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**THE QUALITY OF INFORMAL SECTOR PRODUCTION :
POOR QUALITY OR QUALITY FOR THE POOR**

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THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF ENGINEERING

UNIVERSITY OF WARWICK

OCTOBER 1994

DEDICATION

Dedicated to my parents and those who sacrificed their lives during The
Struggle for Freedom.

To Njeri and those who are still continuing the struggle.

To my children and their generation who will carry the burden of the
past as well as of the future.

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ACKNOWLEDGEMENTS

It has been a very solitary process of thinking and writing but also a collective act of exchanging ideas. It has been a war against time, against failed promises and sometimes against myself. It was not possible to overcome the obstacles without the support of a number of people who crossed my path, offering a helping hand or staying behind backing up my actions. I will not be able to express my deepest appreciation to all individually but my thanks go to all of them.

My thanks to Dr. Terry Thomas, my supervisor. Many thanks to Irungu and his brothers for their assistance during this research. Thanks Luiz for the lively discussions that we had and for sharing the belief that it can be done.

My colleagues in the African community at Warwick deserve a special word for their constant encouragement, ideas and especially being around when I needed somebody to talk to. Lawrence Tsuma deserve special thanks for being a friend, for the suggestions that he made during our numerous discussions and for reminding me that “we cannot make virtue out of necessity”.

My thanks go to the People of Kenya. I am aware of the amount of sacrifice they are experiencing to support people like me. I am aware of my responsibilities to them and I will try to repay them in my actions.

Finally my deepest appreciation go to Njeri, my wife, and my children, Kariithi, Wamai and Kiragu. Their support during the long disruption to family life cannot be forgotten. I hope I will make it up to you.

DECLARATION

No portion of this thesis has been submitted in support of an application for another degree or qualification from this University or any other Institution of Higher Learning.

SYNOPSIS

A glance through the voluminous literature on micro-enterprises clearly shows the existence of robust information on the role, definition and the importance of informal sector in economic development. The literature however contributes very little to knowledge on the technological dimension of the sector. Little is known about the quality of products manufactured in the sector although much has been written on quality in large scale manufacturing. This research attempts to fill this gap by exploring the status of quality in micro-enterprises and the factors that contribute to it.

The adopted methodology consisted of producer and consumer surveys. This was complemented by product tests, and experiments to determine the applicability of interventions to improve quality. User-based measures of quality formed the basis of measurement in this research.

The products were found to be of poor quality in that they did not fulfill the task and non-task attributes that underlie a purchase by a consumer. The low quality was attributed to inadequate facilities and processes, poor quality materials and a low level of skills in the sector. Quality may be improved through either changing these inputs or raising their quality.

The findings revealed a wide range of innovative behaviour by micro-entrepreneurs. However, the micro-entrepreneurs were found to be perpetuating an imitative model which inhibits their innovative capability.

Interventions directed at improving products, processes and skills could empower micro-entrepreneurs through building their self confidence which could in turn generate fresh innovations.

CHAPTER ONE

INTRODUCTION

1.1 Background

The decade of 1980s has been characterised by economic crisis and regression in Kenya. Practices associated with the 1970s such as cheap external finance and increased public investment, have yielded to low commodity prices and high real interest rates. People have experienced an economic decline and poverty has increased in the country.

Given this landscape, the government is engaging in structural adjustment reforms to the economy and simultaneously searching for ways to foster growth. Foreign borrowing to finance development is no longer an option due to high interest rates and the enormous current foreign debt. The assertion that growth could come through the impetus of large industries has not yielded results and hence the country has to look for ways to produce and create economic growth. In the last eight years, the government has increased its attention on the informal sector. The universality of the sector, its heterogeneity and the growing population has turned the authorities in its direction. While issues related to tax evasion and circumvention of the law by economic activities in this sector find their place in this increased interest, in every instance, the

government's position is now to support the sector's development rather than to obstruct its economic activity.

The growing presence of the informal sector in Kenya has presented a new challenge for government in the decade of the 1990s. Issues related to the informal sector comprise part of the overall policy and development debate. It is believed in some quarters that the sector could be an alternative focus of development, a view that seems to be supported by international agencies.

1.2 Choice of the Informal Sector for Research

Micro-enterprise activities are expanding rather than withering away. When the formal sector contracts, people are pushed into the informal sector activities for lack of any alternative way of earning a living; when the formal sector expands, it creates direct and indirect demand for goods and services produced by the informal sector and thereby draws more individuals into the sector's activities.

There are many reasons for paying attention to the sector. These arise from the need to increase production, employment, incomes and to develop technologies.

The failure of the industrialisation process to absorb into productive employment large numbers of the unskilled and semi-skilled has resulted in under-employment and unemployment for a growing proportion of the urban labour force. With this disappointing performance of the formal sector in generating adequate employment,

the sector has in most cases become the second best alternative for employment of both rural migrants and the existing urban poor. The sector has expanded so rapidly that it is now the source of livelihood for between one-third and three-quarters of the urban economically active population in the developing countries. Current trend in urbanisation and population growth suggests that the sector may be expected to provide most of the employment of urban households by the year 2000.

Micro-enterprises that provide the poor with paid employment are a major source of on-the-job training in manufacturing and craft skills *not otherwise available to them*.

Apprenticeship is the traditional mode of skill transmission and *an increasing* proportion of those who establish themselves in the sector receive their training as apprentices in it. With about 50 per cent of the population composed of unskilled young people, the sector may serve as a training ground for the majority of them.

The way the economy has performed in the past ten years does not suggest any radical change towards patterns of production based on high technology in the future. It rather suggests a continued attachment to informal sector methods of production for the masses. This being the case, a closer attention to the development of technology in the sector is necessary. Technology is a crucial variable since it determines forms and degrees of labour force utilisation as well as levels of production and investment. Such ongoing technology transfers as exists in Kenya are largely capital-intensive and have contributed to widening the productivity gap between mechanised enterprises and manual ones. The technology concerns of micro-entrepreneurs have been largely

neglected. The building of the technological capability of the sector should be looked at as part of indigenous technology development.

The existence of so many micro-entrepreneurs brings intense competition such that average income becomes a variable that is strongly dependent on employment levels. Further expansion of the sector may bring the income per person down to the opportunity cost of labour which is close to subsistence level. The growth process may also bring about a fall in returns on capital. This will affect levels of investment in technology which will have a bearing on the future productivity and employment potential of the sector. To maintain or increase the income levels will require an expansion of the micro-producers' market beyond the low-income population. Product quality will be crucial in determining the nature and size of this market.

The sector has been equated with the poor and it is where many poor people are to be found. By harnessing its potential for generating incomes, not only is efficient growth promoted but poverty is reduced.

Informal sector activities can be divided into trade and production activities. Trade-based micro-enterprises, and not micro-producers, absorb by far the greater part of available credit. Despite this undue attention to trade, micro-manufacturing could lead to greater employment, incomes and contribution to the technological base of the country. For these reasons, the focus of this research was on the production activities of the sector.

1.3 Focus on Metalworking Activities

Some development theoreticians regard technical progress as the most important of all determinants of sustained economic growth. This theory makes the capital goods industries vital as initiators of the main technological changes, and the externalities they engender for the entire economy more important than any others.

Metalworking activities in the informal sector provide great potential for linkages within and without the sector since they involve production of both capital and consumer goods. They also provide a base for learning a variety of skills which are useable throughout the economy and thus provide the best springboard for technology development in the sector. It is for these reasons that metalworking activities were chosen as the focus of this research.

1.4 The Case for Studying Quality

There have been a number of allegations of low quality of informal sector products. To date no substantial study of actual quality levels in the sector's production has been made, nor have the determinants of its quality been identified: therefore the need for this research.

There is however a debate. Some observers have alleged that poor product quality is a serious defect on the part of the micro-enterprises: a defect that is seen to hinder the

growth of the informal sector. Others have judged the quality of its products as being appropriate to specific market requirements (“quality for the poor”).

A focus on quality can be used as a vehicle for changing basic attitudes within informal manufacturing. A manufacturing culture that does not pay attention to increasing the value of produce, needs to be changed in order to enhance the competitiveness of production. The values underlying actions for change should not be external and abstract, but should be built up through the daily practice of improvement, problem solving and learning.

1.5 Objectives of Research

The objectives of the research were threefold. One was to find out whether the quality of the informal sector products was poor. Secondly, to find out the factors that contribute to this level of quality. Lastly, to evaluate some of the ways of improving the quality of these products.

1.6 Chronology of the Thesis

The thesis starts with three chapters leading up to chapter four where the main propositions are developed. Chapter One is this introduction. Chapter Two reviews the literature on the informal sector. It examines issues of technology, training and

employment as well as the constraints that micro-enterprises face. It also documents the interventions that have been undertaken to improve the sector as well as the weakness of the literature on technology and interventions to improve quality in the sector. Chapter Three explores the concept of quality and examines the applicability of the approaches used in large enterprises to the informal sector.

Chapter Fives to Seven describe the testing of propositions, the analysis of survey data and the conclusions. In Chapter Five the research methodology is developed and in Chapter Six the results of the field surveys are discussed. Chapter Seven gives the summary of the findings, the implications and areas of further research.

CHAPTER TWO

INFORMAL SECTOR : A REVIEW OF THE LITERATURE

2.1 The Emergence of the Informal Sector

The historical circumstances that shaped our countries have to be understood so that we can shape our future. This history will enable us to know the nature and extent of our imbalances and the conflicts that have characterised the evolution of our society.

In contrast to West Africa which had no white settler community, in Kenya - and elsewhere in Eastern and Southern Africa - Africans were excluded by law until the late 1950s from engaging in cash crop farming. This denied the Africans not only economic benefits, but social ones as well. They were denied the accumulation of attitudes and market skills that goes hand in hand with progression from subsistence to commercialised agriculture, to retail and wholesale trade and thence to manufacturing. In short, the requisite manufacturing traditions were comparatively new in Kenya by the time she attained her independence.

Besides restriction in cash crop farming, the traditional production system of making pottery, blacksmithing, basketry, leather treatment etc. was broken up. First, the master craftsmen were removed from their occupation to go to work in European farms in order to pay taxes and hence technology development was hampered.

