the respective questionnaire. The following observations may be drawn from table13, table 14 and figure 5:

(i) While there were no trainees of primary school-going age (6 - 14) and only 28.81 percent of secondary school-going age (15 - 18), the sample comprised about 71 percent post secondary school age (19 and above) trainees. Given that a majority of trainees (about 62%) were of primary level of education and yet 71 percent were of post secondary school age, this observation points to a high degree of age-grade distortion among Jua Kali trainees, and suggests a poor socio-economic background for most of the;

(ii) A large proportion of trainees belonged to families whose parents were either in unskilled[11] occupations or outrightly unemployed. This is evident from table 12 which shows that only 29.70 and 9.09 percent of the trainees' male parents belonged to professional and skilled occupations respectively. The corresponding figures for female parents are more deplorable as only 0.60 and 3.03 percent belonged to

[11]Included those occupations that did not require any special or substantial skill training such as farm labourers, casual construction workers, domestic workers, petty traders including hawkers etc.

professional and skilled occupations respectively;

(iii) A correlation of the trainees' occupations (trades for which they were training) with those of their male parents who were in skilled occupations, revealed that 146 trainees[12] (90%) were training for occupations which were different from those of their parents, as opposed to 16 trainees (10%) whose occupations were similar to those of their parents;

(iv) A further correlation of the female parents' occupations with that of the male parents showed that 54 percent of the unskilled mothers were married to unskilled fathers, while 46 percent of them were married to fathers in either skilled or professional occupations. This may imply that despite the low percentage of female parents in skilled or professional occupations as observed in (ii) above, there were compensating factors where women married upwards (socio-economically). However, such compensatory factors would have minimal impact in real terms since, as already shown, only a small proportion (about 38%) of male parents were in skilled or professional occupations; and

(v) Most of the trainees' parents had low levels of formal education; 62 percent of male and 64 percent of female parents had primary level, while 8 percent male and 22 percent female parents had no formal education at all. Thus overall, 70 percent of the trainees' male parents and 86 percent of the female parents had either a primary level of education or none at all.

Although 8 percent of the trainees' male parents and 22 percent of the female parents had no formal education, this study found that only 6 and 10 percent of them, respectively, were illiterate. The mismatch between the expected and actual illiteracy levels may be viewed as a positive reflection of the combined efforts by both government and non-governmental organizations to eliminate illiteracy in the country. This has enabled people who never had formal education to read and write.

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[12]This correlation was based on a total of 162 trainees who had specified the type of trade for which they were training.

As explained earlier, an analysis of the reasons that influenced the trainees' choice of the informal Jua Kali sector as a mode of vocational training, it was hoped, would provide an important indicator of the extent to which the sector, serves to enhance the life chances of the socio-economically disadvantaged groups. Accordingly, item 17 of the trainees' questionnaire asked the respondents to outline the major reasons that made them choose to undertake apprenticeship training in the informal sector, rather than other available options. A thematic summation of the responses provided point to various factors that led to the trainees' decision to train in the informal Jua Kali sector. These were coded into five major factors:

(i) *Self-employment factor*: denotes those trainees who joined the informal Jua Kali sector primarily because they considered it as providing the necessary skills, experience and prospects for self-employment upon completion of training;

(ii) *Marketability factor*: denotes the trainees who argued that graduates of the informal Jua Kali sector were more marketable than those of the formal sector, due to the high practical component of the training programmes offered in the Jua Kali sector. Emphasising this point, one of the respondents wrote: "I joined this sector due to the bad example from colleagues who had trained in the polytechnics: they were unemployed and with no practical skills.";

(iii) *Parental pressure factor*: this refers to trainees for whom the parents' influence (or outright dictates) was the overriding factor that propelled their entry into the sector. Often, such pressure was based on the parents' inability to raise fees for the relatively more costly formal system, and the belief that the informal sector offered prospects for guaranteed employment of their sons;

(iv) *School fees factor:* refers to those trainees who joined the sector because they were unable to pay high fees demanded by the formal education and training system. The major difference between this category and (iii) above is the apparent absence of direct parental pressure in influencing the trainee's decision to join the sector; and

(v) *Practical attachment factor*: this comprises trainees who had taken their initial training in the formal pre-employment technical training institutions, and then joined the informal Jua Kali sector for practical skills training.

In order to determine the relative influence that each of the five factors had on the trainees' entry to the informal Jua Kali sector, the frequency with which each of the factors was mentioned was determined and the results tabulated as shown in table 15a. It is evident from table 15a that the most significant factor which influences the trainees' entry to the informal Jua Kali sector appears to be the desire for self-employment, while lack of school fees appears to be the second most significant factor. The least significant factors appear to be the need for practical attachment and parental pressure. Out of the five factors influencing the trainees' entry into the informal Jua Kali sector, only two can be *directly* linked to a poor socio-economic background: lack of fees and parental pressure. The other three factors are indirect measures related to low socio-economic status.

Table 15a: A Comparison of Major Factors that Influence the Trainees' Entry to the Informal Jua Kali Sector as a Mode of Vocational Training: Frequency Cross-Tabulations.

Factor	Frequency	Percentage (%)
Self-employment	93	37.96
School fees	75	30.61
Marketability	55	22.45
Parental pressure	10	4.08
Practical attachment	12	4.90
Total	**245***	**100.00**

Note: Frequency in the above table refers to the number of times each factor was mentioned as having contributed to the trainee's entry to the informal Jua Kali sector. Although most trainees mentioned only one of the five factors, there were some who gave more than one factor. This explains why the total (*245*) in table 13 is higher than *175* (the total number of respondents to this item).

The desire for self-employment, for instance, may not be as much a consequence of poverty as it is a drive for economic independence. Equally, practical attachment in the informal Jua

Kali sector may be as much linked to a search for relevance, as it may to inability to penetrate the wealthy modern sector which may provide skills largely removed from those required of one whose goal is self-employment. Lack of fees and parental pressure on the other hand, are more obvious and direct consequences of low socio-economic status. As shown in table 15a, these two factors (combined) account for just 34.77 percent of trainees' entry into the sector. This would imply that a poor socio-economic background, as a factor directly influencing the trainees' entry into the informal sector, though significant, does not play a dominant role. However, a simple frequency tabulation made above does not tell us whether the differences in influence of the five factors noted above were real or due to chance. In view of this, the Chi-Square (X^2) test of significance was carried out in order to determine the probability that the differences noted among the five factors were real differences and not chance occurrences. Given that the test was based on one sample and five categories, the degrees of freedom (*df*) of 4 was applied and significance level of 0.05 was adopted. Table 15b shows the calculation of the chi square (X^2) based on the formula:

$$X^2 = \sum \frac{(A - E)^2}{E}$$

Where A is the actual frequency and E is the expected frequency.

Table 15b: Actual/Expected Frequencies and Calculation of Chi-Square

Factor	Cited	$\frac{(A-E)^2}{E}$	Not Cited	$\frac{(A-E)^2}{E}$
Self-employment	A: 93 E: *49*	35.5102	A: 82 E: *126*	**15.3651**
School fees	A: 75 E: *49*	13.7959	A: 100 E: *126*	**5.3651**
Marketability	A: 55 E: *49*	0.7347	A: 120 E: *126*	**0.2857**
Parental pressure	A: 10 E: *49*	31.0408	A: 165 E: *126*	**12.0714**
Practical attachment	A: 12 E: *49*	27.9388	A: 163 E: *126*	**10.8651**
Total	**A: 245**	**113.0204**	**A: 630**	**43.9524**

If it is hypothesized that there is no difference in the degree to which each of the five factors influence the trainees' entry into the informal Jua Kali sector, then the expected frequency (E) with which each of them would be cited, would have been $(245 \div 5) = 49$. Similarly, the expected frequency for those not citing each of the five factors would have been $(630 \div 5) = 126$. However, as shown in table 15b, there is a discrepance between the expected and actual (observed) frequencies. The Value of X^2 as calculated from table 15b is 156.9728, at .05 confidence level. This value clearly exceeds 9.49, the expected value from the chi-square probability table, and is therefore significant at 0.05 level. Accordingly, the likelihood that the distribution of frequency tabulations for the five factors shown in table 15a would have occurred simply as a function of chance is less than 5 percent. On this basis, it is plausible to conclude that the difference in the frequencies with which the five factors were cited was as a result of the difference in their relative influence in propelling the trainees' entry into the informal Jua Kali sector. Consequently, this test suggests that the inferences drawn earlier, that self-employment is the most significant factor that influences the trainee's choice of the informal Jua Kali sector as a mode of vocational training, and that a poor socio-economic background, while clearly characteristic of most trainees, does not play a dominant role, are statistically valid.

From the foregoing analysis of the trainees' age, parents' levels of education and major reasons influencing their entry into the informal Jua Kali sector, two overall observations are made:

(i) The majority of Jua Kali trainees are characterized by age-grade distortions, and come from families whose parents have low levels of formal education and either belong to unskilled occupations or are outrightly unemployed. These are characteristics associated with socio-economically disadvantaged families;

(ii) Although the lack of fees for formal education and training is not the dominant factor, it nevertheless features prominently as the second most important factor that influences the trainees' entry into the informal Jua Kali sector.

Given observations (i) and (ii) above, and the fact that most of the trainees had met the minimum requirements for progression to higher levels of formal education and training (as shown earlier), it can be concluded that the informal Jua Kali sector as a mode of vocational training, plays a significant role in enhancing the life chances of the socio-economically disadvantaged groups, and therefore largely meets the equity criteria of relevance. However, as has been shown, the trainees themselves do not seem to directly link their choice of the informal sector as a mode of vocational training, to poverty.

Adaptability to Technological Changes

The production of individuals with the capacity to adapt to technological changes and the underlying skill requirements, is the second criterion of relevance that a training mode should meet. In order to examine the extent to which the informal Jua Kali sector as a mode of vocational training meets this criterion of relevance, item 42 of the instructors' questionnaire required each instructor to explain the strategies he/she employed, as a craftsman and instructor, to cope with technological changes and their underlying skill requirements. From the various responses provided by instructors, a detailed analysis was made, leading to a composite summary of four major identifiable copying strategies: technological confidence; innovation; intra-Jua Kali consultations; and the inter-sectoral linkages. A brief discussion of each of these coping strategies follows.

(i) Technological Confidence[13]

This refers to the deep rooted belief among Jua Kali instructors that they have the necessary adaptive capacity, developed through training and years of practical experience, to design and manufacture, diagnose and repair, or observe and innovate any job aspect within their trades. As a way of illustration, the comments made by one motor vehicle instructor, in an apparent attempt to justify their technological confidence, would suffice.

[13]For further discussion of this strategy, see King (1996, p. 189).

The instructor said:

> As a Jua Kali mechanic, I have a variety of clients: from those driving the most modern cars, to those driving the oldest cars. Since I service all of them, it means that I am conversant with the oldest technology, the medium range one, and the latest one. Moreover, the changes are usually minor, as the basic principles of operation are largely the same. Once I have the tools, I can do anything. But even if I do not have the tools I will find a way of making it work.

From the above quote, it may be inferred that technological confidence, as a coping strategy among Jua Kali instructors, is underpinned by two arguments:

(i) The daily work experiences of Jua Kali instructors (and by implication trainees), operate in such a away that ensures they evolve with, rather then are outpaced by technological changes;

(ii) The occupational practice of instructors, is based on certain broad principles with which they (instructors) are well endowed. Technological changes do not usually imply a significant change (if at all) in those broad principles. Accordingly, the instructors' competences in the broad principles underlying their occupational practices are the locus of their technological confidence. This underscores the importance of practical rather than purely theoretical knowledge in skills related occupations.

Although the two arguments provided above may not offer sufficient explanation of the origin of technological confidence, or measure its actual impact on ones ability to cope with technological changes and the underlying skill requirements, they clearly point to the fact that technological confidence among instructors is a product of both the nature of their training, and experience. Given that the majority of Jua Kali instructors, including the one quoted above, train in the informal Jua Kali sector itself, it may be concluded that as a mode of training, the sector provides technologically adaptive knowledge, skills and attitudes.

(ii) *Technological Innovation*

Innovation was cited as one of the most important strategies employed by the Jua Kali instructors to cope with technological changes and the underlying skill requirements. According to the instructors, technological innovation embraces three dimensions: knowledge, resource and technique. For a motor vehicle mechanic for example, knowledge refers to the ability to identify and explain the problem or task to be performed, and reflect on its possible solutions. Resource refers to a specification of the financial and/or material input, as well as the equipment that would be required to address the problem, while the technique refers to the actual skill(s) that would, in the process of addressing the problem, be employed. For a successful and meaningful technological innovation, it would appear, the three dimensions of innovation (knowledge, resource and technique) are not just desirable but necessary preconditions.

The informal Jua Kali sector enterprises, as explained later in this chapter, are said to work not only under severe financial and material constraints, but a highly competitive business environment. The survival of any enterprise would therefore depend on, among other factors, the provision of high quality and low priced services and products. However, rather than have a damping effect on the growth of the informal Jua Kali sector, these conditions seem to have been, and continue to be instrumental to the prevailing culture of technological innovation among Jua Kali instructors. The nature of innovation takes a wide range. In the resource dimension, original components such as motor vehicles, furniture or electrical/electronic parts are repaired, modified or similar ones manufactured often using scrap, but sometimes new materials, while inexpensive tools and equipment are designed and manufactured within the sector itself. In the knowledge and technique dimension, non-conventional diagnostic procedures are devised and special occupational skills are contextually adapted.

Trainees in the informal Jua Kali sector are therefore socialized into an occupational culture that seemingly lays emphasis on technological innovation. It is in this respect that some of the common sayings found among skilled workers in the informal Jua Kali sector are "*innovate or perish*", and "*nothing is impossible*". Further, it is no surprise that in most Kenyan housed

holds, one would hear expressions like *"take it to Jua Kali"*: signifying a general belief among the public that the Jua Kali artisans or craftsmen have the innovative capacity to make anything that looks impossible to work. This public confidence is a significant factor for success in business where the market is highly competitive.

(iii) *Intra Jua Kali Consultations*

Consultation among Jua Kali instructors, both within and across the enterprises, was highlighted as one of the key strategies for coping with technological changes. These consultations take various forms, are necessitated by certain conditions, and are based on certain assumptions. The common forms of consultation include: seeking for, and exchange of advise among instructors of the same or different occupational specialization such as a motor mechanic consulting another motor mechanic, or an auto electrician consulting a motor mechanic, respectively.

The major condition that necessitates the intra Jua Kali consultations is the tendency for Jua Kali skilled workforce to specialize in certain areas of a trade. For instance, in motor vehicle technology, the areas of specialization may include panel beating and spray painting, body building, motor mechanic, and auto wiring, while in carpentry they may include furniture making/repair or construction work such as building of roofs and associated fittings. Generally, intra Jua Kali consultation is based on two assumptions: that there are different levels of experience and expertise among Jua Kali workers; and that these differences should be exploited positively and collaboratively so as to retain the skills and profits within the informal Jua Kali sector itself, rather than create conditions for the diffusion of the same to the formal sector. Evidently, intra sectoral consultation serves both training and therefore adaptive goals as well as business goals. To the extent that it facilitates the transfer of skills from one craftsman to the other, it serves the training and adaptive purpose, while to the extent that it seeks to restrict profitability within the informal sector, it serves a business goal.

(iv) *Inter sectoral Linkages*

The various forms of linkage between enterprises in the informal Jua Kali sector and those in the formal private sector, were cited by instructors as the other major factor that enhances their adaptive capacity to technological changes. These linkages, as discussed later in this chapter, involve sub-contracting as well as the purchase of tools, parts and spares. Sub-contracting usually involves formal private sector companies which give to the informal sector enterprises some jobs to do or vice versa. However, sub-contracting by the informal sector only occurs where the necessary tools or machinery for a given job cannot be immediately accessed or innovated within the sector itself. One positive effect of inter sectoral linkage would therefore be a transfer of skills between the sectors.

Marketability and Labour Mobility

Marketability and labour mobility, as explained in chapter one and three, constitute the third criterion upon which the relevance of a mode of vocational training is assessed. Briefly, a relevant mode of vocational training should produce graduates who are readily marketable, and whose knowledge and skills enhance labour mobility. In order to assess the extent to which the informal Jua Kali sector meets this criterion of relevance, the career progression profiles of instructors who had taken their initial training in the informal sector were examined, with specific focus on two factors: graduate marketability (as measured by their job search periods), and graduate mobility (as indicated by the direction and magnitude of labour mobility among them). A detailed examination of the results of the analysis of each of the factors is provided below.

Marketability

For purposes of this study, the job search period (defined as the time taken by a graduate of the informal Jua Kali sector between completion of initial training and his/her first employment) was taken as the major indicator of marketability. Accordingly, item 12 of the instructor's questionnaire required each instructor to indicate how long it took him or her to

get the first employment in a job which directly required the skills that had been acquired during the initial training. In order to facilitate a comparison between the job search periods for instructors who were graduates of the informal Jua Kali sector and those of the formal sector (both private and public), frequency tabulations of the instructors' responses and corresponding percentages for the two categories were made separately. Table16 provides a summary of the results.