Secondly, the traditional apprenticeship system was broken up as it could not be practised under those prevailing circumstances. In both cases, the African lost tradition technology, skill and learning base which could have ensured the continuity and hence development of these technologies into manufacturing activities.

Further, the settler community in Kenya had evolved a relatively large manufacturing sector by mid-1950s. This trend was strengthened by the redeployment of the Asian community toward manufacturing. Thus there was a large supply of locally produced goods already in the market to contest, or in some cases to pre-empt the widespread emergence of artisan production. Thus in Kenya, artisan production did not enjoy the same period of infant industry protection that prevailed in West Africa (Kilby, 1987).

In addition, education of Africans prior to Independence was restricted to a few missionary schools and was used to make the young Kenyans faithful and obedient subjects of the colonial administration and to ensure that the settlers and the various public services of the colony could meet their requirements for clerical personnel. This approach to education, meant that at independence, the young nation lacked trained and skilled personnel at all levels. It was for this reason that efforts were directed at developing relevant skills in all fields to meet the challenges of the newly independent nation. Enrolment in schools went up rapidly at all levels. However, the rate at which “formal” job opportunities were being made available lagged behind output from the education and training institutions. This meant that job opportunities had to be created outside the formal sector. In addition, the structure of the economy was such that most employment was being created in the relatively large towns. This led to the migration of persons from the countryside to the urban areas. This urbanisation process resulted

in a decrease in the demand for products made by the rural artisans. Many producers in the rural areas were forced to move their production structures to towns in order to take advantage of the increased market generated there. This led to the emergence of the urban informal sector.

Labour in Kenya, like the rest of Africa, is not a fully fledged proletariat in the sense of being entirely divorced from ownership of the means of production and relying exclusively on wage earnings for survival. Rather, the workers are quasi-proletarians with strong ties to their rural origin including access to land as a productive asset. This requires the physical movement of one or more members of the household between their land holding and their place of work. It thus gives rise to a migratory pattern involving periodic oscillation by workers between town and their rural homes as a way of life, very often lasting the greater part of their life.

Whereas the oscillatory labour migratory system emerged in the colonial era as a result of state intervention in the interest of settler farming, the system is maintained today by other factors. Foremost among these is the increasing ratio between population and land in Kenya. Land subdivision has given rise to subeconomical units unable to support an average family at the current level of technology. The high man-land ratio is further aggravated by the concentration of land ownership. This has led to migration as a means of getting supplementary income to support families. However, formal sector urban employment is not forthcoming. The alternative has been to create income generating activities that require little capital and are easy to enter.

The genesis of the informal sector in Kenya is also linked to the development process of a peripheral region which has since independence, incorporated many imported

technologies which do not properly take account of local factor endowments. On the contrary, they reflect the relative factor scarcities of developed countries and are only suited for producing foreign goods whose demand was transferred through imitative consumption. The incorporation of these technologies took place in a different structural setting from the developed countries from which they originated. Capital in countries like Kenya was scarce and more concentrated, while labour was not only abundant but growing at a fast rate. The result was that consumption became highly concentrated in those groups with higher incomes due to their privileged access to the meagre capital resources available. This minority closely followed the consumption patterns that originated from the developed countries. On the production side, this meant factories reproduced goods made in developed countries instead of substituting them with local variants of the same. The governmental policies adopted included inherent market protection, cheap capital and import quotas, all of which led to inefficiency and hence high prices without a corresponding rise in quality. In addition, the employment opportunities that resulted were insufficient to absorb the rapidly increasing labour force. To the rural and urban poor, there had to be another source of goods and services at prices that were within their means. A new, so-called “informal” manufacturing sector arose whose orientation was “quality for the poor”. In recent years, contrary to expectations, a number of people have voluntarily moved from formal employment to self-employment in the informal sector because they have found better pay and prospects in the latter.

The early history of the informal sector has influenced its present structure and orientation in many ways. First, it was based on production of goods for the poor. However, these goods were primarily substitutes for those produced in the formal

sector and generally unrelated to agriculture. Secondly, being a sector for the production of substitute goods, it was a user of “substitute” technology that could only lead to quality that was lower than that of goods manufactured by the formal sector. Finally, being a sector where poor people were producing for other poor people, its capital base was poor and accumulation of capital was hampered by the low profits received. This in turn is reflected in its current low level of technology.

2.2 *Review of Studies on Informal Sector*

Research into the informal sector has flourished in all three continents of the developing world. Some of the surveys have dealt with the sector as a labour phenomenon (Tokman, 1976; Demol and Nihan, 1982; House, 1984). They have characterised it as a sector where a good share of the poorer urban working population of the developing countries is employed but which denies them access to social security and other benefits. Other studies have dealt with the sector as a collection of micro-enterprises whose dynamism can be enhanced by judicious injections of funding and technical assistance (Lubell and Zarour, 1990; Sethuraman, 1985). A further group of studies has focused on the characteristics and definitions of “informal sector”, modes of training in the sector, on its relationship with other sectors, and on the constraints to its growth (Portes et al, 1986; Fluitman, 1989; Schmitz, 1982; Altaf, 1983). Basically the objective of most of these studies has been to enhance our understanding of the sector, to assist the design of development projects, and the drafting of policy on employment problem. However, these studies have not focused

on the technology used in the sector. In addition, the relationship between unemployment, technology and market expansion in the sector has not been looked at.

In carrying out these studies, two main approaches have been adopted, namely the direct sectoral approach and the indirect approach (Lubell, 1991). The direct approach has been most common and has been based on census and surveys undertaken in major urban centres which have made a valuable contribution to the understanding of the macro and micro characteristics of the sector and the constraints inherent in it. The indirect approach has focused on macroeconomic data.

One consequence of these studies has been the production of very heterogeneous statistical data. Most disagreements on the informal sector originate in the large number of methodological viewpoints. The lack of standardisation in conceptual and methodological terms has accentuated the disparity of the information available.

Another consequence of these studies has been the way the sector is perceived. From being despised by governments for its backwardness and ignored by social scientists because of lack of interest, it has now become a sector that supposedly can alleviate the unemployment problem.

In the context of the economic and financial crisis of the 1980s and 1990s and the widespread politics of adjustment, deregulation and liberalisation, some believe the sector holds out a miracle cure. The international organisations have shifted their focus somewhat from poverty and employment to the emergence of micro-enterprises and the complementary role these can play relative to the public sector and big industry. Against a background of financial constraint, of major projects that have become white

elephants and of the inefficiencies of large organisation, some see the sector as a panacea and as an alternative development model, demonstrating that the market can succeed where government fails and that small is indeed beautiful.

2.2.1 The Importance of the Informal Sector

The role of the sector in meeting human needs depends largely on the local situation and is the subject of controversy. For some, this sector produces goods and services primarily for the low income strata of the population and thus plays a major role in the economic and social development of a country. For others, it holds a share of the market which, for this reason, is lost to the formal sector, thus hindering large-scale production and lowering the unit price.

The sector plays a leading role in providing *employment to the many people who fail to get jobs in the formal sector*. The ILO study by Joshi (1973) reported that in Abidjan, 31 per cent of the working population in 1970 were engaged in the sector. The 1977 Marga Institute study in Colombo estimated the number employed in the sector to be 20 per cent of the city's labour force. Tokman (1978) estimated that 34 per cent of the urban labour force in Latin America are engaged in the informal activities. In addition, the sector caters for the rural migrants to the cities thus reducing prolonged unemployment which could lead to alienation and a sense of worthlessness.

The sector plays a significant economic role in African countries. In most of these countries the production from it probably constitutes at least 20 per cent of urban

output (ILO, 1986). In Nouakchott, the sector produced an average value assessed equivalent to 8 per cent of the corresponding activity in the formal sector. Estimates for Lagos indicated that the total value added in the sector in the city in 1978 was as high as US\$ 650 million.

The number of individuals receiving the limited technical training available in the formal sector is small. Hence most of the urban skilled labour force is trained in the informal sector. Aryee (1981) observed that in Kumasi, over 90 per cent of the enterprise heads had received their technical training from the sector. Fowler (1981) found that of the sample of his study in Freetown, 54 per cent acquired their skills as apprentices before establishing their businesses. The 1980 ILO survey of the sector in Banjul showed that 86 per cent of entrepreneurs had been trained as apprentices in it.

In the developing countries, the “formal” innovation system, as institutionalised in research laboratory is very small and contributes proportionately much less to innovation than in industrialised countries. However, apart from this “formal” innovation system, there is a large “informal” innovation system represented by thousands of small workshops, and individual entrepreneurs. This innovation system plays a vital role in the economic system. King (1975) concluded that there is a definite innovative strain in much of the production in the sector. He argued that any single item such as the Kenyan wick lamp has had several variations since it was wholly taken over from the Indian artisan. He further singled out the inventiveness and skills of blacksmiths in the sector as of a higher order. Their ability to design and make some of the machines and tools they use place them in a category of their own.

The technology of the informal sector is more sophisticated than traditional technology inherited from the past, but less capital-intensive and generally simpler than technology used in the formal sector. It plays an immensely important role in the survival of thousands of micro-enterprises and helps provide their customers with products and services which otherwise would not be available. Jéquier (1976) and Massaquoi (1992) concluded that apart from its economic importance, the technology of informal sector has a psychological and a cultural role to play. It represents indigenous technology creation, which testifies to the inventiveness of the local artisans. Its promotion can give the micro-entrepreneurs a greater respect for their own creations and show that they are also capable of initiating and mastering the process of technological innovation.

Despite the evidence as to the developmental role of the small enterprises, there is a contrary perspective that argues that investment in small enterprises could well be a misuse of resources. Research by Little (1987) suggested that small-scale enterprises make little real contribution to growth, and instead merely generate unwanted surplus capacity which keeps prices uneconomically low. Some policy-makers still see small-scale enterprises, with their low level activities and high failure rate as an obstacle to modernisation, because they waste resources and are a threat to economic rationalisation.

Little (1987) pointed to three interrelated pieces of evidence which challenge the view that the sector is beneficial to development. First, small-scale enterprises account for a relatively small percentage of manufacturing output in countries, such as South Korea, which have high growth rates and clearly defined industrialisation policies. Secondly,

his evidence suggested small-scale enterprises are less efficient users of capital and labour. Third, it is questionable whether small-scale enterprises can actually create worthwhile cash employment, therefore reducing poverty and inequality, because such enterprises are rarely able to increase output sufficiently to absorb new labour.

Despite Little's scepticism, which was based on evidence from only a limited sample of ventures in two countries, I am drawn to accept the important role that informal sector plays given the overwhelming evidence of its contributions.

2.2.2 Definition of Informal Sector

Since it was first devised, the concept of the informal sector has frequently been associated with poverty, underemployment and unemployment. This confusion is regrettable for, whilst these phenomena may overlap, they do so only in part. There is some empirical evidence that indicates that poverty is not always, or even often, an essential aspect of what is now by general agreement is known as the informal sector. The ambiguity originated with the concept itself and in the successive and sometimes contradictory definitions given to the term. Thus " Informal Sector" needs clear definition so that this research has clear boundaries.

After many years of controversy concerning the nature of informality, the frontier between formality and informality, and the homogeneity or heterogeneity of the informal sector, two characteristics have emerged as operational criteria for identifying informal sector enterprises. These are (i) micro-scale and (ii) the extent to which an

enterprise avoids official regulation and taxes. Within those criteria, exact definitions vary.

Hoselitz (1968) postulated that there are two ways of defining “small” industries. One of these is to find some unobjectionable quantitative measure, such as employment, employment with power or capital equipment according to some convenient valuation. The second is to attempt a functional definition in which small industries are distinguished from the large on the basis of suspected or proven characteristics. The functional approach lists functions of small industries with the intention of emphasising how they might differ from large undertakings. The problem with the first approach has been to find an unobjectionable quantitative measure at an agreeable valuation.

Hoselitz (1968) quoted a definition of household industry given by Teruhiko Iwatake as having less than ten employees and with the following attributes: pre-modern labour management relationship; inferior labour conditions; old-fashioned equipment and techniques; subordination in some measure to big enterprise; pre-modern business management; inseparability of household and business; and high dependence on family labour. Despite the fact that the term informal sector had not come into use, the definition captures the essential characteristics of the sector.

Since the ILO Employment Mission to Kenya introduced the concept of informal sector into international usage in 1972, a number of definitions have appeared in the literature, the alternatives depending in part on the policy concerns of the various authors. The ILO report defined economic informality as a “way of doing things, characterised by: ease of entry; reliance on indigenous resources; family ownership of resources; small-scale of operation; labour-intensive and adapted technology; skill

acquired outside the formal school system; unregulated and competitive markets” (1972).

By focusing on the characteristics of the enterprise, the Kenyan report reduced the area of uncertainty; it is the enterprise and not the individuals in the urban economy that are classified into formal and informal sectors. Iwatake’s definition, had the enterprise as its point of reference too. However, subsequent research (McCormick, 1993) has shown that in many instances entry is not especially easy, and markets are unregulated only because the enterprises either are ignorant of existing government regulations or consciously evade government attempts to impose them. In addition, the ILO report and Iwatake lacked the conceptual framework to define the sector. They characterised the informal by contrasting it to formal activities and particularly, by the lack of access to productive resources and markets.

Sethuraman (1981) used an establishment or production unit definition of informality. He pointed out that the multiplicity of criteria in the definition of informality proposed by the ILO Kenya Report cause ambiguity because each criterion could be used to create a universe of its own. He therefore proposed a general definition of informal sector as small-scale units engaged in production and distribution of goods and services whose primary objective was to generate employment for the participants rather than to maximise profits. His proposed keys for identifying informal sector activity were: employment of no more than ten persons; non-application of legal and administrative regulations; employment of family members; working on an irregular basis; location in a temporary structure or in the open; non-utilisation of electric power; not dependent on formal credit institutions; and that most of its workers had

less than six years of schooling. Sethuraman's definition does not differ much from that of ILO. What he has done is to break ILO's criteria into simpler and more specific ones.

The ILO/PREALC studies on informal sector in Latin America and the Caribbean used two alternative definitions of informal sector activity. The first, based on size of labour force, included persons working in enterprises of less than five persons. The other definition used an income criterion: persons earning a certain minimum, usually the legal minimum wages, on the assumption that low-productivity activities typical of informal sector also generate low incomes (Souza and Tokman, 1976).

A number of recent studies, mostly concerned with Latin America but extending to other developing countries as well, have identified informality with illegality: illegal in the sense that informal activities do not comply with regulations pertaining to fiscal, employment, health, and other matters because of flaws in the tax system and in other laws and regulations (de Soto, 1989). It has been pointed out, however, that although a considerable number of legal provisions may apply to the sector, the actual degree of regulation may be low if the regulations are not strictly applied so that what is theoretically illegal may well constitute everyday practice.

Bromley (1979) focused on the petty producer component of the sector but with a radical bias. He considered the situation of the petty producers as part of the working poor to be the result of a capitalist plot to perpetuate a reserve army of labour and to lower the cost of wage-goods of workers in the formal sector in order to reduce wages in the formal sector. The fact that capital accumulation in the informal sector is almost

non-existent and that these micro-enterprises rarely grow out of the sector lends credibility to his argument.

In this thesis, the informal sector will be taken to mean the marginal or peripheral, productive activities which do not necessarily comply with regulations. These activities are income generating where the number of people working in the enterprise is less than ten. Further, the enterprise is located or housed in a temporary structure or in the open .

This definition concurs with other definitions used by researchers in Africa where the enterprise, establishment or activity is taken as the unit of observation.

This definition however differs in approach to Latin American studies where poverty is the subject of study and the family, household or the individual is taken as the unit of observation. It clearly distinguishes research on poverty and the activities of the poor from research on the informal sector.

While incorporating most of the criteria that were proposed by Sethuraman, it omits one of them. The use of electric power should not disqualify the enterprise from being in the informal sector. A welder who taps electricity from somebody's house or from the main grid and works in the open can still be classified as an informal sector producer.

This definition differs from that of ILO in that it recognises that skills used in the informal sector could have been acquired from the formal sector. However, it incorporates ILO's basic elements of marginality and productive activity.

2.2.3 Characteristics of Informal Sector

The informal sector has been defined according to the characteristics of the enterprises and according to the characteristics of labour. More specifically, the sector can be defined as the sum total of income-generating activities outside modern contractual relationships of production. From this perspective informality is a synonym for a complex of economic relations that encompass direct subsistence production, petty commodity production and trade by self-employed individuals, and even the subcontracting of small unregulated enterprises by the formal sector (Portes, 1983). The internal structural diversity of these activities frequently obscures their fundamental common characteristic, namely that they all operate on the basis of labour which is unprotected and hence less costly than that covered by contractual arrangements.

ILO (1972) argued that informal sector was characterised by ease of entry. This increases the competition within the sector because apprentices and other very low paid employees of micro-enterprises develop informal activities of their own. The result is low incomes which could be no more than the return the entrepreneur receives for his own work and very little for his managerial activity or activities of his family.

The sector is also characterised by very variable labour incomes and returns on capital. Income obtained is in many cases an indivisible package which is characteristic of small units where the entrepreneur provides its management and contributes both the labour of his family and some capital. Capital is somehow untransferable since it serves a dual purpose of being a household and a productive asset. Labour is not easily available full time, since families share their work in the firm with occupations outside the labour

market. In these cases, the relevant income will be the total received by the family and mobility of both labour and capital will be restricted.

The growth of enterprises in the sector is more or less linked to increase in their provision of goods and services to the low-income groups, with much emphasis on improvisation and repair. The enterprises have grown in an involuntary rather than evolutionary manner and this has been one of the major reasons why product and service diversification in this sector has been slow to come by.

The sector has peculiar modes of behaviour and formalities. De Soto (1989) has shown that relations between firms in the sector are sometimes characterised by a striking degree of co-operation. They share inputs when these are in scarce supply; when one firm has a large contract and its neighbour does not, it shares the contract with the other firm by subcontracting or by hiring in its owner as a temporary worker. There is work-sharing not only within firms, but between firms when the demand for labour is reduced.

Most of the entrepreneurs avoid risk and prefer situations with low probability of loss. Small-scale manufacturers usually respond to the risks of their environment by keeping their businesses small and flexible (McCormick, 1989). A risky environment contributes to the proliferation of firms without capital accumulation. This is because most entrepreneurs are unlikely to invest a lot of capital in a venture and then lose it in a fire or government “cleaning” activities. The entrepreneur would rather invest small amounts of capital in many activities so that the loss of one will leave the others. The net effect is overcompetition and the production of only simple products and hence the appearance that micro-enterprises lack design creativity and innovativeness.

Given the amount of information in this area, it would not be worthwhile to characterise the sector further.

2.2.4 The Informal Sector and the Labour Market

The macroeconomic measurement of the level of informal employment is still imprecise since it involves use of statistical data designed for other purposes. Nevertheless, the available information seems to suggest that the share of informal employment in total urban employment is relatively large, in the region of 40 per cent. In urban areas in Cote d'Ivoire, comparison of the data from the census of employees in the modern private and semi-public sector in 1984 and from the informal sector survey in the same year shows that the sector accounts for 43 per cent of the labour force (Lachaud, 1990). On the basis of data collected from surveys and macroeconomic research, the share of urban informal employment in Togo in 1984 was estimated to be 49 per cent (Lachaud, 1990). The World Bank reported that 43 per cent of Kenya's labour force, outside agriculture was engaged in the sector's activities in 1985. Lubell (1991) estimated that the sector's activities absorb between 40 and 60 per cent of urban labour force of many developing countries.

Examination of the structure of employment reveals that forms of employment vary according to the specific sector. Unlike in the formal sector where employees are classified in socio-economic categories depending on the earnings, those who work in the informal sector are classified into wage-earners and family members. Family members are further divided into owners and their family, while wage-earners are

further subdivided into employees and apprentices. In Africa, one-third of the sector's work force is the self-employed owners and one-fifth are apprentices. Employees make up only 5-10 per cent of the sector's work force (ILO, 1984).