Table 16: Instructors' Job Search Period

Job Search Period (Months)	**Informal Sector Trained Instructors**		**Formal Sector Trained Instructors**	
	Number	%	Number	%
Less than 3	56	77.80	22	75.90
3 - 6	13	18.80	1	3.50
7 - 12	2	2.80	5	17.20
More than 12	1	0.60	1	3.40
Total	**72**	**100.00**	**29**	**100.00**

Two major observations may be made from table 16:

(i) For both sectors, the majority of graduates (77.8 % for the informal, and 75.9 % for the formal sector) had short job search periods of three months or less;

(ii) In comparison, only 3.4 percent of the informal sector trained instructors had job search periods of more than six months, as opposed to the corresponding figure of 20.6 percent for the formal sector trained instructors. Alternatively, table 16 shows that upon completion of their initial training, 96.6 percent of graduates of the informal sector got employment within the first six months, as opposed to 79.4 percent for graduates of the formal sector.

Although there could be other factors, such as individual preferences by graduates or employers and the nature of initial employment (self or salaried), influencing the job search

period for graduates of the two sectors, it is evident that the informal Jua Kali sector as a mode of vocational training produces graduates who are readily marketable, slightly even more so than those from the formal sector. With respect to the informal Jua Kali sector therefore, the concept of marketability may be viewed in two ways: the readiness with which graduates get employed by enterprises in the informal sector itself or other formal public and private sector establishments; or in case of self-employment, the ability to attract, satisfy and retain clients through the provision of quality and competitive service.

Labour Mobility

As already explained, assessing the relevance of the informal Jua Kali sector (as a mode of training) by determining and explaining the direction and magnitude of labour mobility among its graduates, was one of the central aims of this study. Five aspects of labour mobility among instructors who were graduates of the informal Jua Kali sector were investigated: type of mobility (inter-sectoral and intra-sectoral mobility); the corresponding nature of skills required or utilised (whether relevant or irrelevant to those acquired during initial training in the informal sector); the corresponding highest job status occupied in any of the types of mobility; the patterns in job stability or instability (as measured by the graduate's duration of employment with any given employer/enterprise); and the most important factor influencing movement within or between sectors. Accordingly, items 14 - 19 of the instructors' questionnaire, as explained in chapter 3, investigated the five aspects of labour mobility. In these items, the respondents were asked to state: whether they had worked with any other enterprise (whether in the formal or informal sector); the shortest and longest periods they had worked with any of those enterprises; the major reason for moving from one enterprise to the other (in case of the intra-sectoral mobility in the informal sector) or from one sector to the other; the name of employer and the status occupied in each case. The corresponding skills required were derived from responses to the name of the employer and job status

An analytical summary of the instructors' responses to each of the above aspects of labour mobility is provided in table 17.

Table 17: Results of Intra-sectoral and Inter-sectoral Labour Mobility among Jua Kali Graduates

		Intra-sectoral		Inter-sectoral	
		Number	**%**	**Number**	**%**
Type of Mobility Undergone?	*Yes*	55	75.34	38	52.05
	No	18	24.66	35	47.95
	Total	**73**	**100.00**	**73**	**100.00**
Skills Utilised	*Relevant*	NA	NA	35	92.11
	Irrelevant	NA	NA	3	7.89
	Total	**NA**	**NA**	**38**	**100.00**
Highest Job Status	*Managerial*	NA	NA	0	0.00
	Supervisory	NA	NA	0	0.00
	Ordinary Worker	NA	NA	38	100.00
	Total	**NA**	**NA**	**38**	**100.00**
Employment Duration	*< one yr*	12	23.08	17	50.00
	1 - 2 yrs	17	32.69	10	29.41
	> 2 yrs	23	44.23	7	20.59
	Total	**52**	**100.00**	**34**	**100.00**
Reason for Movement	*Better Solary*	21	38.89	0	0.00
	Resignation	0	0.00	27	77.14
	Lost Employment	3	5.56	8	22.86
	Self-employment	23	42.59	0	0.00
	Skill improvement	7	12.96	0	0.00
	Total	**54**	**100.00**	**35**	**100.00**

Note: In table 17 above, the totals shown for each variable are different. This is because, despite the fact that the variables are presented in the same table (for the sake of quick summary and easier comparisons), information for each variable was derived from different items in the instructors' questionnaire. The totals are therefore based on total response rates to each item. Similarly, a hyphen NA in the table implies that the variable under consideration in that particular column or row is not applicable.

Four major observations may be made from table 17:

(i) There is a significant degree of labour mobility among Jua Kali graduates, both within and across the informal Jua Kali sector. As shown in table 17, at least 75 percent of

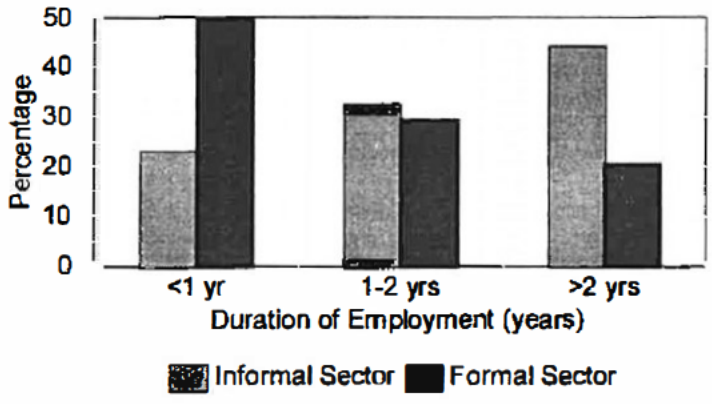
the instructors had undergone some intra-sectoral mobility (moved from one Jua Kali enterprise to another), while about 52 percent had undergone some inter-sectoral mobility (worked and moved from the formal modern sector to the informal Jua Kali sector);

(ii) Out of those who had moved to, and worked in the formal sector, 92.11 percent were employed in relevant jobs where they directly utilised the skills that had been acquired during their initial training in the informal Jua Kali sector;

(iii) As shown in the table 17, none of the Jua Kali graduates who had worked in the formal sector was employed in, or attained a managerial or supervisory status. Instead, all of them were hired, and worked as ordinary skilled workers. This observation has two implications. Firstly, that the formal sector employers recognize the relevance, usefulness and implicit marketability of the practical skills acquired by trainees in the informal Jua Kali sector. Secondly, that while inter-sectoral mobility among Jua Kali graduates may promote technological skill transfer between the two sectors, its contribution to the development of managerial and supervisory skills in the informal sector is insignificant (if any);

Fig 6: Jua Kali Graduate Mobility

(Comparative Sectoral Stability)



(iv) As shown in figure 6 (derived from table 17), labour mobility among Jua Kali graduates in the two sectors reveals two divergent trends. Graduate mobility in the

formal sector is characterised by relatively short intervals, while that in the informal sector is characterised by significantly longer intervals. This is reflected by the fact that while 50 percent of the graduates had less than one year as their longest duration of continuous employment with any one employer in the formal sector, the corresponding figure for the informal sector was only 23.08 percent. Alternatively, only 20.59 percent of the graduates stayed for more than two years with any one employer in the formal sector, as opposed to 44.23 percent for the informal sector. Evidently, graduates who move from one Jua Kali enterprise to another generally stay in employment with any one enterprise for longer periods than those who move from the informal to the formal sector.

Each instructor who had undergone any of the two types of mobility (intra or inter-sectoral) was asked, as has already been stated, to indicate the major factor that influenced his movement. As shown in table 17, there were five major factors identified: need for a better salary; voluntary resignation; loss of employment; desire for self-employment; and desire for skill improvement. The two most significant factors that account for intra-sectoral mobility are the desire for self-employment (cited by 23 (42.59%) of instructors), and the need for a better salary (cited by 21 (38.89%) of instructors). Although the need for skill improvement, and loss of employment were cited as some of the major factors influencing intra-sectoral mobility, their comparative significance is clearly low as they accounted for only 7 (12.96%) and 3 (5.56%) of the cases, respectively.

There are two factors that influence the movement of graduates from the formal sector back to the informal sector: voluntary resignation for the purpose of becoming self-employed; and loss of employment. As shown in table 17, only 8 (22.86%) of the graduates moved due to loss of employment, while 27 (77.14%) voluntarily resigned from the formal sector to be self-employed in the informal sector. The instructors were asked to explain the observed trend of labour mobility initially from the informal Jua Kali sector, to the modern private sector then back to the informal Jua Kali sector. Several explanations were given: prohibitive and restrictive admission criteria for vocational training in the formal sector; need for accumulation of capital as a base for initial investment in self-employment; and avenue for

publicity or self-marketing strategy to prospective clientele. Most instructors argued that while the private modern sector would provide relevant skill training, the emphasis on relatively high academic qualifications, and the correspondingly few available opportunities, shunt out many prospective trainees who then join the informal sector as their alternative starting point. Further, the instructors view lack of capital as a major constraint in establishing an informal sector enterprise in which one would become self-employed. Therefore, initial employment in the modern private sector acts as a means of accumulating capital necessary for self-employment endeavour. A further advantage, it was argued, is that working in the private modern sector exposes them to the customers, who in turn see and acknowledge the quality of their (instructor's) work. When the instructor eventually leaves the formal private sector company and starts his own enterprise in the informal Jua Kali sector, the customers usually follow him because they are assured of good quality workmanship at lower cost than what the formal company would offer. This is what instructors refer to as the self-marketing strategy.

The foregoing analysis of marketability and labour mobility of graduates of the informal Jua Kali sector leads to three major conclusions. Firstly, that although the study does not provide evidence which overrules other competing explanations for the observed marketability of Jua Kali graduates, such as being regarded as sources of cheap labour, it does show that the nature and quality of skills acquired during the initial training play a significant role. Secondly, contrary to popular expectations that labour mobility among Jua Kali graduates is largely unidirectional or skewed in favour of the formal sector, this study provides evidence which indicates that the direction of labour mobility is multi-directional (informal → formal, informal → informal, and formal → informal). Thirdly, although there is a diversity of factors which influence inter-sectoral and intra-sectoral labour mobility among graduates of the informal Jua Kali sector, ultimate is the desire for self-employment. Embedded in the desire for self-employment, is a desire for financial and professional autonomy. As shown later in this chapter, this is one of the key factors that not only acts as an in built mechanism for quality assurance among graduates of the informal Jua Kali sector, but is also a major determinant of innovation: an aspect on which the Jua Kali thrives.

Subsequent to the various observations made and conclusions drawn throughout this section, it follows that the informal Jua Kali sector as a mode of vocational training, largely meets the three criteria of relevance namely: enhancement of equity, graduate adaptability to technological changes and the underlying skill requirements; and the marketability and labour mobility of its graduates.

However, it has already been pointed out that among the key challenges facing the Kenyan system of education and training is not only rising unemployment among school-leavers, but also the rising cost of education against diminishing resources. This implies that the viability of any mode of vocational training will not only be viewed in terms of its relevance, but its cost-effectiveness as well. Accordingly, while the analysis in the foregoing section establishes the informal Jua Kali sector as a largely relevant mode of vocational training, the next section provides detailed results of the assessment of its cost-effectiveness.

The Jua Kali Sector as a Mode of Vocational Training: Results of the Assessment of the Cost-effectiveness Factor

Analysis of the cost-effectiveness of vocational training in the informal Jua Kali sector, as already explained in chapter three, is made at three levels: determination of the unit cost of training; assessment of the internal efficiency; and the assessment of external efficiency. In each case therefore, the cost or effectiveness factors are specified and measured. Detailed results of the analysis of the cost and effectiveness factors follows below.

The Unit Cost of Training

For purposes of this study, the estimation of the unit cost of training in the informal Jua Kali sector was based on five cost factors: trainee costs; instructor costs; cost of facilities; overhead costs; and instructional development costs. Due to the expected differences (such as type and size of training programmes, and management styles) among Jua Kali enterprises sampled for this study, the above cost factors were estimated for each of the enterprises, the corresponding unit costs derived, and then the average unit cost of vocational training in the

sector, per programme, finally computed.

Table 18 provides a summary of cost factors for each enterprise, as derived from responses of managers of Jua Kali enterprises to the various items in the checklist. Since detailed explanations of the procedures, principles and assumptions underlying the estimation of each cost factor has already been provided in chapters one and three, it suffices to highlight some key features in each case.

(i) A summation of the trainee costs for each enterprise was made by applying the formula:

$$T' = (NT \times L)(TS + PPD + LO) + NT(TTC)$$

Where T' → Total trainee costs;
NT → Number of trainees
L → Course length in months
TS → Trainee salary or allowance per month
PPD → Housing costs per month
LO → Lost opportunity cost per trainee
TTC → Trainee travel cost

The lost opportunity cost was estimated as the difference between what the enterprise would pay an untrained employee and the salary or allowance paid to the trainee.

(ii) Instructor costs were estimated by the summation of salaries (and other related allowances) paid to instructors over the average training period of a trainee. Since even under one programme trainees may take different durations to qualify, managers were asked to indicate the average training period for the programme(s) offered.

(iii) The cost of facilities was estimated by making a summation of fixed costs for capital items such as buildings (where applicable), and equipment/machinery. In each case, the annualised cost of capital investment (obtained by multiplying the cost of capital investment by a given annualization factor, as explained in chapter 3, was used.

(iv) The overhead costs refers to a summation of expenses on: salaries and allowances to the support staff; water, electricity and/or other sources of energy; licencing fees; and rentals, over the average period taken by a trainee to qualify.

(v) Instructional development costs (where applicable), comprised a summation of expenses incurred specifically for developing instructional materials or skills for purposes of improving instructional delivery.

In order to maintain confidentiality, which was not only requested by most respondents but pledged by the researcher, specific names of enterprises that participated have been replaced by coded serial numbers. The sample for this study comprised forty eight Jua Kali enterprises. However, the analysis in table 18 comprises forty four enterprises. Four of the enterprises which had not given enough information to allow a comprehensive estimation of the five cost factors were excluded from this particular analysis. Those excluded were code numbers 7, 9, 13 and 15. Such enterprises had, for instance, given the type of equipment and year in which it was bought but failed to state the estimated life span or initial cost. Omission of such information rendered it impracticable to estimate the annualised cost of fixed capital and related facilities.

Table 18: Analysis of Unit Cost of Training in Jua Kali Enterprises

(All Costs Expressed in Kenya Shillings: One US$=55 Kenya Shillings)

Enterprise No.	1	2	3	4	5
Training Prog.	MV	MV	MV	Carpentry	MV
Trainee Costs	48,000	18,000	276,000	30,000	540,000
Instructor Costs	204,000	198,000	216,000	84,000	360,000
Cost of Facil.	28,000	0	7,120	3,848	17,355
Overhead Costs	147,200	12,600	151,940	11,150	25,600
Instr/Dev. Costs	0	0	0	6,000	0
Total Costs	**427,700**	**228,600**	**651,050**	**134,998**	**942,955**
No. of Students	4	5	5	2	10
Unit Cost	**107,000**	**46,000**	**130,000**	**67,000**	**94,000**

Table 18 continued

Enterprise No.	6	8	10	11	12
Training Prog.	Welding	MV	Welding	Welding	Welding
Trainee Costs	0	-56,160	-108,000	216,000	1200
Instructor Costs	72,000	240,000	64,000	264,000	42,000
Cost of Facil.	8,000	14,560	48,212	61,925	8,910
Overhead Costs	64,000	66,000	234,800	259,200	11,100
Instr/Dev. Costs	0	0	0	0	0
Total Costs	**144,000**	**264,400**	**239,012**	**801,125**	**63,210**
No. of Students	10	3	3	6	2
Unit Cost	**14,000**	**88,000**	**80,000**	**134,000**	**32,000**

Table 18 continued

Enterprise No.	14	16	17	18	19
Training Prog.	MV	MV	MV	Welding	Carpentry
Trainee Costs	1,629,600	-106,000	18,000	24,000	3,600
Instructor Costs	544,000	36,000	270,000	26,000	156,000
Cost of Facil.	57,640	0	23,250	20,280	3,200
Overhead Costs	132,700	14,400	105,600	6,900	28,400
Instr/Dev. Costs	12,000	0	0	0	0
Total Costs	**2,375,940**	**127,600**	**416,850**	**81,180**	**191,200**
No. of Students	21	3	6	3	5
Unit Cost	**113,000**	**43,000**	**69,000**	**27,000**	**38,000**

Table 18 continued

Enterprise No.	20	21	22	23	24
Training Prog.	Carpentry	MV	MV	MV	MV
Trainee Costs	90,000	345,000	50,400	43,200	-172,800
Instructor Costs	72,000	72,000	456,000	432,000	972,000
Cost of Facil	6,500	14,160	8,574	4,550	14,800
Overhead Costs	54,600	51,900	310,200	246,200	257,000
Instr/Dev. Costs	0	10,000	0	5,000	0
Total Costs	**223,100**	**493,060**	**825,174**	**730,950**	**1,071,000**
No. of Students	8	20	6	24	8
Unit Cost	**28,000**	**25,000**	**138,000**	**30,000**	**134,000**

Table 18 continued

Enterprise No.	25	26	27	28	29
Training Prog.	MV	MV	Welding	Electrical	MV
Trainee Costs	24,000	22,000	-6,000	47,000	-50,200
Instructor Costs	120,000	576,000	144,000	384,000	672,000
Cost of Facil.	10,070	18,860	6,195	3,392	3,248
Overhead Costs	109,920	206,800	77,500	117,000	172,000
Instr/Dev. Costs	0	0	0	0	0
Total Costs	**263,990**	**823,660**	**221,695**	**551,392**	**797,048**
No. of Students	2	10	5	4	7
Unit Cost	**132,000**	**82,000**	**44,000**	**138,000**	**114,000**

Table 18 continued

Enterprise No.	30	31	32	33	34
Training Prog.	Welding	Carpentry	MV	Welding	Electrical
Trainee Costs	-24,000	-42,100	24,600	-6,400	48,000
Instructor Costs	168,000	210,000	540,000	162,000	394,000
Cost of Facil.	4,800	3,060	18,800	6,190	3,370
Overhead Costs	61,200	83,600	206,800	155,000	129,000
Instr/Dev. Costs	0	0	0	0	0
Total Costs	**210,000**	**254,560**	**790,200**	**316,790**	**574,370**
No. of Students	4	7	8	4	6
Unit Cost	**53,000**	**36,000**	**99,000**	**79,000**	**96,000**

Table 18 continued

Enterprise No.	35	36	37	38	39
Training Prog.	MV	Welding	Carpentry	MV	Welding
Trainee Costs	-50,700	-21,000	-42,600	542,000	0
Instructor Costs	620,000	140,000	190,000	384,000	72,000
Cost of Facil.	3,250	4,890	3,010	17,300	0
Overhead Costs	172,000	61,200	77,200	25,600	62,400
Instr/Dev. Costs	0	0	0	0	0
Total Costs	**744,550**	**185,090**	**227,610**	**968,900**	**134,400**
No. of Students	6	4	5	10	3
Unit Cost	**124,000**	**46,000**	**46,000**	**97,000**	**45,000**

Table 18 continued

Enterprise No.	40	41	42	43	44
Training Prog.	MV	MV	Welding	Electrical	MV
Trainee Costs	-56,260	24,900	-6,800	48,620	-51,400
Instructor Costs	260,000	514,000	155,000	372,000	654,000
Cost of Facil.	14,650	17,840	6,190	3,350	3,220
Overhead Costs	66,000	218,800	75,800	117,000	148,000
Instr/Dev. Costs	0	0	0	0	0
Total Costs	**284,390**	**775,540**	**230,190**	**540,970**	**753,820**
No. of Students	4	8	5	4	6
Unit Cost	**71,000**	**97,000**	**46,000**	**135,000**	**126,000**

Table 18 continued

Enterprise No.	45	46	47	48
Training Prog.	Welding	Carpentry	Welding	MV
Trainee Costs	-24,300	-42,180	0	-104,600
Instructor Costs	165,000	250,000	62,000	280,000
Cost of Facil.	4,900	3,060	0	4,610
Overhead Costs	61,200	77,200	68,000	119,800
Instr/Dev. Costs	0	0	0	0
Total Costs	**206,800**	**288,080**	**130,000**	**299,810**
No. of Students	4	6	2	3
Unit Cost	**52,000**	**48,000**	**65,000**	**100,000**

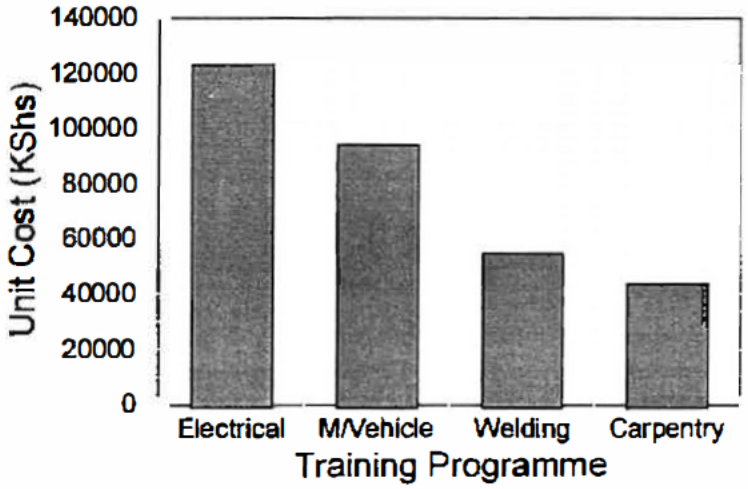
From table 18, it can be observed that the unit cost of training varies widely both between enterprises and training programmes. Specifically, it ranges between 14,000 - 138,000 Kenya Shillings(KShs). However, in order to relate and interpret the above results in terms of the cost-effectiveness of vocational training in the informal Jua Kali sector, two pertinent questions need to be answered. These are: how does each of the five cost factors (trainee costs, instructor costs, cost of facilities, overhead costs, and instructional development costs), relate to the total training cost?; and what trend (if any) emerges when, (a) the total number of trainees, (b) the course length, and (c) the type of training programme (trade), are related to the unit cost of training for each enterprise? From the analysis made in response to these questions, four major observations emerge.

Firstly, for about 90 percent of all enterprises, instructor costs constitute the highest percentage of the total training expenses while the cost of facilities constitutes the lowest. The relatively low cost of facilities is reflective of the innovative nature of the informal Jua Kali sector. As discussed earlier, it is characteristic of the sector to make extensive use of low-cost equipment, most of which is manufactured or fabricated within the sector itself, and to work under the open sun or temporary open shades as workshops instead of expensive modern complexes. Equally, the high instructor costs mostly in terms of salary, is reflective of the observations made earlier about trends in labour mobility, where there is a high tendency for people to opt for self-employment in the informal sector with a belief that the sector offers a better income potential than a comparable status in the formal sector.

Secondly, except for four enterprises, the percentage contribution of instructional development costs to the total training costs for the Jua Kali enterprises is nil. Incidentally, three of the four enterprises which reported having incurred some instructional development costs are the ones with the highest number of trainees (in excess of ten), and the same ones whose instructor costs were lower than trainees costs. This evidence on the lack or modest levels of direct investment in instructional development of Jua Kali training programmes, is indicative of the relative neglect of the training component of the sector alluded to earlier. As discussed in chapter 2, government policy as well as programmes run by other private agencies for the development of the sector have tended to focus on the product rather than the process. For instance, there have been various projects for marketing the products and

services(except vocational training) of the informal Jua Kali sector without a corresponding emphasis on the process(skill development, especially among trainees) by which those products or services come into being.

Fig 7: Av. Unit Cost of Training
(Comparison of Programmes)



Thirdly, the unit cost of training is highest for electrical/electronics trades and lowest for carpentry. This is evident from figure 7, which shows that the average unit cost of training for electrical installation and electronics was Kenya Shillings 124,000, motor vehicle mechanics was 94,000, welding and fabrications was 55,000 while carpentry was 44,000. Further, on average, electrical and motor vehicle training programmes have longer course durations (18 - 36 months) while welding and carpentry have shorter durations (6 - 18 months). This evidence suggests that:

(i) The unit cost of training in the informal Jua Kali sector is a function of the course length: the longer the duration of training, the higher the unit cost is likely to be; and therefore,

(ii) One of the strategies for improving the cost-efficiency of vocational training in the sector lies in addressing issues related to the duration of training.

However, there are four other major factors that impact on the efficiency and effectiveness of vocational training in the informal Jua Kali sector. These are the trainee recruitment procedures, methods of instruction and assessment, instructor- trainee ratio, and trainee flow rates. A detailed analysis of each of these factors now follows.

Trainee Recruitment Practices

Establishing the criteria and procedures used in the selection of trainees who participate in the various vocational training programmes offered by the informal Jua Kali sector, and examining their implications for the internal efficiency of the sector, was one of the aims of this study. In order to do this, the trainees' transition profiles from school to training, and the instructors' perceived trainee recruitment preferences were investigated. Specifically, each trainee was asked to indicate (in the questionnaire): the time lapse between leaving formal schooling and commencement of training in the Jua Kali sector; whether he had any pre-training employment experience; the main source of information regarding the existence of training opportunities in the Jua Kali enterprise; and whether he would recommend the same training for his relatives or friends. The instructors, on the other hand, were asked to indicate what (given a choice) they would consider as the most important quality upon which they would base decisions for trainee recruitment. Table 19 gives a summary of the findings.

From the table 19, it may be observed that on the one hand, only a small majority of trainees(56%) had short transition periods of less than one year while on the other hand, a large majority of them(85%) had no pre training employment experience. Further, the results show that while the family accounted for 77 percent of the trainees' source of information for training opportunities in the informal Jua Kali sector, the school accounted for only 6 percent, the media 10 percent and the enterprises themselves 7 percent. However, although 7 percent of the trainees had indicated the enterprise as their direct source of information about the existence of training opportunities in the sector, it was established that such information was received through self-discovery by the trainees rather than direct marketing by the enterprises.

Table 19: Trainees' Transition Profiles

		Number	Percentage
Transition Period (From School to Work)	Less than one year	98	56.00
	1 - 2 years	49	28.00
	More than two years	28	16.00
	Total	**175**	**100.00**
Trainee Pre-training employment Experience	Yes	26	15.00
	No	149	85.00
	Total	**175**	**100.00**
Trainee's Source of Information for Training Opportunity	Family	132	77.00
	School	10	6.00
	Media	17	10.00
	Enterprise	12	7.00
	Total	**171**	**100.00**
Trainee's Attitude to Training in the Jua Kali Sector	Positive	163	96.00
	Negative	6	4.00
	Total	**169**	**100.00**
Instructor's Preferred Trainee Quality	Level of Education	4	4 00
	Physical Fitness	2	2.00
	Desire for Self-employment	8	8.00
	Interest in Skill Acquisition	84	83.00
	Age	3	3.00
	Total	**101**	**100.00**

Clearly, the school, the media and the Jua Kali enterprises individually or corporately, only play a peripheral role in informing prospective trainees of the existing training opportunities in the informal sector. Thus in contrast to the central role that the school and the media are known to play in marketing vocational training opportunities in formal pre-employment technical training institutions, their recognition of, and support for the training component of the informal Jua Kali sector remains largely passive.

A further observation from table 19 is that 96 percent of the trainees had positive attitudes towards the informal sector as a mode of vocational training. However, as already observed, 85 percent of the trainees had no pre-training employment experience and yet 44 percent of them stayed for over one year before commencing their training in the informal Jua Kali sector. Given that most enterprises operate below their maximum class capacity, as shown later in this chapter, these findings point to a need for:

(i) capacity building for research and marketing among Jua Kali enterprises;

(ii) the development and sustainability of working links between the informal Jua Kali sector and the formal school system;

(iii) the re-orientation and enhancement of the role of media in the marketing of Jua Kali training and services.

In the analysis of instructors' preferences about trainee quality, it was established (as shown in table 19) that a trainee's interest in the acquisition of knowledge and skills offered by the sector was regarded as the most important quality that a prospective trainee should have. Other factors such as the level of education, age, physical fitness and the desire for self-employment, clearly have insignificant influence on the recruitment of trainees to the informal Jua Kali sector.

The foregoing analysis of trainee recruitment practices in the informal Jua Kali sector leads to three overall observations. The first observation is that trainee recruitment by the informal Jua Kali sector enterprises is not guided by, or based upon any clearly defined or pre-determined policies. Usually, it is made on an ad hoc basis, at any time of the year, and upon request by the prospective trainee. This characteristic flexibility in trainee recruitment within the Jua Kali sector is not a weakness; it is an adaptive response to the market dictates, and may be destroyed if measures aimed at addressing programme duration as well regulating starting and completion dates are adopted uncritically. The second observation is that the admission criteria seem to be defined in terms of trainee attitude rather than aptitude. That is why instructors consider the trainee's interest in the knowledge and skills being offered, as

well as the trainee's desire for self-employment as the major determinants of success, rather than the trainee's level of education, physical fitness or age. This confirms what education theory tells us: positive attitudes are pre-requisites for high achievement. The third observation is that although this study does not provide sufficient evidence to explain the relatively long transition periods among 44 percent of the trainees, it does establish that the poor marketing strategies is likely to be one of the contributing factors.

Methods of Instruction and Assessment

The internal efficiency of a training system is influenced by, among other factors, the methods of instruction and assessment. Accordingly, one of the specific objectives of this study was to assess the internal efficiency of vocational training in the informal Jua Kali sector, by examining the methods of instruction and assessment. In order to do this, the instructors were asked to list (in order of priority) the major course objectives, to specify the training activities or instructional aspects of the training programme(s) designed to ensure that each of the stated objectives were attained, and to explain how the trainees were assessed to determine whether or not the objectives had been achieved.

The instructors' responses with regard to the objectives of the training they offered to their trainees were varied. However, some of the key objectives were stated as:

"... to impart practical skills to my trainees";
"... to help my trainees get employment";
" ... to make a name for my business";
"... to get some income from trainees' fees"; and
"... to contribute to national development by creating jobs and preventing crime".

Asked to explain what was meant by making a name for ones' business, the respective instructors clarified that they considered apprenticeship training as one of the most effective strategies of marketing their enterprises. It was argued that recruiting trainees to the enterprise, having them qualify within reasonable periods of time and getting them employed upon

graduation, built a strong reputation for the enterprise. The graduates, it was claimed, then recommended the enterprise to other prospective trainees and therefore acted as living symbols of advertisement. With regard to national development, some instructors argued that by providing training opportunities to the school leavers, they kept the unemployed youth off the streets where they would otherwise be engaged in criminal activities.

It is evident from the instructors' statements of objectives that apart from skill acquisition, the rest (graduate employment; marketing of, and income generation for the enterprise; and crime prevention) have no direct reference to the enterprise-based actual training or instructional processes: they are end products. Conventionally, lack of clearly and coherently stated instructional objectives would be seen as a reflection of a weak and largely ineffective programme. However, a closer scrutiny revealed that for the informal Jua Kali sector, the tendency of course objectives being product-specific rather than process specific is a strength rather than a weakness. The emphasis on graduate employment and image building of the enterprise for instance, demands instructional processes and assessment criteria that are not merely inward looking but market-driven and client-sensitive. Perhaps as hands-on instructors, this is also total quality management in which they correct/rectify as they go along. Moreover, with practical skills, the tangible product to be produced is more specific than objectives specifying knowledge to be acquired.

The methods of instruction in the informal Jua Kali sector, as derived from the instructors' responses to item 37 of the questionnaire which asked them to specify the activities or aspects of the training programme(s) that were designed to ensure that the stated objectives were attained, mainly take the following forms:

(i) Introduction of the trainee to the common occupational ethos and tools;

(ii) Progressive involvement of the trainee in the understanding and application of specific knowledge and skills to given tasks;

(iii) Induction of the trainee to client relations; and

(iv) Involvement of the trainee in formal discussions of some theoretical aspects of the trade.

Although occupational ethos to which the trainee is introduced may vary from one trade and/or enterprise to another, there were three common ones frequently mentioned by the instructors: honesty, endurance and self-confidence. It may be recalled that these virtues are instrumental to the technological confidence and innovation discussed earlier. The knowledge and skills referred to in (ii) above entails the trainee's ability to: select(or innovate) the right tools for given tasks; diagnose a problem or detect a given fault; determine and implement appropriate intervention measures. Induction of the trainee to client relations usually include: bargaining skills, where the trainee negotiates with clients the appropriate cost for services offered; general customer care, where the trainee, upon diagnosing the problem, explains to the client its implications, advises on the acquisition of the required materials(where applicable) and the approximate job duration for addressing the problem, and offers appropriate explanations and/or apologies in case of delays. Theoretical discussions mentioned in (iv) refer to exclusive sessions where some instructors sit with trainees and engage in formal theoretical discussions. Such discussions usually based on portions of textbooks or manufacturers' manuals (where available), are only done by a few enterprises, and usually take place when there are no clients. Some enterprises reported that trainees took notes during such sessions. Most instructors, however, integrated theoretical discussions/explanations with practical sessions as the job progressed.

Although the training activities have been listed as (i) - (iv), the listing does not suggest any hierarchical order in which they are introduced to and development by the learner. Except for the introduction of the trainee to the occupational ethos and tools which is usually the starting point for all enterprises, the rest of the training activities are largely dependent on the nature and type of problems or needs that clients bring to the enterprise. As explained later in this chapter, a steady flow of clients is one of the major determinants of the trainees' duration of training.

The foregoing discussion of instructional processes naturally leads to the next question: how are trainees assessed? How do instructors determine whether or not the stated objectives are

achieved? According to instructors' responses to item 38 which sought information on the criteria/methods of trainee assessment, there is mainly one method, and three criteria of assessment. A formative mode of assessment is used, where the trainee is assessed at certain intervals throughout the course duration. The assessment is usually practical oriented and task specific. This means that a trainee will be allocated a certain task and then asked to perform it. The tasks may range from diagnosis of a problem or reading and interpreting a circuit diagram, to undertaking certain repairs, or manufacturing a given component. Although, as has been stated, assessment is made within certain intervals, such intervals are neither fixed nor pre-planned. In fact, the instructors were quick to contend that in practice, instruction and assessment in the informal sector are closely interlinked. Usually, it is the sole discretion of the instructor to decide what, when, and how to assess.

The three criteria, upon which a trainee is assessed and certified as qualified are:

(i) *Independence*: demonstrable ability to work independently;

(ii) *Instructor Satisfaction*: possession of knowledge and skills, as well as production of the quality work which meet instructor's satisfaction; and

(iii) *Client satisfaction*: production of the quality of work, and development of public relations skills which meet client's satisfaction.

Three observations may be made from the assessment criteria outlined above. Firstly, the apparent emphasis on independence and client satisfaction reflects two key values upon which the informal Jua Kali sector thrives: self-employment is better than salaried employment; and a Jua Kali enterprise is a business venture and customer care is the backbone for its success. Secondly, assessment of trainees in the sector is criterion referenced, where trainee's individual performance is measured against set objectives to be met by the individual. However, the assessment criteria which are largely stated in terms of instructor and client satisfaction, lend themselves to subjective rather than objective interpretations and/or measurements of the quality of service or products. Nonetheless, it reinforces the need to be unique, to curve out a niche: a common practice in business. Thirdly, and more importantly,

the inclusion of client satisfaction as a criterion of assessment embraces the concept of external moderation in the assessment of Jua Kali trainees and, to an extent, minimizes the feared instructor subjectivity expressed above.