Informal activities differ widely in the nature of goods and services offered, in the quantity and quality of human capital required, and in the mode of operation. Some activities do centre upon small production units requiring significant technical capital, technology and vocational training. But quite a number of activities diverge from this pattern and operate with a very low level of technical and human resources. Employees in the sector are more likely to be engaged in the larger production units. Family labour dominates in the smaller enterprises. The greater the size of the micro-enterprise, the higher the proportion employing at least one employee.

Increases in the size of enterprises are also associated with increases in the number of apprentices and accompanied by substitution of genuine wage work force for quasi-wage family workers. It has also been observed that the proportion of enterprises employing people is markedly higher when the micro-entrepreneur has acquired technical skills in the modern sector. This could be because a micro-entrepreneur with modern sector skills is likely to operate at a higher technological level and the range of products may be wider or there is higher level of specialisation thus requiring more labour. Livingstone (1991) concluded that the sector expands not through the growth of individual enterprises but through an increase in the number of establishments, each employing only one or two persons. This is supported by another study (Kenya, 1990) which found that 95 per cent of micro-enterprises emerged less than 10 years ago and that those employing no workers were 65 per cent while 19 per cent of them employed

1-3 workers. This emphasised that growth is horizontal rather than vertical which raises doubts as to the sector's ability to generate the expected number of employment opportunities. This means that for the sector to absorb greater numbers of people, interventions would have to be directed toward verticalisation of the enterprises.

2.2.5 Heterogeneity within the Informal Sector

The prevailing image of two decades ago was that the informal sector was homogeneous since all individuals belonging to it occupy a similar subordinate position and receive very low wages. Contrary to this image, it is now clear that there is a considerable degree of heterogeneity within the sector. Portes (1986) reported that studies in Chile and Brazil revealed large income variation among the informally employed. In addition, these studies show that many informal workers received money incomes which were significantly higher than the minimum wage and often superior to those of the formal sector. Tokman (1990) approached the issue from the viewpoint of organisational form and established a difference between units using several people and those with activities performed by only one person. He further concluded that although capital was scarce, it was not evenly distributed among informal activities and that income was in some cases restricted to labour remuneration while in others, it included earnings on capital.

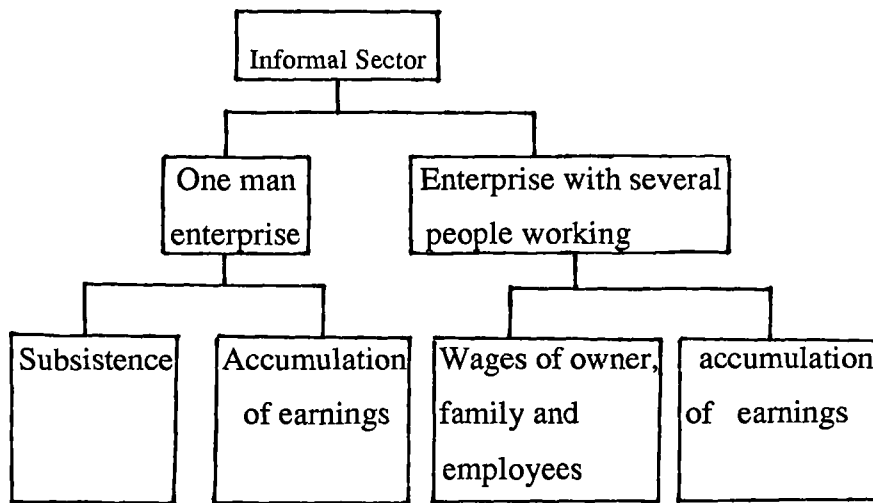


Fig. 1 Classification of informal sector units and distribution of earnings.

A simple observation of the urban conditions in Africa suggests that the urban informal sector consists of a set of micro-scale trades which are insecure and vary in size according to opportunity and local inventiveness. They cannot rely on a stable and localised customer base. They provide primarily a means of survival but can also enable traders to accumulate capital. The heart of informal sector manufacturing consists of craft activities. At the top of the hierarchy are the “capital-intensive” production activities which not only provide the owner with a means of survival but also provide for employees and apprentices. Earnings on capital are also realised in some units.

Lomnitz (1978) argued that the income differences were due to the fact that the concept of informality conceals two distinct class positions. He assumed that most of the individuals who participate in these activities do so as workers, who possess only their own labour power which they sell for a minimum remuneration. He distinguished this class from the class of employers who own their means of production and hire

labour or use family labour. The micro-entrepreneurs represents a middleman class which organises the mass of unprotected workers to produce goods and services, either for the market directly or under contract for formal firms. Lomnitz's conclusions do not agree with recent African data showing the low proportion of personnel in the sector who are employees. This could reflect a major difference between the informal sectors of Latin America, Asia and Africa. This difference may reflect the different levels of development of the sector in these continents. Lomnitz's classification is useful in the study of social and economic relations in the sector. However, for this study his classification is not useful.

2.2.6 Intersectoral Relationships

Different views prevail as to the nature of the inter-relationships between the formal and the informal sectors. Those who have explored this question have advanced in two different directions, mostly linked to whether they believe the informal sector benefits from the formal or is exploited by it. Some like Sethuraman (1981), Weeks (1975), and others interpreted the linkages as benign. Others like Bromley and Gerry (1979), Portes and Walton (1981) and Moser (1984) viewed it as an exploitative relationship where the formal sector gains at the cost of the informal sector.

Sethuraman (1981) based on his studies on Asia concluded that both sectors gain from their association. Subcontracting is not however prevalent in Africa.

In their earlier work, Souza and Tokman (1976) postulated that the size of the sector would diminish with general economic growth, although it would not totally disappear

given the preferences of both consumers and workers for that type of organisation. Tokman (1978) accepted that subordination is a general characteristic of underdevelopment and the problem is therefore to determine how strong the subordination of sector is and whether there is room left for evolutionary growth. He distinguished three main subgroups of informal activities and argues that each group's relationship with the rest of the economy will determine its share of total income and its evolution. The first subgroup is composed of activities operating in areas where competition is stiff and where cost differentials are significant. For these activities, no expansion can be envisaged since their dependency on formal ones means they cannot determine prices or production. The other two segments operate in less competitive markets and there could be room for output expansion because market concentration has not been achieved and this may ensure more competition.

The proponents of the exploitation view believe that it is found in the labour or in the product market. In the former, labour in the informal sector depresses wages paid by the formal sector, whereas in the latter, labour in the informal sector produces low-cost goods which are used either as inputs of the formal or as wage good by workers of the formal sector. In both cases, the result is an increase in the level of profits of the formal sector. This relationship between the two sectors is dealt with more deeply as a constraint later in the chapter.

Subcontracting is of particular importance in the debate on whether or not the informal sector is exploited by the formal sector. Whereas the widespread use of industrial subcontracting in urban areas of South East Asia means that small production units and large firms are closely connected there, this form of integration is virtually non-existent

in Africa. There are several reasons for this, the first being the asymmetry of trade between the two sectors. The informal sector generates a strong demand for intermediate goods but only a weak supply of them. Therefore the formal sector has to provide most of the intermediate inputs and much of the machinery. However, the formal sector generates little of the direct demand for informal sector goods. The second reason for weak linkages is bias within the large-scale manufacturing sector towards the assembly of intermediate inputs imported from overseas. In essence the formal sector has little activity that would entail receipt of intermediate inputs from the host economy. Harriss (1990) concluded that there are usually strong backward linkages for raw materials and equipment from the informal sector to the formal sector though frequently through trader intermediaries. Forward linkages are weak with 10 per cent or fewer of petty producers selling to the formal sector through subcontracting.

With the evidence available, it seems that the informal sector is highly dependent on the formal sector for its materials, equipment but not for its sales. This contradicts the recent study by Livingstone (1991) who concluded that in Kenya the sector has been capable of growing independently of the formal sector. The nature and level of this dependency has not been studied very much and it would be worthwhile to look into it further.

2.2.7 Technology and Innovation

The contribution of micro-enterprises to technological capacity building has been largely neglected. Until studies by people like Khundker (1989), Amin (1989) and Sethuraman (1989), it was generally accepted that technological capability in the informal sector was very restricted. Before the above studies were undertaken, it was thought that micro-enterprises do not really require an internal capacity to innovate, instead all they need is access to improved technology which may be developed elsewhere. However, it has now been recognised that some innovative capability exists and is required.

Micro-enterprises are faced with an increasing technological gap which inhibits their growth. Comparisons of alternative production techniques show great differences in initial investment per unit of labour. However, the jump needed to be made from the current level of technology by micro-enterprises, in say Africa, to modern techniques is often great and the latter may not be the most economically efficient for developing countries (Bhalla, 1975). Besides, while large producers often have a selection of technology packages to choose from small entrepreneurs rarely have a range of processes to meet their needs. Not only is the choice of technology more limited at micro-scale, but its local availability is also restricted (Jeans, 1991). Besides the limited availability of technology options, investment in technology in micro-enterprises is also affected by lack of capital to invest. Bhalla (1989) found that many metalworking artisans surveyed in Mali had attempted to make their own machines but failed because of lack of finance and lack of appropriate raw materials and equipment.

A number of authors have found that micro-entrepreneurs are innovative and are able to develop new technologies. Chuta and Liedholm (1985) examined the patterns of innovation in Sierra Leone and found that at least 48 per cent of entrepreneurs surveyed had introduced some kind of technical change such as, a new product, improvement of an existing product's quality, a new kind of machinery etc.. Product changes were much more prevalent than changes in equipment. Khundker (1989) concluded that micro-producers of Dhaka were not technologically stagnant. Many had introduced new products, improved the quality of existing products, constructed machines and produced their own spares. Sethuraman (1989) in his study of micro-enterprises in Bangalore found that micro-entrepreneurs had demonstrated significant innovative capability in changes in processing methods, development of new products or production of own tools.