Overall, the foregoing analysis of methods of instruction and assessment, gives the impression that internal efficiency of Jua Kali enterprises can vary from year to year and among trainees. Further, the analysis does provide a sound foundation upon which an examination of two other factors (instructor-trainee ratio and trainee flow rates) which have influence on the internal efficiency, will now be made.

Instructor-Trainee Ratio and Trainee Flow Rates

As explained in the previous chapter, the instructor-trainee ratio was examined at three levels: current ratio; past maxima ratio; and past minima ratio. Items 20, 28 and 29 of the instructors' questionnaire had asked each instructor to indicate the total number of trainees that were directly under their supervision then, as well as the maximum and minimum numbers of trainees they had ever had at any one time in the past, respectively. Accordingly, for each instructor, the responses to the three items were directly converted into the current, past maxima and past minima instructor trainee ratios respectively. Table 20 shows a frequency tabulation of the instructors' responses. However, two clarifications of the data presented in table 20 are essential to the subsequent interpretations made below. Firstly, in the first column, an instructor-trainee ratio of 1:0 implies that the instructor had no trainees at a given time, while instructor trainee ratios of 1:1, 1:2, 1:3, and so on imply that the instructors had one, two or three trainees, respectively attached to them at a given time. Secondly, the figures indicated in columns 2,3 and 4 refer to the frequency(number of instructors for whom the instructor-trainee ratio at a given time, was that indicated in a corresponding row under column one). For instance, the frequency of 8 in column two(current ratio) in the first row implies that at the time of the survey, eight of the instructors(respondents in the survey) indicated that they had no trainees, as shown in column one of the corresponding row.

Table 20: Results of the Analysis of Instructor-Trainee Ratios in the Jua Kali Sector

Instructor-Trainee Ratio	Frequency (Current Ratio)	Frequency (Past Maxima) Ratio	Frequency (Past Minima) Ratio
1: 0	8	0	38
1: 1	13	7	29
1: 2	35	22	18
1: 3	17	37	7
1: 4	9	8	4
1: 5	7	9	3
1: 6	3	6	0
1: 7	1	1	0
1: 8	0	4	0
1: 9	0	0	0
1: 10	3	5	0
1: 11 (and above)	2	1	0
Total	**98**	**100**	**99**

From the analysis of instructor-trainee ratio given in table 20 therefore, two key observations may be made.

(i) The most common instructor-trainee ratio in the informal Jua Kali sector ranges between 1:1 and 1:3. Thus on average, instructors in the informal Jua Kali sector train one to three apprentices at a given time. Such a low instructor-trainee ratio has both positive and negative implications for the internal efficiency of vocational training in the informal Jua Kali sector enterprises. Although it enhances instructional efficiency by providing for individualized instruction, it inevitably leads to a high unit cost per trainee, as has already been observed. It may also mean objectives and instructional methods keep changing, hence the instructor's inability to state them precisely.

(ii) While only about 8 percent of the instructors had no trainees at the time of the survey, the analysis of retrospective data revealed that despite the availability of training opportunities, about 38 percent of them had experienced dormant periods: extended sessions within which instructors had no trainees. Whether by intent or accident, periods of dormancy can be a major source of internal inefficiency of any training institution, Jua Kali enterprises being no exception. This calls for an investigation of patterns in the trainee flow rates in the informal Jua Kali sector enterprises, which is the focus of the section that follows.

The investigation of trainee flow rates was made at whole-enterprise level. In order to do this, managers of Jua Kali enterprises were asked(by item 25 of the checklists) to indicate: the total number of trainees admitted to the enterprise since its establishment; the number of those who successfully completed the program; those who dropped out before the successful completion of training, and reasons for the dropping out. The information obtained was then used to derive the trainee completion and dropout rates for every enterprise. The results indicate that 89 percent of the enterprises had trainee completion rates of 70 - 100 percent, while 4 percent of the enterprises had trainee completion rates of less than 50 percent. The trainee completion rates for the remainder of the enterprises was between 50 - 69 percent. Overall, the *average* trainee completion rate for the informal Jua Kali sector as a mode of vocational training was 82 percent. This means that on average, for every ten trainees recruited to the informal Jua Kali sector, eight successfully complete their training programmes, while two drop out for one reason or another.

As stated above, the managers were asked to give major reasons that account for trainee dropout. Their explanations revolved around four factors:

(i) *Desire for Money*: Most trainees, according to the instructors, had a strong desire for money. As a result, they often "rushed" (before being "certified" by their instructors) for jobs which paid them higher salaries than the allowances offered by enterprises that were training them. This was the most frequently cited problem;

(ii) *Bad Attitudes*: This often referred to cases where the trainee dropped out either voluntarily or by expulsion. Bad attitudes cited by managers ranged from cases of theft, disrespect of instructors or fellow trainees, dishonest dealings with clients, to habitual lateness or absenteeism;

(iii) *Lack of Fees*: This referred to cases where trainees were sent away for non-payment of fees. Often, instructors took on trainees after negotiating (with parents or the trainee himself) a certain fixed amount of fee for the entire course. The trainee then paid either the whole amount once or was allowed to pay in certain instalments. Although extensions beyond the agreed periods for payment were granted, the trainee was eventually sent away at a certain point. In such cases, re-admission was conditional upon payment of the full outstanding amount; and

(iv) *Inability to Cope with Training*: This refers to trainees who simply quit the training upon realization that the workload and general conditions of work, were not suited to their abilities and initial expectations.

From the four reasons outlined above, one can discern an attempt by instructors to blame the trainee dropout phenomenon on trainees themselves. However, a closer scrutiny reveals that the outlined reasons present possibilities of clarification as well as problems of distortion about the phenomenon. For instance, while trainee dropout due to lack of fees may be entirely blamed on the trainee(or the parents), factors such as bad attitude and inability to cope with training could partly be attributed to the instructors' management and instructional styles. Moreover, trainee dropout due to what instructors call the desire for money, may only be pointing to the marketability of the skills acquired by the trainees. Further, the label "desire for money" as an explanation for trainees who dropout before being "certified" as qualified only hides questions about the complexity, practicality and legitimacy of "methods of assessment and certification" of vocational training in the informal Jua Kali sector. Since most of the training is practical, it is possible that trainees can tell when they have mastered the skills and are ready to leave, while this might be the very time that instructors can use them to make money by getting more work into the enterprise. The point is that criterion-referenced assessment is a joint venture between the instructor and trainee, but instructors are not willing to share the exercise.

Although the foregoing analysis of instructor-trainee ratio and trainee flow rates, appears to raise more questions than answers about the internal efficiency of vocational training in the informal Jua Kali sector, it does indicate that overall, the sector is largely characterised by a relatively high internal efficiency. This seems to confirm assertions made by other writers, as already indicated in chapter two, that the informal sector is usually characterised by high levels of efficiency (Bennell, 1993; Fluitman, 1990). However, before making any general impressions about the external efficiency of the sector as a mode of vocational training, some post training experiences of its graduates, an the post training expectations of the trainees, will now be examined.

Post Training Experiences of Jua Kali Graduates and Trainee Expectations

In this study, the major indicators of external efficiency were defined as the job search period, the nature and rates of employment/unemployment, and the earning capacity among graduates of the informal Jua Kali sector. The three indicators outlined, constitute the post training experiences of Jua Kali graduates. However, the job search period and related factors have already been examined and discussed elsewhere in this chapter. In this section therefore, only the nature/rates of employment/unemployment and the earning capacity of Jua Kali graduates will be examined. Further, the trainees' post training expectations(nature of employment and income) will be examined and related to the experiences of instructors. In the analysis, graduates of the informal Jua Kali sector refer to instructors who had taken their initial training in the informal Jua Kali sector.

In order to investigate patterns in the nature and rates of employment/unemployment among Jua Kali graduates, managers of Jua Kali enterprises as well as individual instructors were asked to indicate: the number of trainees whom they had successfully trained over a specified period; the number employed and the sectors in which they were employed (if they knew); and whether they were employed in relevant or irrelevant jobs with regard to the skills acquired during training. From the responses obtained, a summation of all Jua Kali graduates and the other related factors was made, so as to get an overall view by sector rather than individual enterprises or instructors. The purpose of getting figures from managers and individual

instructors was to make a comparison for validation of the results. A frequency tabulation of the managers' and instructors' responses was made. The results are summarised in table 21.

Table 21: Employment Patterns among Jua Kali Graduates

		Managers' Response		Instructors' Response	
		Number	**%**	**Number**	**%**
Total No of Graduates		**1254**	**NA***	**1004**	**NA**
Total No of unemployed Graduates		40	3.0	82	8.0
Total No of Employed Graduates		1214	97.0	922	92.0
Nature of Employment	Relevant	1177	97.0	899	98.0
	Irrelevant	37	3.0	23	2.0
	Total	***1214***	***100.0***	***922***	***100.0***
Sector in which Employed	Informal Jua Kali	931	77.0	687	75.0
	Formal Private	187	15.0	167	18.0
	Formal Public	96	8.0	68	7.0
	Total	***1214***	***100.0***	***922***	***100.0***
Monthly Income (KShs.)	Below 3000	12	11.80	NA	NA
	3000-4500	29	28.40	NA	NA
	4501-6000	25	24.50	NA	NA
	6001 -7500	26	25.50	NA	NA
	Above 7500	10	9.80	NA	NA
	Total	***102***	***100.00***	***NA***	***NA***

Note: In the above table, NA means not applicable.

The following key observations may be made from table 21:

(i) The employment rates among graduates of the informal Jua Kali sector are high. This is reflected by both the managers' and instructors' responses, which showed that 97 and 92 percent respectively, of all traceable graduates were employed;

(ii) Nearly all graduates of the informal Jua Kali sector get employed in relevant jobs where they directly make used of the skills acquired during their training. This is evident from table 21 which shows that 97 percent of the graduates(as derived from the managers' responses), or 98 percent (as derived from instructors), were in relevant employment;

(iii) Overall, between 23 and 25 percent of the informal Jua Kali graduates are employed by the formal sector(7 - 8% by the formal public sector, and 15 - 18% by the formal private sector). However, the majority of the graduates(75 - 77%) are employed by the informal Jua Kali sector itself. This evidence complements the analysis made earlier which showed that 71.5 percent of all instructors sampled for the survey were trained within the sector itself, and the subsequent assertion that the belief that the informal sector is largely supplied, managed and sustained by graduates of formal technical training institutions was unfounded;

(iv) When compared to civil service salaries, the analysis of monthly income of instructors who had trained in the informal Jua Kali sector shows that 12 percent were equivalent to unskilled workers (below Kshs. 3000), 53 percent to graduates of formal middle level colleges(certificate/diploma qualifications whose income was KShs. 3000 - 6000), while 36 percent were equivalent to or higher than university graduates whose income was above Kshs. 6000). Most of the instructors whose income was equivalent to unskilled workers were salaried employees (not self-employed) and were mainly in carpentry trades. High income earners were self-employed, and mainly from motor vehicle, electrical and electronics trades. An attempt was made to relate income to experience, but there seemed to be no clear pattern emerging.

Two conclusions may be drawn from the four observations made above. Firstly, vocational training in the informal Jua Kali sector is characterised by high external efficiency: there is not only a high rate of employment among its graduates, but they are also employed in jobs relevant to the skills acquired during training, and are relatively well paid. Moreover, as shown earlier, its graduates have relatively short job search periods. Secondly, the post training income capacity of Jua Kali graduates is influenced by two factors: the status of

employment and the type of trade. In both cases, self-employed graduates (those who are either sole owners of, or partners in the enterprise) have higher incomes than salaried graduates(those who are merely employees of the enterprise). Equally, trainees who choose motor vehicle or electrical/electronics trades are likely to have higher post training incomes than those who choose carpentry or welding and fabrications. Interestingly, the low income trades are also the ones whose average duration of training is relatively short: six to eighteen months, compared to the high income trades whose average training period ranges between eighteen to thirty six months.

The post training expectations of Jua Kali trainees were addressed by items 36 and 37 of the trainees' questionnaire. Item 36 asked the trainees to state what they planned to do upon completion of their training, while item 37 asked them to indicate the expected post training monthly income. With regard to future plans, all trainees anticipated to get into employment, either salaried or self-employment. Hence the trainee responses for employment preferences were classified as either self or salaried employment. The income expectations were, however, classified according to the civil service scales referred to earlier. Hence, trainees' income expectations were classified as either falling in the unskilled worker equivalent, middle level formal college equivalent, or university graduate equivalent. Table 22 shows a tabulated summary of the findings.

Table 22: Employment and Income Expectations of Jua Kali Trainees

Employment Expectations			**Income Expectations**		
	Number	**%**	**KShs.**	**Number**	**%**
Self Employment	105	61.0	Below 3000	5	3.0
Salaried Employment	67	39.0	3000 - 6000	76	44.0
Further Training	0	0.0	Above 6000	91	53.0
Total	**172**	**100.0**	**Total**	**172**	**100.0**

It may be observed from table 22 that 61 percent of the trainees expected to get self-employed upon graduation, only 39 percent hoped to get into salaried jobs, while none aspired for further training of any nature. Further, it is evident that overall, an overwhelming majority of

trainees (97%) expected that upon graduation, their monthly income would be equal to or more than that of graduates of formal middle level colleges working in the civil service. Specifically, 53 percent of the trainees expected an income equivalent to, or higher than that of a university graduate working in the civil service. Clearly, the post training income expectations of most Jua Kali trainees are much higher than the actual earning experiences reported by their instructors, while their employment expectations indicate that the informal sector is likely to continue developing and supplying most of its skill requirements for some time to come.

However, self-employment is not only the ultimate goal for most Jua Kali trainees but also the principal rationale upon which promotion of informal sector enterprises is usually predicated by government. In this study therefore, an attempt was made to established the employment status of Jua Kali workers (instructors): whether they were self-employed in, or salaried employees of the Jua Kali sector. Accordingly, item 5 of the instructors' questionnaire required them to state whether they were sole owners, partners or employees of the respective enterprises at which they worked. A sole owner refers to a Jua Kali instructor who established and runs the enterprise entirely on his own. A partner on the other hand refers to a case where the enterprise is jointly owned by two or more instructors: they share payment of rent and rates but often operate their business independently. For instance, one may be a motor mechanic, another one an auto electrician while yet the other a panel beater and spray painter. Results of the analysis are presented in table 23.

Table 23: Employment Status of Jua Kali Instructors

Status	Number	Percentage
Sole Owner	21	20.8
Partner	46	45.5
Employee	34	33.7
Total	**101**	**100.0**

It may be observed from table 23 that only a minority (33.7%) of Jua Kali workers in skilled occupations are salaried employees. In contrast, the majority (66.3%) are self-employed, either as partners or sole owners of enterprises. However, partnerships seem to be a common feature in the Jua Kali sector, as it accounted for 45.5 percent of all Jua Kali instructors (whether employed or self-employed), and 68.7 percent of all self-employed instructors. This may mean that trainees' aspiration for self-employment is realistic, largely attainable and probably based on individual observations and positive experiences of past graduates.

Constraints to Vocational Training in the Informal Jua Kali Sector: Managers', Instructors' and Trainees' Views.

One of the overall aims of this study, as outlined in chapter one, was to provide some suggestions for improved policy and practice of vocational training in the informal Jua Kali sector. In order to do this, direct input from the major players in the sector was considered not just desirable but vital. Accordingly, managers of Jua Kali enterprises, instructors and trainees were each requested to identify and outline what in their contexts were the major problems militating against the provision of effective and efficient vocational training in the sector. Further, they were requested to make suggestions as to what they thought ought to be done in order to address the identified problems. In addition, the instructors were asked to provide a 10-15 year visionary projection (what they expect) of vocational training in their own enterprises in particular, and the informal Jua Kali sector in general.

A tabular summary of their responses is provided in table 24. Since the managers' and instructors' responses were largely similar, they have been listed under the same row in table 24. Although some of the problems identified in table 24 have already been discussed in this chapter, there are three others that require further clarification: job flow; investment capital; and insecurity. An explanation of each of these problems is follows after table 24..

Table 24: Constraints and Suggested Solutions to Vocational Training in the informal Jua Kali Sector

Respondents	Problems Identified	Suggested Solutions
Managers and Instructors	Lack of tools and materials Constant desire for trainees to leave for employment before completing training Lack of formal credentials to recognize the skills possessed by Jua Kali graduates. Lack of steady job flow. Lack of capital to procure tenders. High competition for customers. Lack of security. Lack of unified training policies. Insecure land tenancy. Language problems in instruction. Mixed levels of education and ability among trainees.	Improve instructional delivery by providing tools. Establish a special body that certificates graduates of the informal Jua Kali sector, without forcing them to go through formal exams as is the case at present. Provide personal workshops on own plots as instructional sites. Provide funds or loans to enable the Jua Kali enterprises to compete with formal sector for tendered jobs. Devise strategies for image boosting of the Jua Kali sector domestically and internationally. Unify training policies for the informal Jua Kali sector, such as minimum requirements to be met by all Jua Kali trainers.
Trainees	Lack of tools and materials. High fees charged for training. Hardships of accommodation, meals and transportation. Communication barriers. Individual differences among trainees. Separation from family. Delay in issuing of certificates.	Improve teaching resources. Provide scholarships to trainees. Improve allowances to trainees. Carry out regular guidance and counselling seminars for trainees.

Job Flow

The ability for a Jua Kali enterprise to attract and maintain a steady flow of jobs(clients), is one of the major determinants of the efficiency and effectiveness of vocational training in the informal sector. Since training is directly linked to the activities that take place in the enterprise, ensuring a steady demand of services offered, or goods manufactured by the enterprise is crucial. As one instructor remarked:

> The erratic nature of jobs (unsteady job flow) makes us to offer unscheduled training programmes. That means that one has no fixed programme of what should be done by the trainee on specific days. What is learned, and when it is learned depends on the nature of jobs we get. Trainees can even skip lunch when work (the customer) comes at such a time.

According to the instructors, lack of steady job flow has three major disadvantages:

(a) It implies extended periods of dormancy and therefore results into lack of continuity of learning among trainees;

(b) It leads to de-motivation among trainees, who eventually drop out;

(c) It leads to longer course durations, and therefore higher training costs.

Investment Capital

The lack of capital for investment was widely cited as one of the major constraints to vocational training in the informal Jua Kali sector. It invariably impacts on both trainee retention, skill development and job flow. It was argued that due to weak financial bases, many Jua Kali enterprises were unable to undertake jobs on tender: tenders required that one provides services or supplies goods(at own cost) first, then payment is made later. Moreover, lack of funds did not only prevent Jua Kali enterprises from purchasing vital tools and machinery, but forced them to sub-contract certain jobs to the formal private sector. This, it was argued, denied trainees the chance to learn certain skills as they just saw finished

products. These constraints are captured in the remarks made by some instructors quoted below:

> Lack of money for tenders is a big problem. Some customers give you jobs and expect you to do them and charge them later. When we have no money to purchase the materials or spares for the jobs, we loss (sic) such jobs, and eventually loss (sic) the customers and students as well.

> Lack of finance to purchase tools is the biggest problem we have. For example where there is no lathe machine in my Jua Kali workshop, I will take the job outside (to the formal private sector) and trainees will not see what was done - only finished products are seen. This denies them the important skills that they would gain if such jobs were all done in my workshop.

Insecurity

Lack of security is viewed as a major impediment to the growth of the informal Jua Kali sector. Insecurity is manifested in two ways. Firstly, given that Jua Kali enterprises operate mainly in open fields with temporary enclosures or fences, there is constant risk to customers' property when left in the garages or workshops overnight. Secondly, there is constant fear (among managers, instructors and trainees) of eviction from premises by civic authorities and plot owners. The lack of security drives away customers and erodes the clients' trust and confidence in the sector. In particular, insecure land tenure and unpredictable evictions from sites occupied by workshops or Jua Kali garages, discourage many from any ventures into long term investments, except those who own land. Although the Kenya government, as discussed in chapter two, has made attempts to address some of these problems, the policies and strategies adopted have yielded little positive result. It is in this light that some alternative policies and strategies for the development and growth of the informal Jua Kali sector, with specific reference to the training component, are provided in the next chapter. Meanwhile, a summary of the major findings of the survey is follows.

Summary of Findings

It may be recalled that some of the main questions which this survey sought to answer related to: the educational profiles of trainees and instructors and what these suggest about the quality of trainees and skilled workforce in the Jua Kali sector; the extent to which the sector limits skill transfer to kinship relations; the relative contribution of the three modes of vocational training to skilled workforce in the sector; the relevance and cost-effectiveness of the sector, as measured by various indicators, as a mode of vocational training; and the Jua Kali managers', instructors' and trainees' perceptions of problems militating against the provision of efficient and effective training within the sector, and possible solutions to those problems. The major findings are summarised below.

This study provides evidence which confirms that most of the instructors and trainees in the informal Jua Kali sector have generally low levels of formal education, but contradicts the belief that trainees in the sector are academic failures who join the sector purely as their only safety valve after failing to meet requirements for progression through the formal routes. The majority of trainees had met the minimum requirements for admission to subsequent levels of formal education and training, and had performed well in science, mathematics languages and vocational subjects, though they did not proceed to academic or formal vocational programmes. These are usually considered as subjects that lay a firm foundation for technical careers.

Trainee recruitment to the informal Jua Kali sector is not based upon any clearly defined or pre-determined policies. The admission criteria are defined in terms of trainee attitude rather than aptitude. According to instructors, a trainee's interest in the knowledge and skills being offered and the desire for self-employment, rather than the level of education, physical fitness or age, are the major determinants of success and therefore more likely to influence the selection of trainees.

Contrary to common belief, skill transfer from the master craftsman to the trainee in the informal Jua Kali sector is not, to a large extent, limited to kinship relations. This applies

whether a Jua Kali enterprise is geographically located within or outside the master craftsman's home district. Thus, regardless of the geographical location of the enterprise, kinship considerations do not significantly influence the recruitment and training of apprentices in the informal Jua Kali sector.

The assumption that the informal Jua Kali sector is largely fed, managed and sustained by graduates of the formal pre-employment vocational training institutions is unfounded: the combined formal public and private sectors as modes of training contribute less than 29 percent of the Jua Kali skilled workforce. More specifically, the public pre-employment technical training institutions contribute only 12.75 percent of the workforce. The informal Jua Kali sector itself, as a mode of vocational training, accounts for 71.57 percent of all the skilled workforce in the sector. Consequently, the importance of the training component of the Informal Jua Kali sector cannot be overemphasized.

The informal Jua Kali sector as a mode of vocational training largely meets the three criteria of relevance. Its graduates are characterised by short job search periods, come from families that are largely socio economically disadvantaged, and have knowledge, skills and attitudes that enhance adaptability to technological changes and the underlying skill requirements. The major strategies employed in adapting to technological changes are: technological confidence; technological innovation; inter sectoral linkages; and intra sectoral consultations.

Vocational training in the informal Jua Kali sector is, overall, cost-effective. Factors contributing to cost effectiveness in the sector include: low instructor-trainee ratios; the culture of innovation; low cost "workshops/garages"; smooth trainee flow rates; and short course durations, individualized methods of instruction; and adoption of market driven and client sensitive instructional objectives. However, the internal efficiency of vocational training in Jua Kali enterprises could be improved by addressing three major issues: marketing of training opportunities; eliminating or minimizing periods of dormancy; and reducing the unit cost of training by further rationalising the instructor- trainee ratios.

The three major constraints to vocational training in the Jua Kali sector, as identified by managers, instructors and trainees are: erratic job flow; lack of investment capital; and

insecurity, while the key challenge to instructors is the complexity, practicality and legitimacy of methods of assessment and "certification".

On the basis of findings of this survey and the literature review made in chapter two, the next chapter provides a discussion of key issues that emerged, draws overall conclusions of the study, and provides recommendations for policy implementation and further research.

CHAPTER 5

DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 5

Introduction

The purpose of this study were to examine policies and strategies for the development and growth of the informal Jua Kali sector in Kenya, identify and test underlying assumptions about the nature and characteristics of the sector, and evaluate the relevance and cost effectiveness of informal apprenticeship programmes in the sector, in order to explore its potential as an alternative mode of vocational education and training in Kenya. Accordingly, in this chapter, the study objectives are briefly reviewed in order to place into perspective the discussion of the major findings whose summary is provided. Further, the overall conclusions of the study are drawn and recommendations made. The recommendations relate to: exploring alternative policies and strategies for enhancing the development and growth of the informal Jua Kali sector as a mode of vocational training, and suggesting areas for further research to address questions raised by this study.

Study Objectives

The specific research objectives of this study were to:

(i) Test three common assumptions about the informal Jua Kali sector: that the sector largely consisted of workers and trainees who had low levels of education, and who were academic rejects that had failed to make it through the formal route; that formal post school vocational training institutions and programmes are major suppliers of the Jua Kali skilled workforce; and that policies aimed at developing them represent an appropriate strategy of skills development in and for the informal sector; and that skill transfer from the master craftsman to the trainee in the sector is limited to kinship relations;

(ii) Examine the extent to which the informal Jua Kali sector, as a mode of vocational training, met the criteria of relevance: the extent to which skills possessed by its

graduates were readily marketable and enhanced labour mobility; the degree to which its graduates possessed the capacity to cope with or influence technological changes and the underlying skill requirements; and the extent to which the sector fulfilled the equity objective by enhancing the life chances of disadvantaged groups, as reflected in the socio economic backgrounds of its trainees;

(iii) Examining the cost-effectiveness of the informal Jua Kali sector as a mode of vocational training, by assessing its internal efficiency (using the unit cost of training, trainee-flow rates, instructor-trainee ratios, methods of instruction, assessment and "certification" and course content as indicators), and its external efficiency (using the job search periods, earning capacity and labour mobility among graduates as indicators);

(iv) Making a comparative review of literature on training and related characteristics of the informal sector in some other African countries; and

(v) Based on findings from (i) - (iv) above, make some recommendations for policy and suggest strategies for enhancing the informal Jua Kali sector as an alternative mode of vocational education and training in Kenya.

A summary of findings that emerged from the study is provided below.

Summary of Findings

Educational Profiles of Jua Kali Trainees and Instructors

Although most of the instructors and trainees in the informal Jua Kali sector had low levels of education, the majority of trainees had not only met the minimum requirements for admission to subsequent levels of formal education and training, but also performed well in science, mathematics and languages. These are subjects that are usually considered as laying a firm foundation for technical careers. The assumption that Jua Kali apprentices comprise

individuals had failed to qualify for progression within the formal academic route is not entirely true.

Mode of Initial Training for Jua Kali Instructors

This study established that 71.57 percent of the instructors were trained entirely on the job within the informal Jua Kali sector itself, 15.69 percent had formal training within the private modern sector, while only 12.75 percent were trained at public pre-employment vocational training institutions. This is contrary to the belief that formal vocational training institutions were major suppliers of the skilled workforce for the informal Jua Kali sector.

Skill Transfer and the Kinship Factor

The study established that a majority of trainees (76.44%) had no kinship relations with their instructors. Moreover, even of the 23.56 percent who had some kinship relations with their instructors, only 19 percent of them could be classified as family relations while the rest were merely ethnic relations. This evidence contradicts the common assumption that skill transfer from the master craftsman to the trainee, within the informal Jua Kali sector, is largely limited to kinship relations.

Socio-economic Characteristics of Jua Kali Trainees

The majority of the Jua Kali trainees were characterised by age-grade distortions and low levels of education. They also came from families whose parents had low levels of education and either belonged to unskilled occupations, or were outrightly unemployed. Further, the major factors that influenced their choice of the informal Jua Kali sector as a mode of training were: desire for self employment; better prospects for graduate marketability; parental pressure; lack of fees for formal education and training; and opportunities for practical attachment. All of the above evidence suggests, in various ways, that the informal Jua Kali sector as a mode of vocational training, largely serves socio economically disadvantaged groups. However, 100 percent of the trainees were male: a clear pointer to gender disparity

in skills acquisition and transfer within the sector.

Marketability and Labour Mobility of Jua Kali Graduates

Instructors who were graduates of the informal Jua Kali sector had very short job search periods: 77.8 percent of them had either an automatic transition from training to employment, or had a job search period of less than three months. In overall comparison, 96.6 percent of graduates of the informal sector got employed within the first six months of completion of training, as opposed to 79.4 percent for graduates of the formal sector. Further, there was a significant degree of intra-sectoral and inter-sectoral labour mobility among Jua Kali graduates.

The major factors that influenced intra-sectoral mobility were the desire for self-employment and need for better salary, while inter sectoral mobility (movement from informal sector to formal, then back to the informal sector) was mainly viewed by instructors as a means for the accumulation of capital as a base for initial investment in self-employment, and a publicity or self- marketing strategy to prospective clientele. However, while at least 92 percent of the Jua Kali graduates who moved to the formal sector utilised skills relevant to the training they had acquired in the informal sector, none of them attained a supervisory or managerial status while in such employment.

Adaptability of Jua Kali Graduates to Technological Changes

The concept of adaptability, among Jua Kali graduates, is not a myth but a norm. Jua Kali workers do not just adapt to technological changes; they evolve with them. This study established four major technological copying strategies among Jua Kali instructors: technological confidence, a product of the nature of the instructors' training and their experience; technological innovation, born out of the severe financial/material constraints that the sector faced and a highly competitive business environment; intra Jua Kali consultation, based on the acknowledged differences in levels of experience and expertise among Jua Kali workers, and the belief that these differences should be exploited positively and

collaboratively so as to retain the skills and profits within the Jua Kali sector; and inter sectoral linkages, usually a last resort.

Cost-effectiveness of training in the Jua Kali Sector

(i) The informal Jua Kali sector as a mode of vocational training is characterised by: low instructor-trainee ratios (between 1:1 and 1:3); smooth trainee flow rates (82% completion rates on average); relatively short course durations; individualized methods of instruction; and instructional objectives that are client-sensitive, market-driven and product rather than process specific.

(ii) The unit cost of training varied between enterprises and trades, and was a function of the course length: the longer the duration of training, the higher the unit cost. The average unit cost of training for electrical and electronics was Kenya Shillings 124,000, motor vehicle mechanics 94,000, welding and fabrications 55,000 and carpentry 44,000.

(iii) The school, media and Jua Kali enterprises individually or collectively, only played a peripheral role in the direct marketing of training opportunities in the informal sector, as they only accounted for 6, 10, and 8 percent respectively, as trainees' sources of information for such opportunities, as opposed to 77 percent for the family.

(iv) A majority of Jua Kali instructors (88%) had incomes that were either the same as, or better than what artisans in the civil service earned. However, an individual's income was dependent on the status of employment and the type of trade: self-employed instructors earned more than those in salaried employment, while trades such as motor vehicle and electrical/electronics recorded better incomes than carpentry and welding.

(v) The content of vocational programmes in the informal Jua Kali sector included: occupational ethos such as honesty, endurance and self-confidence; understanding and application of specific knowledge and skills such as tool selection, problem diagnosis,

and determination and implementation of appropriate intervention measures; and theoretical discussions and explanations with direct relevance to the task at hand.

Other factors related to the cost-effectiveness of training, such as job search periods and labour mobility have been summarised in the preceding sections.

Vocational Training Policy for the Jua Kali Sector

Although the training component of the Jua Kali sector has been officially acknowledged, there has been a conspicuous absence of specific policies and strategies for its development. Instead, the policies, strategies and intervention measures for the development and growth of the Jua Kali sector have focussed on employment creation and the development of skills ***for*** the informal sector by formal institutions, rather than skills development ***within*** the sector itself.

Post Training Aspirations of Jua Kali Trainees

This study established that the majority (61%) of the trainees expected to get self-employed upon completion of training, 39 percent aspired for salaried employment, while none aspired for further training of whatever kind. Equally, an overwhelming majority of trainees (97%) expected that upon graduation, their monthly income would be equal to, or more than that of graduates of formal middle level colleges working in the civil service. However, the post training income expectations of most trainees were much higher than the actual earning experiences reported by their instructors.

A further observation was that 100 percent of the trainees had a positive attitude towards the informal Jua Kali sector as a mode of vocational training, as they indicated that they would recommend it to their relatives and friends. Such attitude was based on the belief that the sector: offered practical and relevant skills which guaranteed better prospects for salaried or self-employment; provided flexible and shorter course durations at lower costs than the formal training institutions; and provided trainees with vital income while in training.

Constraints to Vocational Training in the Jua Kali sector

The major constraints to the provision of effective and efficient vocational training, as identified by Jua Kali instructors and trainees were: lack of steady job flow, which resulted into extended periods of dormancy, increased rates of trainee dropout due to discontinuity of learning and demotivation among trainees, and longer course durations as well as higher training costs; lack of capital for initial and developmental investment, which leads to job loss especially where tenders are involved; and lack of security, which not only meant that Jua Kali managers, instructors and trainees lived in constant fear of eviction by local authorities or landlords from premises, but also led to the loss of customers and erosion of clients' trust and confidence in the sector.

Discussion of Major Findings

The purpose in this section is not to provide detailed discussions of all findings (as this has been done in chapters two and four of this study), but to: relate highlights of major findings to results of other studies; show how the assumptions, expectations and issues raised from the literature review have either been verified, rejected or put into a new context by this study; and indicate limitations within which subsequent conclusions and recommendations are made.

The discussion is presented as issues under seven sub-headings: defining the Jua Kali sector; the fallacy of skills training ***for*** the Jua Kali sector; Jua Kali trainees and the quality factor; skills transfer and the kinship factor in the Jua Kali sector; defining competency levels of Jua Kali workers; the self-employment factor and quality assurance in Jua Kali training; and constraints and possible limitations to research findings. A discussion of each of these issues follows below.

Defining the Jua Kali Sector

The definition of the informal sector generally, and the Jua Kali sector in the Kenyan context in particular, is one of the key issues that emerges from the findings of this study. It is clear

that while most of the studies and discussions of the sector have been characterized by generalizations, their interests in, and concept of the Jua Kali sector reveal little commonality. Attempts have been made to define the sector on the basis of: size of enterprise in terms of workers and capital; nature of activities; nature and level of skill requirements; the degree of organizational and operational conformity to legislative requirements; and the nature and status of employment (ILO, 1972; Kenya, 1992; Parker and Torres, 1994; King, 1996; and Honig, 1996). Even the definition of the informal sector, adopted (by resolution) at the Fifteenth International Conference of Labour Statistics (ICLS) in 1993, largely reflects the same attempts. It stated:

> The informal sector may be broadly characterised as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned These units typically operate at a low level of organization, with little or no division between labour and capital as factors of production and on a small scale. Labour relations - where they exist - are based mostly on casual employment, kinship or personal and social relations, rather than on contractual arrangements with formal guarantees (Bekkers and Stoffers, 1995).