Among the factors restricting the sector's ability to innovate are its heavy dependence on foreign sources of equipment and the low level of education and training of the micro-entrepreneur. Lack of technology improvements also stems from the limited market for the products of the micro-enterprises. A review by Bhalla (1989) indicated that relative autonomy from foreign technology and higher levels of education and training tended to encourage innovation in micro-enterprises. Prior experience in a formal sector enterprise appeared to be related to greater capacity for technological innovation (Lachaud, 1990).

Despite some recognition of the creative and innovative abilities of the micro-entrepreneurs, our knowledge about the technological capability of the sector remains very limited (Schmitz, 1982; Bhalla, 1989). Yet such a capability is necessary if micro-

enterprises are to expand their markets by reducing their costs of production or raising the quality of their products. It would therefore be useful to know the extent, and magnitude of the various components of the informal sector's technological capability.

2.2.8 Training in the Informal Sector

Technological capability has to do with the ability to perform well and therefore implies the existence of the skills necessary to apply knowledge. At the enterprise level, the skill in managing technical change depends, *inter alia*, on the level of training and experience of entrepreneurs. Skills are acquired through both learning-by-doing and learning-by-training. Micro-entrepreneurs tend generally to acquire skills on the job and through apprenticeship in formal or informal workshops (King, 1975).

Apprenticeship is particularly important as a means of skill acquisition in African micro-enterprises. In the case of metal working in Ghana, Hakam (1983) found that the number of apprentices in the sector was more than twice that of people who were employed there. About 40 per cent of these apprentices ended up as entrepreneurs setting up their own production units. Chuta and Liedholm (1985) concluded that apprenticeship system serves as the primary vehicle for providing technical training in Sierra Leone.

The success of any apprenticeship system depends on the quality of training imparted. This in turn, depends on two factors. The proficiency of the master will determine the kind of training he can impart and at what level. If the master is the product of a half-baked apprenticeship, then the training offered will lead to a low level of skills. The

training imparted will also depend on the time spent by the masters in training their charges. It is not unusual to find masters who use the apprenticeship system solely as a source of cheap labour to increase production sparing no time for training.

The underlying idea about learning-by-doing is that the experience of production yields information and stimuli that prompt the making of improvements. Such learning may be one input to the process of technical change, but on its own it is probably inadequate. The information emerging from the experience of production needs to be related to technical understanding of the underlying process, about possible changes which might be made, and about the likely effect of such changes and adaptations. The apprenticeship system does not usually impart this knowledge. This could be one of the factors that has restricted micro-entrepreneurs ability to innovate and hence has relegated the sector to low-level technology.

Despite some observation of how skills are acquired, the relative importance of informal training, work experience and formal education in the process of managing technical change has not been extensively studied. ILO studies in Mali, Rwanda and Equador suggest that in countries at very low level of development, informal and vocational training and work experience seem to be far more important than any formal education. At higher stages of development, a combination of some formal education, specific vocational training and work experience seem to be relevant for innovative capacity among micro-enterprises. On the basis of case studies from Brazil, Schmitz (1982) suggested that the most important source of skill and know-how was found in previous employment. The training and experience gained in this way varied with the job previously held, but it provided a sufficient basis to pick up the missing

technical aspects through a process of learning-by-doing which is an integral part of the micro-entrepreneur's struggle for survival or expansion. However, this may not be applicable to the African context where the level of development is lower than that of Latin America and hence the opportunities of employment are less.

Another aspect of training in the sector is the level of utilisation of skills acquired in the formal or informal sector. Gerry (1978) concluded that due to exploitation by large firms and discrimination by the government, more and more micro-entrepreneurs are forced to underutilise the skills available to them. Each generation of petty producers that undergoes this insidious marginalisation loses a portion of its accumulated skills. Due to lack of evidence I find it difficult to agree with Gerry but if his assertion is applied specifically to traditional blacksmiths I would be inclined to agree with him.

Though the mode of acquisition of skills in the informal sector has been extensively studied, very little work has been done on the sector's contribution toward broadening the country's technological base or on how the apprenticeship system can be enriched by infusing it with technical knowledge.

2.2.9 Constraints to Growth of the Informal Sector

The capacity of micro-enterprises to provide new earning opportunities have been one of the central concerns in the debate on employment problems in the developing countries. However, there are many barriers to the growth of this sector. In general, the growth constraints identified in the literature can be grouped into two categories:

those of an internal nature (entrepreneurship, management) and those of external nature (access to resources, hostile environment, exploitation by large enterprises).

(a) Internal Barriers

In the literature that emphasises internal constraints as the major growth barrier, the growth of micro-enterprises is seen to be held back by lack of entrepreneurial or managerial skills.

Lack of entrepreneurial ability acting as bottleneck to the growth of informal sector enterprises has been cited by many authors (Stepanek, 1960; Nihan et al, 1979; Kilby, 1969). Though entrepreneurship may be more crucial than either formal education or technical skill, assessing its importance, in say Kenya, is made more difficult by varying definitions of the concept (Harris, 1971; Kilby, 1971). A detailed analysis would probably have to distinguish between motivation, drive and adaptability. Detailed descriptions of most micro-entrepreneurs reveal great initiative, inventiveness, responsiveness and readiness to jump at opportunities which testifies to their adaptability and survival (Hart, 1973; King, 1974; Peattie, 1978). Another factor that makes assessment of entrepreneurship in Africa difficult is the lack of studies focusing specifically on this in African enterprises.

Despite the innovativeness of the micro-entrepreneurs, the prolonged underdevelopment of indigenous entrepreneurship and the entrenchment of foreign capital must be seen as manifestations of the same historical process. The expansion of private foreign capital and development of indigenous entrepreneurship may mutually reinforce each other in the earliest stages but tend to become competitive and

antagonistic at later stages. The more expansive private foreign capital becomes in such later stages, the less room there is for indigenous entrepreneurship to develop. This partly explains why indigenous firms do not grow into large enterprises.

In many cases there is very little advanced planning and apparent organisation in micro-enterprises. This is because of the nature of the market in which they operate and shortages of resources. Their survival and growth often require great flexibility and ability to improvise, which might give an observer an impression of lack of organisational skills and practice. In addition, lack of paperwork and formal organisation may lead one to think of a *disorganised set-up* (Anderson, 1982). However, the scale of operations may not call for more formal organisation though it is recognised that with increasing use of outside wage labour, there comes a threshold where there is need to formalise organisational procedures and the mode of management.

In family set-ups, it may appear that the family is intruding in business. Lipton (1980) suggested that the involvement of a family in business can be a source of strength because its chances of survival and accumulation will be better due to its own internal economics. These advantages arise from the ability of the family to adapt to changed production conditions by adjusting not only its production behaviour, but also its consumption and reproduction decisions. Lipton's argument is an important contribution to the debate in that it emphasises that factors internal to the micro-enterprise can be a source of strength rather than weakness. However, he appeared to ignore that the involvement of a family in business can be a source of conflict. For

example, with increased schooling, the children may show less interest in the business since they may associate it with backwardness.

In manufacturing, the existence of organisational skills is quite crucial for growth . The entrepreneur is involved in both the management and production functions. This dual role may be too heavy for one who has not had any training in managerial skills especially when the enterprise grows.

Early evidence suggested that Africans lack skills in the routinised managerial functions that allow firms to expand into more complex activities (Marris and Somerset, 1971; Kilby, 1988). It is often difficult to evaluate these criticisms because they implicitly or explicitly use a European measuring rod for African performance. Overcoming the management hurdle requires developing a management style appropriate to African cultures (Iliffe, 1983). Berry (1985) observed that the management style of the Nigerian motor mechanics she studied appeared inefficient by Western standards, but was, in fact appropriate to a situation in which owners need simultaneously to hold down the risk of costly errors and spend large parts of their own time on building good relations with their customers, competitors and suppliers.

The entrepreneurial and managerial factors in African enterprises have not been studied in depth. Research in this area would be worthwhile.

(b) External Constraints

External factors have been cited as the major contributor in blocking the growth of micro-enterprises. Besides a hostile environment, other factors include limited access to resources, and weak and saturated markets. King (1975) in his observations about the micro-manufacturers in Kenya concluded that there were severe structural problems restricting their development into own-account workers capable of the production of high quality goods. It was not principally the technical dimension that constituted the obstacle, but rather the lack of basic credit, infrastructure, security of tenure in the urban areas, and a technology policy that would support the very small scale entrepreneur.

A number of authors have argued that micro-enterprises are exploited by the formal sector through various mechanisms and this contributes to the accumulation of capital in the latter. King (1974) concluded that the informal sector, with its ingenuity, extreme hard work and massive competition, produces goods and offers services which have the effect of keeping the cost of living down, and thus allow large firms to continue to pay low wages to their workers. Leys (1975) also observed that the informal sector provided the formal sector with goods and services at very low prices, which made it possible the latter's high profits. According to Portes (1978) the fundamental point is that the sector subsidises part of the formal capitalist enterprises in peripheral capitalist countries, enabling them to reinforce comparatively low wages on their own labour. The basic needs of formal sector workers are partially met by goods and services produced using unpaid or more cheaply paid informal labour. Similarly arguments have been put forward with regard to the role of subsistence

agriculture and also urban domestic production for the cheapening of costs of reproduction of the industrial labour force. Tostensen (1990) reported that in Kenya, a substantial proportion of the reproduction cost of industrial labour is borne by the non-capitalist agriculture. This means that the industrial wages under capitalism are, in fact subsidised by agricultural production outside the capitalist sector altogether. She observes that the urban labour migrants are relieved of a considerable proportion of the household's reproduction costs by their families staying in the rural areas and to a large extent growing their own food and paying no house rents, thus being catered for outside the capitalist mode of production. This relief constitutes a transfer of resources from non-capitalist modes of production to the capitalist mode. Tostensen estimates that this subsidisation rate turns out to be 97.6 per cent which means that actual price paid for labour is only half its value. Other authors have stipulated a much more direct relationship of exploitation between the petty producer and the capitalist sector in the form of subcontracting (Bose, 1978; Scott, 1979). The existence of large houses controlling the market ensures effectively that the micro-producers will have to hand over their produce to the formal sector for marketing the goods they have themselves produced.