However, as explained in chapter two of this study, there are inherent difficulties in defining the Jua Kali sector on any one of the above bases. These difficulties arise from three major factors: plurality of Jua Kali activities; permeability of membership; and the pace and nature of evolution in Jua Kali policy. The plurality of activities implies vast differences in the nature and level of skill requirements, as well as earning capacities among Jua Kali workers: a motor mechanic and a street hawker who sells roast maize or bananas, is a good illustration. The permeability of membership, where some individuals are full time employees of the formal sector but part-time workers in the Jua Kali sector, not only makes it difficult to isolate distinguishing characteristics between workers of the formal and informal sectors, but also leads to possible data distortion such as double counting or duplication, when a comparative study of the two sectors is made. Moreover, it is common in Kenya to find rich business people who own formal shops in central business areas in the city, but who hire hawkers to sell part of the ware on the streets. Such hawkers are labelled Jua Kali workers, although in reality, the question is whether they are Jua Kali employees or formal sector employees working in the informal sector.

The pace and nature of policy evolution such as the liberalization of the economy as well as innovations in taxation and licencing procedures, on the other hand, render fluid the definition of the Jua Kali sector even from that of being simply a legal-regulatory perspective. Recent events in Kenya, for instance, reveal contradictions in public policy with regard to the sector. This is illustrated in a case where the Commissioner of Income Tax was making a passionate call for the Jua Kali sector to be subjected to direct income tax, in order to save billions of shillings lost annually in unpaid revenue (Nation, 1998), while at about the same time, the State President was issuing a directive for the abolition of trading licences for hawkers and kiosk owners in Nairobi City (Opondo, 1998).

The rationale for proposing that the Jua Kali sector be subjected to direct income tax, was that liberalization had resulted in huge growth in income for the sector's workers. Equally, the rationale for abolishing licencing among hawkers and kiosk owners, who are classified as Jua Kali workers, was that many of them did not raise even enough income to pay for their household expenses, and that licences were therefore an unnecessary further burden. Clearly, the Jua Kali sector: has very poor, but also very rich members of society; has lowly paying but also highly paying activities or occupations; is unregulated in some aspects but subject to state laws and regulations in other aspects; has full-time workers, but also part-time workers from the formal sector; and comprises occupations that are highly skilled, but also others that require no specialized skills. Given this scenario, this study is of the opinion that neither of the definitions previously advanced nor generalizations made from studies carried out, can claim to provide a comprehensive, accurate and inclusive view of the the Jua Kali sector. Rather, they provide approximations of the whole.

The Fallacy of Skills Training for the Jua Kali Sector

A major finding of this study is the apparent disjuncture between the rhetorical acknowledgement of the potential of the Jua Kali sector in skills development, the actual policies for skills development adopted, and the subsequent impact of such policies. As discussed in chapter two of this study, the explicit recognition of the training component of the Jua Kali sector, has not been matched by its active promotion as a mode of vocational

training. On the contrary, the training component of the sector has either experienced a relative neglect, or received only the passive attention of policy makers and funding agencies. This neglect or passive attention has been predicated on three assumptions: that formal vocational and technical training institutions were major contributors to the Jua Kali workforce; that vocational training programmes in the Jua Kali sector can develop independently and function effectively and efficiently without any external support; and that the training function of the Jua Kali sector is secondary to, and a by-product of the production function. Accordingly, it is believed, the expansion of space, improvement of facilities and innovation of training programmes in formal vocational and technical training institutions, as well as investments in the production and marketing activities of the Jua Kali sector, is a legitimate, necessary and sufficient condition for promoting the training component of the sector.

However, this study has shown that formal vocational training institutions (public pre-employment in particular), contributed less than 13 percent of the skilled workforce in the Jua Kali sector: the majority of skilled workers were trained entirely on-the-job within the Jua Kali sector itself. Evidence from other countries in Africa have shown similar patterns, but with even higher proportions of skilled workers being trained within the informal sector itself. Morever, the review of studies and debates on the rationale and mode of provision of vocational education and training, clearly demonstrated serious reservations about the suitability of formal vocational institutions as modes of training for private sector enterprises. Further, Jua Kali instructors and trainees clearly pointed out impediments to the effective and efficient provision of training in the sector, most of which could be addressed centrally by re-orienting the skills development policy. In addition, it is evident that Jua Kali entrepreneurs in skilled occupations clearly distinguish between apprentices, skilled employees and support staff, and consider training as an important and legitimate component of the overall entrepreneurial activities, not just a by product of the production process. It is in view of these observations and findings, that policies and strategies which seek to actively promote formal vocational training institutions and programmes, as means of developing skills ***for*** the informal sector, while neglecting thousands of Jua Kali trainees and skills development programmes taking place ***within*** the sector itself, are either likely to continue having little impact or bound to fail.

Jua Kali Trainees and the Quality Factor

This study confirmed that the majority of Jua Kali trainees had generally low levels of formal education, but were not "academic failures" as they had not only met the minimum requirements for progression to subsequent levels of formal education and training, but also performed well in foundational subjects for technical careers. This is contrary to the common assumption that Jua Kali apprentices largely comprised school dropouts or those who had failed to make it through the formal academic route. Clearly, a combination of the educational profiles and aspirations of Jua Kali trainees, as well as results of the statistical test of significance regarding factors that propelled their entry into the sector, renders the description of Jua Kali trainees as failures or dropouts, largely invalid. Rather, the findings suggest that the majority of Jua Kali trainees are excluded (or exclude themselves) from the formal system on economic or personal grounds rather than academic incapability.

In Kenya, the steady rise in school leaver output has not been matched by an equal expansion of opportunities at higher levels of education. For instance, it was recently reported by the Minister for Education that a total of 248,276 pupils (more than half of the 446,539 candidates who sat the 1998 Kenya Certificate of Primary Education (KCPE) examination) were to be "denied" secondary education because not enough places were available, and that for the same reason, in 1997 only 53 percent of the candidates who met the requirements got admission to secondary school (Waihenya, 1999). The transition rate from secondary to university is even lower. If the bulk of such youth join the Jua Kali sector as trainees, it is clearly not because they have failed, but because they are excluded on grounds other than academic incapability. Moreover, when such individuals are faced with a choice between two alternative modes of training (formal public pre-employment and informal apprenticeship) in which to invest their scarce capital (fees) in exchange for productive skills, the human capital theory predicts that the mode that promises better benefits or profits at low costs will be chosen.

It is not surprising therefore that this study established the desire for self-employment, as the most significant factor that influenced the trainees' choice of the Jua Kali sector as a mode of vocational training. Rather than pursue secondary education or vocational training at formal

training institutions, which may not offer better prospects for employment and income, such individuals may exclude themselves from the formal system on the basis of their own definition of relevance. This, to some extent, would be true even if loans were available for tertiary or formal vocational training.

Although conventionally the quality of trainees is equated with the level of formal education (where it is taken that the higher the level of education the better the quality of the trainee), Honig (1996) has argued that this was not applicable to the informal sector. Based on a study of education and self-employment in Jamaica, Honig observed that:

> Beyond general literacy, the contribution of formal education in the informal sector is essentially a stepped or non linear form. Having the additional skills provided by the seventh through ninth years of education may not offset the advantages earned through experience in the chosen trade or business, or the additional opportunity costs in terms of lost starting capital and business connections (Honig, 1996, p.192).

Evidence from the present study therefore not only suggests that assumptions about the poor quality of Jua Kali trainees (and therefore skilled workforce) are contestable, but also questions the appropriateness of the concept 'dropout" with regard to the trainees.

Skill Transfer and the Kinship Factor in the Jua Kali Sector

The finding that only 23.56 percent of the Jua Kali trainees had any form of kinship relations with their instructors (of which only 19 percent could be classified as family relations), is significant. It discounts the belief that the transfer of skills within the Jua Kali sector is largely restricted to members of the kin. Further, it is consistent with findings from three other African countries (discussed in chapter 2 of this study), where it was shown that positive kinship relations between informal apprentices and their masters accounted for only 32 percent (Cameroon), 30 percent (Senegal), and 24 percent (Togo), of the samples studied.

Although a number of writers have in the past linked informal apprenticeships in the Jua Kali sector to the social networks or the kinship factor (Oketch 1995; King, 1996; and Macharia, 1997), none of them provided empirical data to support their assertions. This study therefore demonstrates that while the kinship factor might play a significant role in aspects of informal entrepreneurship generally (such as in the allocation of sites and in other economic and political aspects of the Kenyan community, such as employment and voting patterns), it does not have a similar influence on skill acquisition and transfer. Further, unlike Togo where it has been argued that the apprenticeship system is sustained by kinship relations, and Cameroon where it is premised that kinship networks legitimize checks against exploitation of the apprentice by the master, Kenya's Jua Kali apprenticeship system is neither sustained by kinship networks nor does it employ kinship networks to legitimize checks against exploitation of the apprentice (if any) Instead, the highly competitive nature of the sector as well as the characteristic ease of entry and exit by entrepreneurs and trainees alike, act as adaptive responses to any forms of exploitation.

It was noted, in chapter two of this study, that the equity criterion is one of the key factors upon which the provision of vocational education and training is usually justified. If the informal Jua Kali sector is to be actively promoted as an alternative mode of vocational training, then it must continue not to limit skill transfer to kinship relations, as this would be counterproductive to equity considerations.

Defining Competency Levels of Jua Kali Workers

It has been noted, in chapter two of this study, that Jua Kali workers seem to enjoy a multiplicity of titles which in reality neither reflect their theoretical and practical competencies, nor their socio-economic status. The various titles used to describe Jua Kali workers include: artisan; craftsman; semi-skilled workers; skilled operators; entrepreneurs; majority poor; informal traders; masters; innovators and Jua Kalis. These titles reflect the three criteria upon which Jua Kali workers are described: levels of technical competency; socio-economic status; and the entrepreneurial culture. When Jua Kali workers are described on the basis of the technical competency criteria, they are usually equated to formally trained

artisans or craftsmen. The usual assumption is that the level of technical competency among Jua Kali workers is certainly lower than that of a technician in the formal sector. Clearly, this is a problematic assumption for two reasons: there is currently no system of equivalencies by which the skills and expertise acquired in the Jua Kali sector can be measured, evaluated and certified; and although the majority of workers in the Jua Kali sector have been trained informally on-the-job within the sector, there are few who have been trained in the formal sector. This means that one cannot talk of Jua Kali workers as being simply artisans or craftsmen.

On the other hand, whenever the socio-economic status is the criterion applied to describe the Jua Kali workers, the assumption is that such workers comprise the majority of the poor in society. However, this study has shown that 88 percent of the Jua Kali workers earned more than artisans in the civil service, and about 60 percent had average monthly incomes that were either equal to or higher than those of middle income civil servants. This has been confirmed by recent official acknowledgement by the Kenya government that in fact, Jua Kali workers have higher incomes than most formal sector workers. Commenting on this, the Commissioner of the Kenya Revenue Authority revealed that the informal sector employed 2.2 million people in Kenya, and this was 600, 000 more than those employed in the formal sector. However, he argued, the taxation system had:

> ... been highly skewed towards the formal sector, especially salaried employees and registered business concerns. Despite matatus (commuter taxis), kiosks, salons and other small businesses being very lucrative by our regional standards, leaving them out of the tax bracket while going for lowly paid workers is no doubt unfair and discriminatory (Nation, 24 Nov,1998, p.4).

Describing Jua Kali workers on the basis of enterprise culture criterion is less developed and has attracted less emphasis, although it is not as problematic as the preceding criteria discussed above. In the absence of clear structures, mechanisms and acceptable scales of equivalencies by which the vast knowledge, skills and related competencies among Jua Kali workers (developed in the sector itself) can be measured, evaluated and externally certified, misunderstandings as well as underestimation or overestimation of the potential of the Jua Kali sector as a mode of vocational training are likely to continue.

The Self-Employment Factor and Quality Assurance in Jua Kali Training

The importance of the Jua Kali sector in employment generation in general, and self-employment in particular, constitutes the major reason upon which its development and growth have been traditionally advocated by governments, development agencies and policy makers. Many of the studies have asserted and perpetuated this developmental dimension of the sector. However, no attempts to link the self-employment factor to the actual training process have been made. A significant finding of this study is that the self-employment factor acts as an in-built mechanism for trainee motivation and quality assurance. The aspiration for a majority of trainees was to be self-employed upon graduation. Self-employment demands specific knowledge, skills and attitudes among entrepreneurs. These are: technical competency; skills in business management, marketing and client relations; independence; innovativeness as well as ability and willingness to take risks. The trainees are aware of these requirements and the competitive environment within which they are bound to operate as self-employed entrepreneurs. Accordingly, they strive, during the training period, to learn and acquire the vital skills that would ensure their success in self-employment. Such trainees have a high motivation to succeed, and usually strive to develop the culture of independence, as they know that a dependent individual is unlikely to succeed in the competitive environment that characterize the informal Jua Kali sector in Kenya.

As discussed in chapter four of this study, the quality of service rendered or products manufactured by a Jua Kali enterprise, is subject to market validation and crucial to client attraction and retention, which in turn determines the profitability and eventual survival of the enterprise. It is in view of this that the self-employment factor plays a significant role in the development of certain skills, knowledge and attitudes such as independence and critical thinking, among Jua Kali trainees. These are also also the hallmark of many formal education and training systems.

Before drawing the conclusions of this study, a brief reminder of, and explanation to one of the main assumptions of the study is necessary, as a way or re-emphasizing the validity of those conclusions. It has already been acknowledged in chapters one and three that this study

was carried out under certain financial and time constraints. This meant that it was not possible to independently verify the educational qualifications of each respondent by visiting schools (where applicable) that kept the respondents' academic records. Likewise, the estimation of the unit cost of training, as well as the earning capacities of Jua Kali instructors, was based entirely on the responses provided by respective respondents. Verification of such information was not possible, as request to inspect cash flow records would have prejudiced respondents against providing truthfully other forms of relevant data. However, given the fear for direct taxation of income, it is possible that Jua Kali instructors reported monthly incomes that were lower than the actual ones. If that is so, the conclusions drawn here are even more startling, for with true monthly incomes, earning disparities would have been higher.

Conclusions

On the basis of the findings of the present study, the following conclusions are drawn:

1. The educational profiles of Jua Kali trainees revealed that the majority were primary school leavers, who had met requirements for progression to subsequent levels of formal education and training, and had performed well in subjects that are usually considered essential for laying a firm foundation for technical careers (languages, mathematics and science). Accordingly, the assumption that the Jua Kali sector consists of workers and trainees who have low levels of education has been confirmed. However, the assumption that such trainees and workers were academic rejects (failures in National Examinations) that could not make it through the formal route, has been disproved by this study. Instead, the study suggests that Jua Kali trainees, within occupations covered by this study, have the necessary potential and flexibility for trainability.

2. This study established that the relative contribution of the three modes of vocational training to the Jua Kali workforce was: formal pre-employment at public vocational training institutions (12.75%); formal apprenticeship in the modern private sector (15.69%); and informal apprenticeship in the Jua Kali sector (71.57%). Thus the

informal Jua Kali sector has a "self-multiplier" effect in skills development, as nearly three quarters of the skilled workforce were trained entirely on-the-job within the sector itself. Further, it is evident from this study that Jua Kali managers and instructors consider apprenticeship training as an integral and substantive component of enterprise activities. Consequently, the assumption that formal vocational and technical training institutions are major suppliers of the Jua Kali workforce, and that the training function of the informal sector is secondary to, and a by-product of the production function, cannot be upheld. Moreover, given that 98 percent of the respondents indicated they had never received any direct financial, material or technical assistance from either the government or donor agencies, this study clearly demonstrates that past and present Kenyan policies and strategies of developing formal training institutions and programmes as a way of skills development for the informal Jua Kali sector, may be noble in the long term, but are largely misplaced in the present context.

3. Skill transfer from the master craftsman to the trainee in skilled occupations within the informal Jua Kali sector is not, to a large extent, restricted to kinship relations, as only 19 percent of the respondents had family relations between the instructor and the trainee. This applies whether a Jua Kali enterprise is geographically located within or outside the master craftsman's home district. Accordingly, as a mode of vocational training, the Jua Kali sector does not only offer a viable alternative strategy for the development of Kenya's middle level technical workforce, but does so without compromising the equity rationale for vocational training.

4. The informal Jua Kali sector largely meets the three criteria of relevance. It: produces graduates who are readily marketable, with enhanced labour mobility, both within and across the sector; produces graduates who reasonably cope with technological changes and the underlying skill requirements (through strategies such as the development of technological confidence, a culture of technological innovation, intra Jua Kali consultations, and inter sectoral linkages); enhances the life chances of disadvantaged groups. This was reflected by the fact that the majority of the Jua Kali graduates had very short job search periods; they had relatively good incomes; they had undergone

some form of labour mobility in which skills relevant to their initial training were utilised, and motor mechanics, for instance, were able to service and repair the oldest and latest makes and models of vehicles which demand different levels of technological expertise.

5. While inter sectoral mobility among Jua Kali graduates may promote technological skill transfer between the two sectors, its contribution to the development of managerial and supervisory skills in the informal sector is insignificant (if any). This is evident from the fact that none of the Jua Kali graduates who had worked in the formal sector were employed in, or had attained the status of a supervisor or manager, by the time they returned to the Jua Kali sector. The implication is clear: neither management skills developed at formal modern enterprises nor those provided through entrepreneurial education at formal technical institutions, filter in any significant way, to the informal Jua Kali sector.

6. The informal Jua Kali sector as a mode of vocational training is characterised by a high external efficiency as reflected in impressive records of post training experiences among its graduates. There are relatively smooth transitions from training to work; there are generally short job search periods of less than three months for the majority (77.8%); there is an average monthly income of more than Kenya Shillings 4500 for the majority (60%); and there are positive trends in the direction and magnitude of labour mobility. However, the internal efficiency of the Jua Kali sector as a mode of vocational training, suffers some degree of distortions. While the sector is characterised by high instructional efficiency with instructor-trainee ratios of between 1:1 and 1:3, and relatively high trainee completion rates of 82 percent on average, it posts comparably high average unit costs of training for its programmes: the highest being KShs. 124,000 for electrical/electronics trades, and the lowest being KShs. 44,000 for carpentry. Among the causes of the high unit costs of training are: unsteady job flow; prolonged periods of dormancy; high instructor costs; and inadequate marketing strategies for training opportunities offered by the sector. Accordingly, there is room and need for improving the cost-effectiveness of vocational training in the Jua Kali sector, by devising policies and strategies that address the above aspects.

These are addressed in the next section of this chapter.

7. The review of literature on training and related characteristics of the informal sector in some other African countries, provides evidence of some converging as well as diverging trends. The convergence is that in Africa generally, considerations of kinship relations are playing an increasingly insignificant role in the recruitment of informal apprentices and transfer of skills from the master to the apprentice, particularly in skilled occupations covered by this study. Equally, formal vocational and technical training institutions, as well as formal apprenticeships in the modern sector, only play a peripheral role in the development of skills for the informal sector: most of the informal sector workers develop their technical as well as managerial skills entirely on-the-job within the sector itself. The major divergence between Kenya's Jua Kali sector and the informal sector of West African countries in particular, lies in the nature of apprenticeship contracts, modes of trainee "certification" (exit from training) and mechanisms for the establishment of self-employment. The Kenyan system is highly liberalized, allowing unrestricted entry into and exit from both training and self-employment, while the West African systems are characterised by certain restrictions (mainly from practising masters). These tend to make durations of training fixed and inflexible, exit from training subject to elaborate rituals, and entry into occupational practice, controlled in certain ways. Consequently, it is the opinion of this study that these countries' experiences provide lessons of what Kenya's Jua Kali sector should avoid rather than emulate.

8. Overall, findings from this study establish the informal sector as having the prospect of emerging as an increasingly viable alternative mode of vocational training to the formal sector, not only in Kenya but in most other African countries. This prospect lies in three identifiable converging trends:

(a) In most developing countries, employmeut growth in the informal sector outstrips that in the modern sector (Carnoy, 1994, p.240). Given the austerity measures advocated by the World Bank's Structural Adjustment Programmes (SAPs), employment and training opportunities in both the formal public and

private sectors have dwindled. Consequently, governments and individuals are increasingly, looking to the informal sector as an alternative;

(b) The number of school leavers (often without marketable skills) released into the labour market, far outstrips the number of training opportunities in formal technical training institutions. As a result, many young people, albeit with requisite academic qualifications for progression to higher levels of formal schooling or vocational training, are shunted out of the system. Their probable recourse will increasingly be the informal sector; and

(c) The policy of privatising education at all levels (especially secondary and higher education), where the greater part of the cost of education and training is to be met by the beneficiary, has led to the cost of education rising beyond the reach of most children from poor socio-economic backgrounds. Moreover, most individuals who go through the formal education and training system have no guaranteed employment upon graduation. In contrast, the informal sector (though private) provides flexible, comparably low cost and marketable training programmes. This sector is therefore likely to continue playing a significant role in enhancing the life chances of young people from socially and economically disadvantaged backgrounds, and thus being a major a major force in social equity.

Recommendations

The findings of this study have implications for policy, strategies (practice) and further research. However, for purposes of clarity, the recommendations made below are presented under two themes: policies and strategies; and areas for further research. They should be viewed as having a common goal: enhancing the informal Jua Kali sector as a mode of vocational education and training in Kenya, through policy reform that is informed by research rather than driven by assumptions about the nature and characteristics of the sector.

Policies and strategies

According to Metcalfe (1995), policy that seeks to enhance productivity among enterprises should address three areas: opportunities; incentives; and resource distribution. Also to be taken into account is policy delivery; how policy should interact with the agents it seeks to influence. In exploring alternative policies and strategies for the development of the informal Jua Kali sector, this study took the above observations into consideration. Accordingly, in order to enhance the informal Jua Kali sector as a an alternative mode of vocational education and training in Kenya, the following recommendations are made:

Quality of Jua Kali Trainees

This study has shown that the quality of trainees recruited into Jua Kali apprenticeship programmes is influenced by three factors: the level of exit from the formal school system by the trainee; the type and quality of curriculum offered at that level of exit; and the level of formal education attained by the instructor. Since it is evident that a large proportion of trainees in the sector are primary school leavers, and that Jua Kali instructors are likely to recruit trainees whose level of education is either lower than or the same as their own, two policy implications for enhancing the quality of trainees are clear.

First, the government should strengthen the primary school curriculum with specific emphasis on developing strong communication, mathematical and scientific knowledge and skills, upon which specialized technical training in the informal sector can build. In seeking to strengthen the curriculum, Jua Kali instructors and trainees should be seen as stakeholders and their views taken into consideration. The revamped curriculum should not seek to impart specialized technical skills to primary school pupils, as many studies (reviewed in chapter two of this study) have shown that the formal school is ill equipped for such a task. In addition, the government should (as a long term goal) seek to raise the minimum level of formal education for the majority of Kenyans. This may be achieved by identifying and addressing factors that are responsible for the low transition rate (approximately 50%) from primary to secondary school.

Second, in the short term, efforts by Government and Development Agencies should be directed at changing instructors' attitudes towards trainees with higher levels of formal education than their own. One way of achieving this is by organizing and holding seminars at which such issues are deliberated on, while at the same time providing certain incentives that encourage instructors to take on such trainees. Such seminars should not only target Jua Kali instructors, but trainees as well. Some of the trainee respondents in this study indicated the need for guidance and counselling programmes which target both trainees and instructors

Marketing Training Opportunities in the Jua Kali Sector

The government (through relevant ministries), the media, and the career counselling programmes in schools should market the informal Jua Kali sector as an alternative mode of vocational training and not as a dumping ground for academic rejects. The latter only works to create, enhance and sustain a false and negative public image of the sector and benefits no one. Given that the sector absorbs and trains a higher proportion of school leavers than the formal post school technical training institutions (Yambo, 1991, p.12), it is imperative that the marketing strategies of the sector do not only focus on products, services or employment opportunities, but on training opportunities as well. Specific recognition of, and emphasis on the training component of the sector, backed by focussed marketing strategies, will not only serve to attract an increasingly high calibre of trainees and instructors, but will also attract vital resources from individuals and funding agencies that can be used to improve the quality of training offered by the Jua Kali sector. It is in this light that schools, the media and planning committees of National Jua Kali Exhibitions should be exploited as possible avenues for marketing the training opportunities of the sector.

Establishment of Productive Linkages

Realistic and productive linkages between the informal Jua Kali sector and formal pre-employment technical training institutions need to be explored and developed, by both the government, development agencies with interest in Jua Kali development, as well as the Jua Kali entreprenеurs themselves. As shown in this study, not only do the formal pre-

employment training institutions supply skilled workforce (although on a significantly small scale) to the informal Jua Kali sector, but the Jua Kali sector also provides practical training to trainees from such institutions in the form of field attachments. Consequently, the prevailing training policies which tend to prescribe what the formal training sector should do *for* the informal Jua Kali sector, by assuming a unidirectional linkage between the two, should be reviewed. One important area of linkage would be facilitating accessibility of formal technical institutional libraries to informal Jua Kali trainees, as books and other written materials would be perishable in most Jua Kali enterprises.

Nature of Intervention by Government and Development Agencies

There is need for the government and other development agencies to shift development strategies from those that reflect either a total neglect of, or partial support for the training component of the informal Jua Kali sector, to those that consider it as integral to employment generation. As has already been shown, a considerably high proportion of the skilled workforce in the informal Jua Kali sector is trained within the sector itself. This study has demonstrated that a continued active pursuit of policies which emphasize the development of formal pre-employment vocational training institutions and programmes, as a principal way of achieving enhanced technical and managerial skills as well as productivity among the Jua Kali workforce, has an insignificant impact.

In essence, strategic intervention by the government should not entail direct control of the sector through additional legislation, but the provision of infrastructure such as land, electricity, water, roads, telephone facilities, as well as an enabling entrepreneurial environment within which Jua Kali activities can thrive. Thus government involvement in the development of the informal Jua Kali sector should neither be passive (hands off), restrictive (tight control) nor repressive (destructive) but supportive. On the other hand, development agencies should channel the bulk of assistance directly to the informal sector itself, and target not only selected instructors but trainees as well. Provision of scholarships to Jua Kali apprentices, on-site workshops for instructors and trainees, and the direct development of instructional materials (including certain equipment) are options to be considered by

development agencies. Loans should not only be directed towards assisting graduates to start self-employment, but also towards assisting apprentices to meet the cost of training.

Certifying Jua Kali Qualifications

An important policy recommendation is for the government to establish a system of equivalencies by which qualifications attained within the informal Jua Kali sector can be evaluated and certified. Such a system can be established through joint efforts by Jua Kali instructors (individually or through Jua Kali Associations), formal sector trainers and employers, and a central examinations body specifically established for that purpose. The present provision, which requires Jua Kali graduates to be subjected to formal government trade test examinations as the only avenue of certifying their knowledge and skills, has largely been rejected by the majority of Jua Kali workers on the grounds that it is modelled along formal training modes, and these hardly meet the sectors' needs. Certification of the competencies of Jua Kali workers will open further opportunities for them to secure jobs in the formal sector, create avenues for individuals who wish to pursue further technical training even within the formal modes to do so, and allow Jua Kali entrepreneurs to compete with modern enterprises for tenders that require formal certification.

Improving the Cost-effectiveness of Training

Most Jua Kali enterprises operate below their optimum "class" capacity (usually have fewer trainees than they can, in the opinion of managers and instructors, recruit and train effectively and efficiently), they experience prolonged periods of dormancy, and are characterised by relatively high instructor costs. In order to improve the cost-effectiveness of training in the sector, these are the three factors that need to be addressed. In part, the strategies for marketing and establishment of productive linkages outlined above, if implemented, will optimize class capacities and contribute towards ensuring smooth job flows. Further, ensuring smooth job flows and optimising class capacity will considerably reduce the duration of training, which was identified by this study as one of the factors that inflates the unit costs of training. The overall effect of these measures would be an improved internal efficiency of the

sector as a mode of training. Clearly, most of the strategies for improving the internal efficiency of Jua Kali enterprises call for collaborative efforts between the Jua Kali instructors themselves, the government and other development agencies.

Areas for Further Research

This study has not only provided answers to the research questions that were under investigation, but has also raised questions and issues that have remained unresolved. Accordingly, three areas for further research are recommended. First, to what extent is it true that: (i) Jua Kali masters (instructors) pass on skills to apprentices but that they rarely create knowledge?; and (ii) the absence of any formal instruction favours the development of skills but limits theoretical understanding (Middleton, 1991)?. Given that informal apprenticeship in the Jua Kali sector is characterised by the culture of innovation (as has been shown in this study), it is probable that through experience, Jua Kali apprentices develop and innovate beyond the competency levels of their masters. However, these hypotheses can only be confirmed or rejected through further research.

Second, research has shown that higher levels of formal education improve trainee performance in formal technical training programmes. However, the Jua Kali instructors have argued (in this study) that the contrary is true for the informal sector. To what extent can differences (if any) in trainability and productivity between primary school leavers and secondary school leavers who opt for informal apprenticeship in the Jua Kali sector, be attributed to the levels of formal education rather than other competing factors such as trainee motivation and instructors' biases? Clearly, these are questions that call for further research.

Third, while this study has shown that the inform Jua Kali sector fulfills the equity objective, it is evident that such equity does not embrace the gender dimension. Accordingly, further research is needed in order to determine not only underlying factors for the apparent gender inequity in skills formation, but also establish viable strategies for addressing the disparity.

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Appendix 1

QUESTIONNAIRE TYPE A

TO BE COMPLETED BY TRAINEES IN THE INFORMAL JUA KALI SECTOR IN KENYA

Instructions

This questionnaire is part of the research being carried out to examine various aspects of the informal Jua Kali sector as a mode of vocational education and training in Kenya. You have been identified as one of the key persons to make important contributions to this study, through your honest and accurate responses to items in this questionnaire. The results of this study will make a vital contribution towards efforts to understanding and enhancing the informal Jua Kali sector as a mode of vocational training in Kenya, and will be made known to you upon request.

The information you give will not be used for any other purpose than that stated above, and any personal information you give will be kept confidential. For items which have multiple choice answers, please tick your preferred response.

1 Name of Enterprise _____

2 Describe the location of this enterprise by filling in the spaces below:

Province _____

District _____

Town/market centre _____

3 Indicate whether the enterprise is located in a city, municipal, town council or market centre.

City Council

Municipal Council

Town Council

Market Centre

4 Indicate whether you are male or female.

Male

Female

5 Into which of the following categories does your age fall?

14 years or below

15 - 18 years

19 - 24 years

25 years or above

6 Name of your home district _____ _____

7 What is the Highest level of formal schooling you attained?

Primary (not completed)

Primary (completed)

Secondary (not completed)

Secondary (completed)

Certificate level college

Diploma level college

University

Other (specify) _____

8 If you completed primary school, into which of the following categories does the total mark that you obtained in the Kenya Certificate of Primary Education (KCPE) fall?

350 or below

351 - 499

500 or above

9 If you completed primary school, into which range (0 - 39, 40 - 49, 50 - 59, 60 -69, 70 - 100) does the mark you obtained in each of the subjects named in the table below falls?

Subject	Mark range
English	
Kiswahili	
Mathematics	
General Science	
Home science	
Geo/Hist/Civics (GHC)	

10 If you completed secondary school, into which of the following ranges does the mean grade that you obtained in Kenya Certificate of Secondary Education (KCSE) fall?

A - B-

C+ - C-

D+

D - E

11 If you completed secondary school, into which of the following ranges (A - B-, C+ - C-, D+, D - E) does the grade that you obtained in each of the subjects listed in the table below fall?

Subject	Grade range
English	
Kiswahili	
Mathematics	
Physics	
Chemistry	
Physical Sciences	
Business Education	
Applied subject (Metal work etc.)	

12 State the name of the last primary and secondary school (where applicable) which you attended, the district where it was or they were located, and the year you left the school. Fill the required information in the table below.

Name of primary school	District where located	Year you left	Name of secondary school	District where located	Year you left

13 How long did it take, from the time you left formal school to the time you first started your training in the informal Jua Kali sector?

Less than one (1) year

1 - 2 years

More than two (2) years

14 Did you have any job or working experience somewhere else before joining this enterprise for your current training?

Yes

No

15 If your answer to question 14 is "yes", please fill the table below to provide information on all types of jobs or working experiences that you had before starting your current training in the Jua Kali sector, the employer(s), duration (i.e how long you worked with the employer(s) that you have listed), and your monthly salary at the time you left that employer to join the informal Jua Kali sector for training.

Type of job	Name of employer	Duration	Monthly salary (Kshs)

16 From which of the following sources did you learn about the existence of training opportunities in the informal Jua Kali sector before you joined this enterprise?

School (Career guidance and counselling)

Mass media (Radio, TV, or Newspapers)

Enterprise itself

Family (Relatives or family friends)

17 What were your major reasons for choosing to do this course in the Jua Kali sector?

_____

_____

_____

_____

_____

_____

18 Do you pay fees for this training?

Yes

No

19 If your answer to question 18 is "yes", state the amount of fees that you pay.

Kshs._____ per month

Kshs._____ ____ per year

Kshs._____ for the whole course

20 Who provides you with accommodation (housing), while on training?

Enterprise

Parents

Self

Other (specify)_____ _____ _____

21 If you do not stay with your parents while on training, state the amount of money you pay monthly for food, and for house rent (including water and electricity where applicable).

Food, Kshs _____ per month

House rent, Kshs _____ per month

22 If you stay far from the enterprise, state the means of transport that you use from your residence (the place where you stay) to the enterprise?

Walk (foot)

Bicycle

Motor cycle

Personal vehicle

Public service vehicles (Bus or "Matatu")

23 State the amount of money (if any) that you spent on transport from your residence to the enterprise and back each month.

Transport, Kshs _____ _____ per month

24 Please specify any other expenses you incur for this training, and the amount involved (for the whole course) in each of the expenses listed e.g

Protective clothing Kshs _____

Books/Stationary Kshs _____ ____

Equipments Kshs _____ __

Other (specify)

_____ Kshs _____

_____ Kshs _____

25 Do you receive any income (in form of salary or allowances) from the enterprise during your training period?

Yes

No

26 If your answer to question 25 was "yes", please state the amount of money you receive per month.

Kshs _____ ____ per month

27 Are you related in any way to your instructor? i.e is the instructor your relative?

Yes

No

28 If your answer to question 27 was "yes", which of the following statements best describes the relationship between you and your instructor.

My instructor and I come from the same family (eg. father, uncle, cousin, brother, in-law etc).

My instructor and I belong to the same tribe, but not family

My instructor and I come from the same district, but do not belong to the same family or tribe.

29 In the space below, describe what your parents do for a leaving at present. If they are dead or retired from employment, state what type of job they were doing before they died or retired.