The net effect of this exploitative relationship is that both rural agriculture and urban informal sector are impoverished in several ways. First, rural agriculture can neither create enough demand for products from the informal sector nor accumulate any savings for investment in the sector. Secondly, the sector itself cannot accumulate the capital necessary for the sector to invest in technology and skills. This could explain why micro-enterprises do not grow into medium scale enterprises.

In Africa, one can discern a major marketing problem affecting the micro-enterprises, namely market stagnation due to the formal sector's control of product markets, raw materials and credit. Quijano (1974) referred to the small producers as the "marginal pole of the economy whose defining characteristic is the lack of stable access to basic resources of production". Bienefeld (1975) suggested that many small scale operators in East Africa were in a process of production and technological development but their ability to develop cumulatively over extended periods was limited by their dependence on large scale industry for inputs. He concluded that when the markets the informal sector served grew beyond a certain size, it did not become a stimulus to further development of the forces of production. *Instead it triggered a discontinuous shift to "international" technology which incorporated this market by virtue of its great market power, which is based on unlimited access to capital and on establishment of brand name products through heavy advertising.* The net result of this situation among petty producers is an appearance of virtual stagnation, though a more dynamic analysis would possibly reveal a process of growth and destruction. A good example of the formal sector incorporating an informal sector market is the production of basins and buckets in Kenya. The informal sector has been the major producer of metal basins and buckets for a long time. With the growth of population the demand for basins and buckets increased. However, the net result was a gradual shift in the production of basins from the informal sector to the formal sector.

Souza and Tokman (1976) state that the total market of the informal urban sector shows no clear signs of growing and it has to do with the role of small enterprises in a process of economic growth characterised by the concentration of markets. In highly concentrated oligopolistic markets, small enterprises cannot go on increasing the size

of their business indefinitely, and in the long-run, despite registering some small temporary gains, they tend to lose market share steadily to the formal sector. The informal sector's market grows as a result of rising incomes in that sector or in the economy as a whole, but in most cases its activities are competitive only because the size of the market in absolute terms does not yet warrant the establishment of large enterprises.

In Kenya, the soap industry was penetrated by multinational corporations. The reason for their success, however, lay not in greater efficiency (in terms of providing cheaper and better products to the consumer) but in creating a desire for their products through expensive advertising, fancy packaging and the differentiation of basically identical products. This has been followed by multinationals redefining basic needs into demands for their products. These translations often leave the consumer worse off, paying higher prices to satisfy their redefined needs. They also generate industrialisation inappropriate to Kenya's resource base and employment needs. Of course they deliberately establish patterns of demand that are very hard for micro-enterprises to meet directly. Kaplinsky (1979a) in a study on breakfast food in Kenya, emphasises that this sort of market control is not only exercised by foreign firms, but also by locally owned firms, albeit producing under licence from foreign suppliers.

Another aspect of the market constraint has to do with the micro-entrepreneurs limited access to the market. The micro-entrepreneur has to start business on a small scale, in a market he knows he can reach, which is part of a much larger market which more powerful competitors are ready to exploit. He cannot start himself on a larger scale because he has no access to capital, no commercial experience and no contacts. The

society he is familiar with is much smaller than the market in which he may have to sell, and he has no line of contact with this larger market, nor the resources he would need to profit by it. The network of advertisers, dealers, and middlemen who distribute products to large markets is alien to him. They are of other races, and he knows very little of how they work, or what he must offer to satisfy them. They are abrupt discontinuities between the micro-entrepreneur's social world, and the economic world in which he has to succeed. The micro-entrepreneur cannot protect his enterprise from influences and competition outside the range of his experience, nor expand his market to what is unfamiliar. A government, as his supposed intermediary to the wider world, in fact, becomes another barrier to his exploitation of it, perpetuating his isolation. The effect is the micro-entrepreneur cannot perceive the needs of the whole market which restricts his production to goods needed by the society he is familiar with, namely other marginalised people. Marris and Somerset (1971) have called attention to the above social barriers to African entrepreneurship. They refer to the social world of the African entrepreneur, the often decisive one of the non-African, the difference between the two and how this division limits the extent to which the African entrepreneur can operate his business successfully. Owen (1978) concluded that talent, experience, social linkages and daring are more critical to success than a specific cash outlay.

This distortion in the African market, has been exploited to the disadvantage of the African micro-entrepreneur. For example, in Kenya, the highly priced furniture business is controlled by a few houses. They serve as a link between the market and the informal sector. These houses subcontract to the informal sector but the sector cannot market directly because of the control exercised by them. The result has been the

development of a dependent and exploitative relationship with the furniture houses making huge profits.

The market problem has also been blamed on the entrepreneur's inadequate education. Altaf (1983) contends that the small entrepreneur, by virtue of his poor education, has a limitation imposed on him, an inability to perceive opportunities. Micro-entrepreneurs are not so widely travelled as those who manage medium and large enterprises, and consequently perceive less product differentiation and fewer consumer preferences. Even if they do perceive these opportunities they do not have the expertise in production to exploit them. Altaf concluded that whatever the quality of formal education achieved, it does develop an individual in many ways and to the entrepreneurs it may mean breaking from the shackles of the past and surpassing their father's achievements. I share Altaf's sentiment in that lack of exposure can and does limit the perception of many entrepreneurs and hence limit their market potential. It is also observable that those who leave the formal sector and set up shop in the informal sector address themselves to a larger market, due to their wider exposure and their utilisation of better production methods to meet consumer preferences.

Raw materials account for a major share of the operating costs of micro-enterprises which spend relatively small amounts on other factors of production. Any change in their costs to the owner, either financially or in terms of his time in obtaining them, can significantly affect income for better or worse. Difficulties in obtaining raw materials are said to arise in account of the micro-enterprises' bargaining difficulties, their lack of working capital and the environment they operate in (Mars, 1977). In Ghana, unavailability of raw materials was found to be the single most important constraint on

small-scale manufacturing firms (Steel, 1977). In Brazil, the problems of hammock producers were shown to be directly linked to the supply of raw materials, whose availability and price were manipulated by a big company (Schmitz, 1982). The prices and availability of these materials sometimes force micro-enterprises to use recycled materials to reduce costs and improve the ability to sell the resultant product. Even those using recycled materials risk shortages of inputs. If more makers of chemicals and oil producers were to switch from metal to plastic containers (like a number of them have done), a large segment of the informal metal working industry would find itself out of business for lack of materials.

Limited access to credit and its high cost are two major factors with which the micro-entrepreneur must contend. Traditional forms of credit require substantial collateral, well established accounting procedures and guarantees that most micro-enterprises cannot give (Harper, 1984). These obstacles partly explain why only a very *small* percentage of micro-enterprises avail themselves of formal credit. In addition, Liedholm et al (1990) have shown that in two-thirds of the developing countries, real interest rates in the formal sector are 10 per cent or less. In contrast, interest rates in the informal sector often exceed 100 per cent per annum.

An important characteristic of the informal sector is its relationship to the government. Economic activities formally and officially recognised by the government enjoy considerable advantages. Formal sector enterprises thereby obtain direct benefits of access to credit, foreign exchange concessions etc. that reduce the cost of capital in relation to labour. Indirectly, they benefit immeasurably from the restriction of competition through tariffs, quotas, trade licensing and product standards based on

Western countries' criteria. By contrast, enterprises within the informal sector operate largely outside government benefits. The sector is ignored and often harassed by authorities. For example, in order to promote agricultural development, the government of Zambia removed all import duty on agricultural equipment in the 1980s while continuing a 30 per cent tax on imports of steel. As a result of this, imported equipment became far cheaper than domestic products, the materials in Zambia sometimes costing as much as the imported finished item. The damage caused to the domestic implement manufacturing industry by this measure was enormous (Poston, 1990). The result of the government's perception and treatment of the informal sector, has been the raising of the level of uncertainty on the part of micro-entrepreneurs which impedes their daily production, their investment in technology and their future planning and investment. Thus, external constraints hinder the development of the informal sector and its growth is in effect controlled by forces outside the control of the entrepreneur.

2.3 Interventions

The constraints facing the micro-enterprises call for interventions aimed at improving the environment in which the informal sector operates as well as alleviating the bottlenecks that hinder its growth. The success or failure of these interventions greatly depends on the strategy adopted, the way used in giving the assistance and the assistance given.

2.3.1 Choice of Strategy

Providing support for micro-enterprises is widely endorsed. Differences, however, emerge when choosing what is to be achieved by supporting micro-enterprises and how actually to assist them. At the conceptual level, the answer to those two questions defines the intervention strategy. There are broadly two ways of assisting micro-enterprises, that is, by an indirect approach and by a direct one.

Indirect assistance programmes are aimed at creating a favourable environment for private enterprises. These programmes concentrate on macro-level variables such as prices, infrastructure, regulations, government policies, and the legal framework. This approach relies on people's creativity and initiative to take advantage of new opportunities and responding to incentives. The focus is on improving the business environment and the creation of viable institutions. The indirect approach cannot solve those problems at the micro-enterprise level which are not related to the unfavourable environment. However, because of the rather unpredictable way that indirect interventions filter through the economy their effect can at times produce opposite outcomes to those intended.

The direct approach to supporting micro-enterprises is founded on the premise that development is akin to building a pyramid, and therefore depends on laying down a solid foundation before proceeding to the next level. It is a strategy that recognises that businesses of various sizes are organically linked in intricate ways, such as through subcontracting. It also assumes that the necessary adjustments can only be brought about with the people's active involvement. Providing people with greater access to resources and information should enable them to bring about changes at the micro-

level and it is hoped, at the macro-level in the long run. The main challenge is to become responsive to people's needs by mobilising their support and existing resources. However, despite their emphasis on people's participation, direct assistance programmes are unfortunately often very much "top-down" in their conception and implementation.

At a glance, it may seem that the direct assistance programmes are more suited to meeting the challenges of micro-enterprises. However, any direct assistance given to the informal sector without the necessary enabling environment may not result in the expected gains. It is for this reason that it has been found that pursuit of both options is desirable. They can be mutually complementary, with each reflecting a different view of the process of development, the role of the government in the development process and the ability of firms to respond to incentives.

2.3.2 Choice of a Delivery Model

The choice of a model for reaching and supporting micro-enterprises depends on the target groups, programme objectives, and the administrative structure of the intervention agency. Two models which have been extensively used in assisting micro-enterprises are: integrated model and minimalist model.

The integrated model to enterprise development was pioneered in India in the early 1950s, and has been applied throughout the developing countries. This variant not only offers a variety of assistance to a range of small enterprises, but also provides protection for certain groups of entrepreneurs.

Staley and Mose (1971) were early proponents of the need for such “supply-side” interventions, and emphasised the need for integrated programmes which could channel a range of assistance to local entrepreneurs. They argued that the need for such advisory services stems basically from the small firm’s lack of management specialisation in an era when specialised knowledge and techniques underlie most industrial progress. Neck (1977) identified key areas where such support should be directed: finance, training, markets, access to raw materials, manpower, technology, and community relations. He also argued that development planners should incorporate a comprehensive programme of support for small businesses into national plans, because in the past the small business sector had only “second-class status” and existing policies had indisputably favoured big rather than small business.

The initial intention was that support would be both interactive and complementary, but in reality it became enmeshed in a range of different institutions and agencies established to administer the support or to decide who needed preferential treatment. The programmes were often run by people with little business experience and were hindered by restrictive legislation. They were perceived as inappropriate, inflexible and overly bureaucratic. In addition, the programmes were criticised on the basis of their limited returns in terms of long-term growth, profits generated, and jobs created. These measures were often ineffective, inefficient and created an over-protected artificial environment for their clients.

Little (1987) reviewed the long-term cost-effectiveness of the Indian experience and suggested that these policies of reserving certain industries for specific social groups

have tended to reduce competition, artificially skew the market and in so doing have created unreal price differentials.

Research findings from around the world support the contention that small businesses which have received support over a long period of time perform less well than firms which have had to survive with no support. For example, Sandesara (1988) concludes that firms which were unassisted and located outside industrial estates in India had higher rates of profitability, higher capital productivity and higher surplus per cent of capital. Research by Kilby (1987) in Kenya showed similar results, and that between 1974 and 1985 firms receiving technical assistance from Kenya Industrial Estates programme grew at 1.4 per cent per annum; while enterprises which received no such assistance grew at 9 per cent per annum.

Confronted with the evidence on the shortfalls of integrated model, the minimalist model has gained a degree of credence. Advocates of minimalist model, favour “programmes which operate in a narrow focus supplying only one form of assistance” (Levitsky, 1989). A variation of the model is the incremental or process model which consists of gradually broadening the scope of a programme to remove one bottleneck at a time, according to the priorities identified by participants (Dessing, 1990).

The minimalist model has also been championed by those who think that training and technical assistance is too expensive to implement and does little to ensure profitability in practice. Tendler (1989) points to a number of evaluation studies which have cast doubt on whether this assistance actually leads to increased income. Her evidence suggests fully integrated programmes with their “ higher unit costs of lending and

greater demands for organisational sophistication” rarely succeed in meeting the needs of large number of clients.

For similar reasons, Harper (1989) argues that training has a limited role to play in micro-enterprise sector. In particular he singles out training intended to develop “entrepreneurial motivation or behaviour” as being the least valuable form of assistance. He bases this proposition on the perception that the informal sector is already dominated by successful micro-entrepreneurs, most of whom only need finance speedily delivered with “as few strings as possible”. Elkan (1989) also points out that there is little evidence of any positive returns on small business training, suggesting that its continuing existence is because it is “regarded as costless by governments”.

The minimalist perspective is not universally accepted, and critics of the approach argue strongly that credit or technology without training and technical assistance is of limited value. Credit given without adequate training is likely to be misused with the consequence of poor results and waste of resources.

Though most programmes are set up with a particular constraint in mind, the relative importance of the constraint may change overtime while the programme rarely changes in its orientation. In addition, though one barrier may seem prominent, these constraints are interactive and while a programme may be addressing itself to one constraint, the others may be even more crucial to business success. Further, most programmes assume that a constraint is equally felt by all activities in the informal sector, thus treating the sector in a homogeneous way. Even in one set of activities, the relative severity of a constraint may differ in impact. For example, it would seem that in metalworking activities, the most serious constraint is raw material shortage. Deeper

analysis may reveal that shortage of materials is only faced by sheet metal workers while those using leaf springs and tool steels may be facing acute shortage of capital. Taking or treating these activities in a homogeneous manner, as most programmes do, may not really solve the problem as intended.

In order to ensure the success of interventions, it would seem that addressing ourselves to a single preselected problem or constraint is not the right thing to do. Solving one problem at a time thus gradually broadening the scope of the programme would have better and long lasting effects in terms of the sustainability of the micro-enterprises.

2.3.3 Macro-level Interventions

Most of the measures undertaken to assist the micro-entrepreneurs to overcome various handicaps in their activities, have been supply-sided interventions. They have been in the areas like credit, infrastructure, government policies, marketing and creation of appropriate incentives in order to improve the business environment.

(a) Structural Adjustment

The structural adjustment policies pursued since the beginning of the decade have been designed to encourage small competitive ventures to take over from the large sheltered organisations. The idea is to adjust economic structures in order to improve the balance of payments, consolidate domestic finances and restructure the economic fabric in order to set it on the path of growth without disequilibrium.

The supply side effects of adjustment programmes that involve devaluation of currency and removal of subsidies may benefit some micro-enterprises and adversely affect others. Devaluation will lead to shortages of imported inputs thus increasing the price of inputs and it will also lead to lower real incomes thus lowering purchasing power. The removal of subsidies intended to affect production patterns also affect demand patterns by changing the distribution of income. Increases in agricultural prices which increase incomes of farmers erodes that of the urban working classes and of rural non-agricultural households. This might channel worker's consumption towards the cheap goods and services that micro-enterprises produce while increasing the demand of farmers for agricultural tools.

It clearly very difficult, given the time limits and the opacity of the information available, to assess the effects of the measures. However, in the short run, micro-enterprises appear to suffer much hardship in the process of adjustment (Levitsky, 1989; Hugon, 1990).

The increases in prices of informal sector inputs, and the fall in the purchasing power of the urban poor will mean that to maintain low prices and hence production, the micro-enterprises must resort to the use of lower quality materials. This will compromise product quality.

(b) Other Government Policies

At the speech level, governments are assigning high priority to measures designed to help the informal sector. These measures are aimed at creating an enabling environment for the micro-enterprises. For example, changes in government attitudes

toward small business have reduced harassment, although not eliminated it (McCormick, 1993). Newspaper accounts and informal observations of harassment suggest a major discrepancy between government policy and the activities of local authorities. In addition, the tendency to leave regulations on the books without enforcing them may appear to help micro-enterprises. Yet, by raising the level of uncertainty, it can actually stifle growth. On the positive side the government has constructed sheds for micro-enterprises in major urban centres in Kenya. This in itself is a recognition of the sector and its importance.

(c) Access to credit

Most micro-entrepreneurs believe that shortage of capital is their major, if not, their only problem. Many potential entrepreneurs are prevented from starting businesses only because they lack the initial capital. While some existing businesses are making remarkably effective use of small amounts of capital; others are unable to compete with formal manufacturers because they have to wait until a customer provides them with the raw material, or money to buy it, for whatever he wishes to purchase.

The usual way of overcoming this constraint has been to set up credit programmes specifically aimed at providing subsidised loans to these enterprises. The interest rates also vary depending on whether the loan obtained is to be used for financing working capital or fixed capital. In Bangladesh, for example, the rate of interest for fixed capital is higher than that for working capital (Khundker, 1989). Some countries restrict their credit facilities to either working capital or fixed capital.

The subsidised credit has not worked very well especially for those who really need it (Levitsky, 1983). In the first place, the entire system is too costly to administer and the high default rate does not help the situation. Secondly, the loans whose interest rates are subsidised, do not always go to those who actually need them. And finally, because the loans are cheap, the demand always outstrips the supply. Another problem with credit schemes is that their funds are often diverted to other commitments. One way of overcoming this has been to identify the various purposes for which credit is required and thereby provide the loan “in kind”. For instance, a study in Thailand (Amin, 1989) showed that most entrepreneurs preferred raw materials to financial credit.

The few credit schemes that have succeeded have been the ones modelled on the “informal ” banking system of money lenders (Liedholm, 1985). The main features of this type of system is that it lends solely for working capital and the amount of money involved is small and repayable over a short period. Another successful credit structure is one where loans are made through group guarantee schemes.

Nearly all credit policies relating to informal sector tend to favour working capital as against fixed capital. This may encourage the micro-entrepreneurs to be more innovative and willing to undertake technological adaptations. The other advantage is that the policies encourage the increase of production.

The major disadvantage of these measures is the they do not facilitate the introduction of new machinery and tools and may constrain the expansion of activities. Micro-enterprises need to invest in equipment in the interest of long-term survival and growth. The level of technology is a major determinant of the quality of products

manufactured and any measure that discourage or constrain the acquisition of technology, discourages the improvement of quality.

(d) Infrastructure

A constraint which is said to affect the growth of the informal sector is the lack of space to expand the operations. Most micro-enterprises are sited on road sides, near residential areas or on street pavements, with little or no room to expand. A common support measure therefore is to build premises in designated areas for micro-enterprises.

The lack of suitable premises has another serious limitation on the operations of the micro-enterprises. The lack of electricity and water was found to impose a severe constraint on the level of technology that can be adopted by the manufacturers (Aboagye, 1986).

Unfortunately, the policy of providing premises sometimes fails to help micro-enterprises because most of those involved in formulating and executing the plans, are more anxious to get the informal sector operators off the streets than helping them. Thus, the centres for informal manufacturers are usually established on the outskirts of the city. This immediately creates a problem for them because they are too far from their market and may lose it unless they resort to the use of intermediaries. Normally, micro-entrepreneurs like to locate their activities close to their market such that “the industries” are both “factories” and retail outlets.

A common consequence of the provision of working sheds for micro-enterprises is the clustering of all like-operators in a specific zone. This has a negative impact on the

growth of the sector because of the problem of overcompetition. However, it is likely to have a positive effect on the accumulation of technological capability.