Father _____ _____ _____ _____

_____

_____

Mother_____ __ _____ ____

_____

_____

30 Fill the table below (see next page) to indicate: (i) the highest level of formal schooling that each of your parents reached (enter in the relevant column either primary, secondary, college, university, or "none" if they did not go to any formal school; and (ii) the ability of each of the parents to read and write (enter "yes" or "no" in the relevant columns).

Type of parent	Highest level of education	Ability to read and write
Father		
Mother		

31 Do you think this training has benefited you in any significant way since you started?

Yes

No

32 If your answer to question 31 is "yes", state the major ways in which you think you have benefitted as a result of undertaking this training (start with the most important).

_____

_____

_____

_____

33 Do you think you have any advantages over your counterparts who are training for the same job but in a Youth Polytechnic or some other formal technical training institution?

Yes

No

34 If your answer to question 33 was "yes", please state the advantages that you think you have over the trainees in formal technical training institutions.

_____

_____

_____

_____

35 If your answer to question 33 was "no", please state the advantages that you think the trainees in formal technical training institutions have over you.

_____

_____

_____

_____

36 What do you plan to do after your training?

_____

_____

_____

37 How much money do you expect to earn per month in your first employment after completing this training?

Kshs _____ per month.

38 Are there any major problems you have been experiencing with this training program?

Yes

No

39 If your answer to question 38 was "yes", in the space provided below, state what you think, from your experience so far, are the major problems that a trainee in the informal Jua Kali sector would face during his or her training.

_____

_____

_____

_____

40 If your answer to question 38 was "yes" and you have answered question 39, state what measures you think should be taken in order to solve each of the problems you have outlined above?

_____

_____

_____

_____

_____

_____

_____

41 Would you recommend to your friends or relatives to take the same type of training you are undergoing within the Jua Kali sector?

Yes

No

Appendix 2

QUESTIONNAIRE TYPE B

TO BE COMPLETED BY INSTRUCTORS IN THE INFORMAL JUA KALI SECTOR IN KENYA

Instructions

This questionnaire is part of the research being carried out to examine various aspects of the informal Jua Kali sector as a mode of vocational education and training in Kenya. You have been identified as one of the key persons to make important contributions to this study, through your honest and accurate responses to items in this questionnaire. The results of this study will make a vital contribution towards efforts to understanding and enhancing the informal Jua Kali sector as a mode of vocational training in Kenya, and will be made known to you upon request.

The information you give will not be used for any other purpose than that stated above, and will be kept confidential. For items which have multiple choice responses, please tick your preferred response.

1 Name of the enterprise_____ ____ —

2 Location of the enterprise

Province _____

District _____

Town/Market _____

3 Indicate whether the enterprise is located in a city, municipal, town council or market centre.

City council

Municipal council

Town council

Market centre

4 What is the name of your home district?

_____

5 State whether you are the sole owner, a partner or an employee of this enterprise.

Sole owner

Partner

Employee

Other (specify)__ _____ _____

6 Into which of the following categories does your age fall?

14 - 24 years

25 - 45 years

46 years or above

7 What is the highest level of formal schooling you attained?

Primary school (completed)

Primary school (not complete)

Secondary school (completed) *see next page before you tick*

Secondary school (not complete)

College

University

Other (specify) ----------

8 How long did it take, from the time you left formal schooling to the time you started your initial training for this job?

Less than one (1) year

1 - 2 years

More than two (2) years

9 Into which of the following classifications does your job fall?

Motor vehicle mechanics

Auto - electrical (wiring)

Body building/Panel beating/Spray painting

Electrical/Electronics

Welding and fabrications

Tin Smith

Building construction

Carpentry and joinery

Shoe-making and repair

Other (specify)_____

10 Where did you take your initial training for this job?

On-the-job training in the Jua Kali sector

On-the-job training in a private factory/industry/company

Formal pre-employment training at a technical training institution

Other (specify)_____

11 How long did your initial training take (approximately)?

One (1) year

Two (2) years

Three (3) years

More than three (3) years

12 How long did it take you, after your initial training, to get your first employment in a job which directly required the skills that you had acquired during your training?

I got employment immediately

3 6 months

7 - 12 months

Over 12 months

13 What is your personal average monthly income (salary) from your employment with this enterprise?

Kshs 2400 or below

Kshs 2500 - 3500

Kshs 3600 - 4500

Kshs 3600 - 4900

Kshs 5000 - 6900

Kshs 7000 - 8000

Above Kshs 8000

14 Have you ever worked with any other Jua Kali enterprise apart from this one?

Yes

No

15 If your answer to question 14 is "no", move to question 17. If your answer is "yes", state the total number of Jua Kali enterprises you have worked with (including the current one), as well as the shortest and longest period you have worked with any one of those enterprises.

(i) Total number of Jua Kali enterprises you have worked with

_____

(ii) Shortest period you have worked with any one of them

_____

(iii) Longest period you have worked with any one of them

_____

16 Which of the following reasons best explains your movement from one Jua Kali enterprise to another?

Need for a better salary

Need for establishing your own enterprise

Need for acquiring more skilled training

Loss of employment with previous enterprise

Other (specify) _____

17 Have you ever worked with any other employer outside the informal Jua Kali sector?

Yes

No

18 If your answer to question 17 is "no", move to question 20. If it is "yes", please fill the table below by stating whether your previous employer(s) belonged to the public or private sector, the length of period (duration) yon worked with that employer(s), and the title of the highest status you occupied while working with that employer(s).

Name of employer	Sector	Duration (months)	Status

19 Which of the following reasons best explains why you moved from either the public or formal private sector to the Jua Kali sector?

Attainment of compulsory retirement age

Voluntary retirement for reasons other than age

Voluntary resignation purposely for starting self-employment

Other (specify) _____

20 How many of the apprentices (trainees) currently training in this enterprise are directly under your supervision as their instructor?

_____

21 Are you related with any of your trainees (e.g by tribe or family associations such as son/daughter, cousin, uncle, in-law etc)?

Yes

No

22 If your answer to question 21 is "yes", please tick the statement(s) below which best describes the relationship between you and your current trainee(s). For each dash, fill in the number of trainees for whom that statement applies.

_____ trainee(s) and I belong to the same family

_____ trainee(s) and I belong to the same tribe but not family

_____ trainee(s) and I come from the same district

23 How long have you worked in the informal Jua Kali sector?

_____

24 Approximately how many apprentices have you successfully trained since you started working in the Jua Kali sector?

_____

25 For those apprentices you have successfully trained, as stated above, how many do you know where they are and what they are doing for a living?

_____

26 Out of the number you have stated in question 25, please specify how many are:

(i) Unemployed _____

(ii) Employed in jobs where they are directly making use of relevant skills acquired from the Jua Kali training that they had.

(iii) Employed in jobs which have no relevance to the skills they acquired from the Jua Kali training that they had.

27 How many of the apprentices you have stated in question 26 (ii) are working in the :

(i) Informal Jua Kali sector_____

(ii) Formal private sector ___ ___ _____

(iii) Public sector (government)_____

(iv) Your own enterprise_____ _____ _____

28 What has been your largest class size at any one time (i.e the total number of trainees directly under your supervision as their instructor) in this enterprise?

29 What is the minimum number of trainees you have had in this enterprise at any one time? (If there is any time that you have had no trainees, please write zero (0) as your response to this item).

30 What do you think is the maximum number of trainees you can admit and efficiently train at any one time (i.e the maximum class capacity), under the prevailing conditions in this enterprise?

31 From your experience as an instructor in this enterprise have you, on average, been operating:

Above maximum class capacity?

Below maximum class capacity?

At maximum class capacity?

32 If you have been operating, on average, above maximum class capacity, state what you think have been the major contributing factors to this situation?

_____

_____

_____

_____

_____

33 If you have been operating, on average, below the maximum class capacity, which one of the following do you consider as the most important reason that accounts for this situation?

Lack of people who want to take up the existing training opportunities.

High dropout rates (i.e trainees who, for various reasons, leave before successfully completing their training program).

Other (specify) _____ _____ _____

34 If your answer to question 33 was that you operate, on average below your maximum class capacity due to a high dropout rate, which of the following do you consider as the major contributing factor to the high dropout rate?

Inability of trainees to pay fees or meet other financial obligations related to their training.

Inability of trainees to cope with the academic or practical demands of the training programme.

Trainees get employment in jobs related to their training before completing their courses.

Other (specify) _____ _____ _____

35 From your experience as an instructor in the Jua Kali sector, which of the following do you consider as the most important factor that determines the quality of a trainee and his/her likelihood of good performance in his/her training?

Level of general education

Physical fitness

Desire to own a similar enterprise *see next page before you tick*

Interest in type of skills/knowledge gained.

Age

Other (specify)_____

_____

36 In your opinion, what are the major objectives of this Jua Kali training (programme) that you offer to your trainees? (List them as objective (i), (ii), (iii), etc starting with the most important).

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

(iv) _____

_____

37 What specific activities or which specific aspects of your training programme do you think have been designed to ensure that each of the objectives you have listed in question 36 is attained?

Objective (i)

_____

_____

_____

_____

Objective (ii)

_____

_____

_____

Objective (iii)

Objective (iv)

38 How do you determine whether each of the objectives stated above has been achieved or not i.e how do you assess your trainees?

39 Do you have any links with formal industries, factories or other modern enterprises in the private or public sector, which offer similar services or utilize similar skills as those in your enterprise?

Yes

No

40 If your answer to question 39 is "yes", specify the type or nature of links you have with those industries, factories or other modern enterprises.

41 If your answer to question 39 is "no", please give reasons why you think there are no links between you or your enterprise and formal industries, factories or other modern enterprises in the private or public sector?

42 We are living in a world of rapid technological changes, where new products which probably demand new or advanced skills, are introduced into the market quite often. How do you, as a Jua Kali craftsman and instructor, cope with the changes in skill requirements?

43 Provide a brief description of your vision (what you expect) of this type of Jua Kali training in your enterprise in particular, and the informal Jua Kali sector in general, in the next 10 - 15 years.

44 From your experience, what do you consider as the major problems that Jua Kali enterprises face in their efforts to provide efficient and effective training to their trainees?

45 In your opinion, which measures should be taken in order to improve the training offered by Jua Kali enterprises?

Appendix 3

CHECKLIST

TO BE COMPLETED BY MANAGERS OF THE INFORMAL JUA KALI ENTERPRISES IN KENYA

Instructions

This checklist is part of the research being carried out to examine various aspects of the informal Jua Kali sector as a mode of vocational education and training in Kenya. Your enterprise has been identified as one of the key Jua Kali enterprises whose training experiences would make important contributions to this study. You are therefore requested to complete this checklist by providing accurate and honest responses to each item. The results of this study will make a vital contribution towards efforts of understanding and enhancing the informal Jua Kali sector as a mode of vocational training in Kenya, and will be made known to you upon request.

The information you give will not be used for any other purpose than that stated above.

1 Name of enterprise _____ ____ ____ ____ ___

2 Which year was this enterprise established?

_____

3 Describe the geographical location of this enterprise by filling in the information below:

Province _____ _____

District _____

Town/Market Centre _____

4 Fill the table below to give information on the type of training programs (courses) offered, total number of instructors for each training program as well as the corresponding number of students for each program.

Type of training program	Total number of instructors	Total number of students

5 Is the land on which this enterprise is located owned or leased?

Owned

Leased

6 If the land is leased, state the total annual rent of land and buildings (if any). Incase the total rent is shared among partners, please state the amount that you or your training programs contribute towards the total rent.

Total rent Kshs __ __ _____ _____ ____ per year.

Your contribution (if shared) Kshs ____ per year

7 If the land is owned, state the amount of money for which it was purchased, the year in which it was purchased and the annual land rates paid to the local council.

Purchase price Kshs _____ _____

Year when purchased _____

Total land rates Kshs _____ per year.

8 Are there any physical structures e.g offices, workshops, classrooms, fences, etc, on the land where this enterprise is located?

Yes

No

9 If your answer to question 8 is "yes", please provide a full description of the physical structures and related information by filling in the table below:

Type of structure	Permanent or temporary	Year of construction	Total cost of construction	lifespan (yrs)

10 How much, on average, does the enterprise spend per year on maintaining each of the structures listed above?

_____

_____

_____

11 Are there any administrative support staff (e.g secretary/receptionist, cashier, messenger/clark, etc.) employed by this enterprise?

Yes

No

12 If the answer to question 11 is "yes", please specify the category or type and number of support staff employed by the enterprise and the total salary (including any allowances such as medical, housing, insurance, etc.) paid to each of the categories per month. Fill your responses in the table below.

Category of staff	Total number	Total salary per month (Kshs)

13 State the salaries (including any allowances such as medical, housing, insurance, etc.) paid by the enterprise per month, to each category of instructors according to the training programs. Fill your responses in the table below.

Type of training program	Total number of instructors	Total salary per month (Kshs)

14 State the amount of money that the enterprise spends, on average, per month on water, electricity, and other forms of energy used to run the training program. If the total amount paid is shared among partners, please state only the amount that your training program(s) contribute towards the total

Water Kshs __ ____ _____ per month

Electricity Kshs _____ per month

Other (specify) _____ per month

_____ _____ ____ per month

____ _____ ____ __ ____ per month

15 State the types of training equipment you have (e.g tools, desks, books, charts, and other items used for demonstrations), the year when they were purchased or constructed, their total cost at the time they were acquired, their estimated lifespan (i.e longest period they are expected to be in use from the date of their purchase or construction), and state whether those equipments are used for any other purpose apart from training activities. Fill the information required in the table below.

Type of equipment	Year of purchase	Expected life span	Cost of purchase (Kshs)	Repair costs/year (Kshs)	Used for?**

Enter "Training**" if the equipment is used for training purposes only, and "**Other**" if the equipment is used for any other purposes apart from training.

16 Do the trainees in this enterprise pay any fees for their training?

Yes

No

17 If your answer to question 16 is "yes", please for each training program, state the total amount of money paid for fees per trainee for the whole training period.

Type of training program	Duration of training (average)	Fees paid per trainee (Kshs)

18 If the trainees pay any other money to the enterprise for services not listed above, specify the total amount paid per trainee for each of the services, over the whole training period.

Type of service Amount paid by trainee per year

_____ Kshs_____

_____ Kshs_____

_____ Kshs_____

19 Does this enterprise pay any money in the form of salaries or allowances to the trainees during their training period?

Yes

No

20 If the answer to question 19 is "yes", specify the training program(s), the duration of training, and the amount of money paid to each trainee by the enterprise, by completing the table below. If the enterprise pays different amounts of allowance to a trainee over the training period, please give the average amount paid per month over the whole training period.

Type of training program	Duration (months)	Number of trainees	Allowance per month (Kshs)

21 List other costs (if any), that the enterprise incurs on the trainee(s), that are not listed above.

Type of cost Amount

_____ Kshs _____ per month

_____ _____ Kshs _____ per month

_____ _____ Kshs _____ _____ per month

22 Tick the statement below which in your opinion best describes the impact of the presence of trainees to the level of productivity (or profitability) of this enterprise.

The presence of trainees makes this enterprise more productive (more profitable) than if they were not there.

The presence of trainees makes this enterprise less productive (less profitable) than if they were not there.

The presence of trainees has no impact or influence on the level of productivity (profitability) of this enterprise i.e they neither improve nor lower productivity of the enterprise.

23 If your answer to item 22 above is that the presence of trainees makes the enterprise more productive, please tick the statement below which in your opinion best explains the reason(s) for improved productivity.

The presence of trainees makes the enterprise more productive or profitable because of the extra income they bring to the enterprise by paying their training fees.

The presence of trainees make the enterprise more productive or profitable because of the labour they provide through their practical participation in the production processes or other related business activities of the enterprise.

24 Does this enterprise keep a record of trainees who are admitted, graduate or dropout of their training program(s)?

Yes

No

25 If the answer to question 24 is "yes", or you have any other way of recalling information about your past trainees, please answer the following questions:

(i) What is the total number of trainees that have been admitted to this enterprise (excluding the ones who are currently still undergoing training), since it was established?

_____

(ii) How many of the admitted trainees (as stated above), successfully completed their training program(s)?

(iii) How many of the admitted trainees dropped out before successfully completing their training program(s)?

(iv) What were the major reasons for trainees dropping out?

(v) How many of the trainees who successfully completed their training are now employed in jobs where they directly make use of the skills they acquired during their training in this enterprise?

(vi) How many of those trainees who successfully completed their training are now employed but in jobs which do not directly require the skills that they acquired during their training in this enterprise?

(vii) How many of the trainees who successfully completed their training program(s) are still unemployed?

(viii) How many of those who successfully completed their training program(s) are employed in the:

(a) Informal Jua Kali sector _____

(b) Private modern sector _____

(c) Public service (government) _____

26 Does this enterprise receive any external financial or material assistance from private organizations such as Non Governmental Organizations (NGO), Churches, etc?

Yes

No

27 If the answer to question 26 is "yes", please specify the specific type of assistance the enterprise receives or has received, and how this helps or has helped the enterprise to improve the training offered to the trainees.

28 Does this enterprise receive any financial, material or other forms of assistance from the government?

Yes

No

29 If the answer to question 28 is "yes", please specify the type of assistance that the enterprise receives or has received, and how this helps or has helped to improve the training offered to the trainees by this enterprise.

30 Are you, in overall, satisfied with the quality and relevance of training that this enterprise is giving to the trainees?

Yes

No

31 If your response to question 30 is "no", in your opinion, what measures if taken, would improve the quality and relevance of the Jua Kali training offered by this enterprise to the trainees?