Clustering of operators brings about a rapid transfer of skills and knowledge within the sector. Studies in Thailand, for instance, revealed that 35 per cent of the operators indicated that they obtained information about the possibility of using machines from neighbouring units (Amin, 1989). Most micro-entrepreneurs gain new knowledge through imitation, replication and copying techniques and products. This is facilitated by clustering. However, clustering does not necessarily lead to improvement of quality of products because those who copy possess less knowledge of what they are copying than the originator.

(e) Markets

The growth of the informal sector is constrained by the size of the market.

Markets are neither perfect nor completely free. Significant differences of quality and type of goods exist, however, information about competing products is often lacking. Government-imposed price controls distort internal markets. Yet at the same time, cheap imported substitutes destroy or transform some markets. Access to markets may be blocked by capital shortages, discrimination, lack of social and business contacts, or dominance of large enterprises.

It has been argued that one way of increasing demand for most informal sector products is to encourage a flourishing agricultural sector. The linkages between farms and small-scale industries played a major role in the successful development of South Korea (Harper, 1984). High prices were paid for agricultural crops; the resulting

increased farm earnings were used to invest in agricultural equipment to improve farm productivity, and to buy consumer durables. Since the majority of consumers in developing countries rely on incomes from agriculture, it is thought that increasing agricultural incomes will generate enough demand for consumer goods. Such increases which are seldom spectacular could enable farmers to afford the cheap products including agricultural implements from the informal sector.

Research in Sierra Leone, suggests that existing customers of small enterprises tend to buy more of the same products from the same sources as their incomes increase (Chuta and Liedholm, 1985). If this is generally the case, and if improved incomes do not totally revolutionise community buying behaviour, micro-enterprises may be expected to benefit from policies which successfully improve the incomes of their main customer group.

There are two ways of increasing agricultural incomes. The first way is to reduce the level of taxation on agricultural products. Most cash crops carry large taxes which are paid at the time of sale. In Sierra Leone, for example, the price paid to farmers by the marketing board was less than 50 per cent of the market price for several agricultural commodities, including coffee and cocoa (Liedholm et al, 1983). Indeed, such level of taxation is common throughout Africa.

A second method for increasing income from agriculture is the introduction of improved technology. Since some of the technology may be produced in the informal sector, the linkage between the sector and agriculture will be reinforced leading to increased demand for products made in the sector.

Another way of expanding the market for products made by micro-enterprises is through government purchases from the sector. This will depend on the government's requirements for products made in the sector, on political will and on the availability of funds. All these have been lacking in the past and it is unlikely that they will be found in abundance in the future.

Though increasing agricultural incomes may increase the market for the sector's products, a lot will depend on the type and quantity of agricultural produce. Further, for those dependent on exports, a lot will also depend on the improvement of the world economy as a whole. This leads us to another way of widening the market for products made by micro-enterprises - the tapping of high-income markets. This will require the informal sector to improve the quality of its products.

2.3.4 Technical Interventions

Technical interventions are aimed at assisting micro-enterprises themselves in daily activities. These include training and counselling on strategic issues like investment and planning, on administrative issues like contracts and financial management, and on operational issues like marketing, production, quality, customer relations etc. Micro-enterprises may also need assistance in finding new ideas for using unfamiliar scrap materials and finding more profitable locations.

(a) Training

The advocates of interventions in training start from the basic premise that micro-entrepreneurs do not possess managerial skills and this is the reason why they do not

“graduate” to the formal sector. However, management is often defined as “making the best use of scarce resources”, and it is difficult to find a better way than this of describing the day-to-day activities of micro-entrepreneurs. They often turn their capital over once a day or more, make materials out of what others have discarded, find market niches in the most obscure corners and construct machinery and tools of great ingenuity and economy (Harper, 1989).

Training is an attractive option to the policy maker or aid donor who is desperately searching for a politically neutral intervention: training courses can be established without the necessity to make painful changes in policy or other programmes. Training courses cannot easily be objectively evaluated, so that the sponsors are spared the embarrassment of explicit failure.

Training courses have not however been a great success. This is because those that have been provided have tended to be concerned only with the managerial-side and very little with ability to identify market opportunities and taking steps to exploit it (Anderson, 1982). There is also very little on the transfer of technical skills. Further, in practice, book keeping tends to be overemphasised as a panacea for better management, while marketing is often neglected (Dessing, 1990). As a result, assisted entrepreneurs spend valuable time keeping books they do not know how to use, or which anyhow would not help them solve their most pressing problems. Also micro-businesses integrate their domestic and business spheres with respect to resource allocation and financial flows, thus enhancing the staying capacity of the business (Lipton, 1980). Under such conditions, separate book keeping for the business is difficult and of limited use.

Formal training in managerial and financial skills may have an effect on the investment capability of the micro-entrepreneur. However, it is not likely to influence his production and innovative abilities. Further, where training in craft skills has been provided it has not tackled the technical upgrading of existing skills within the informal sector nor addressed the gaps left by the apprentice-learning process of the sector. The net effect has been the continuous production of poor quality products while much energy and time is directed toward marketing them.

Several organisations have developed programmes to enhance the development of skilled manpower in the informal sector. Such programmes are deemed necessary by their sponsors to address one or more of the perceived inadequacies, such as gaps left by traditional apprenticeships. However, conventional and apprentice skill development models do not usually include the kind of business skills, knowledge and attitudes that would allow owners to expand their businesses.

In Kenya's informal sector, there are two organisations that are involved in credit schemes which incorporate improvement of skills. The absence of skill improvement programmes in technological areas was noted.

(c) Technological Improvements

A major factor behind the failure of many micro-enterprise support programmes to develop new production-based operations is usually a complete absence of technology improvement and product development (Gamser, 1989). Whereas the importance of technology is widely accepted and appreciated in large-scale enterprises, the technological needs of micro-entrepreneurs have been largely neglected. Micro-

enterprises have great potential, but also pose great technological problems, which finance alone rarely can solve.

Micro-entrepreneurs work with uncertainty and with variations in raw material supply and quality. They are often unaware of technological options which could assist them to increase their productivity and business income. Though not in abundance, there are some simple low-cost technologies and tools which could benefit micro-entrepreneurs. Usually micro-enterprises have no access to such information partly because of deficiencies in the institutional network. The little information on simple technologies is often not tailor-made to match the absorption capacity of small entrepreneurs, leaving personal contact and simple imitation through observation as the main form of disseminating technological information.

Technological improvements could help in resolving quality problems and increase productivity in the informal sector. However, very little has been done in this area. Further, a review of literature reveals absence of any work on interventions directed specifically at improving the quality of informal sector products. It is on this basis that some of the interventions described below will be applied to the informal sector. Their relevance will be evaluated.

2.3.5 Interventions to Raise Product Quality

Interventions aimed at improving quality of products from micro-enterprises can loosely be divided into direct and indirect ones. Direct mechanisms seeks to improve

quality by focusing on products, processes and skills. Indirect mechanisms aim at motivating micro-entrepreneurs to raise quality. Both approaches are discussed below.

(a) Direct Mechanisms

Direct interventions have the advantage of raising user satisfaction, generating identifiable and quantified responses, and of benefitting the micro-entrepreneurs themselves. These mechanisms may be costly to implement due to their specialised nature, they are not easily reproducible due to variability between micro-enterprises and they benefit the individual enterprise rather than the whole sector.

There are inherent difficulties in implementing these mechanisms. Micro-enterprises are highly diverse in type, size and efficiency. A top-down approach may create a sense of dependence of the producer on the implementing intermediary. The choice of a delivery intermediary is difficult due to the inherent weaknesses of existing resource institutions with reference to technology programmes. Finally, it is difficult to quantify the benefits so as to determine whether they outweigh the cost of provision.

Direct interventions include product improvements, introduction of new products, process improvements and improvement in skills.

(i) *Introduction of New Products*

One way of helping the informal sector is by introducing new products which could be made by processes similar to those being used by producers. This has the advantage of utilising the producers' knowledge of processes. The introduction of new products would offer an entry through which assistance in raising quality of existing products

could be given. The producers understanding of the fundamentals of the processes he uses could be enhanced.

By introducing a new product, the producer could benefit from the added market the product could bring to the other products he manufactures. Of course, where the producer sees little chance of successfully marketing the products and getting added income from it, it has very little chance of being adopted.

(ii) Product Improvement

Another way of helping the micro-enterprises is through product improvements. This is a more direct way of raising quality than in introducing new products.

Usually this would involve a product that is extensively used and improvements that can be seen by the customers.

(iii) Process Improvement

Process improvement may involve raising the efficiency of the process, improvement to the machines or tools used or the addition of extra operations to the process.

Alternatively a process may be divided into different operations carried out by different individuals. This would encourage specialisation by operation which can improve the quality of a product. This latter type of process improvement may however not work in the informal sector because of the simplicity of the products made. Further, the micro-entrepreneur may not be able to engage people required for this kind of improvement.

Any improvement of machines or tools will normally involve the outlay of capital which the producer is unlikely to have. However, it may be a way of increasing both the volume of production and the quality of product. For example, a wheelbarrow producer found out that by investing in a jig, he could make more wheelbarrows and hence meet the demand for them. In addition, he found that the use of a jig helped to standardise the quality of his products and hence penetrate the formal distribution system. The introduction of a jig-jolly in the 1980s for the production of ceramic liners improved their quality and thereby the overall quality of lined braziers (a major product within Kenya's informal metalworking activities).

Process improvement would work best where the producer *has already identified a* problem with the process and noticed that the problem affect the quality of his product. The rise in quality must have an impact on his sales and consumer acceptance of his product. Thus process improvement is translated into quality improvement and expanded sales.

(b) Indirect Mechanisms

Indirect interventions focus on motivating producers to seek ways of raising quality. They cover the whole range of activities in the sector and have low involvement with intervening institution or intermediary. They are designed to reward high quality with high sales.

The outcome of these interventions is difficult to predict and their acceptance may be difficult. The interventions include trade-marking, consumer education, application of national standards, subcontracting and research.

(i) Trade-marking

A major problem faced by the micro-producers is marketing. In Kenya a lack of access to high-income market is visible: most micro-entrepreneurs are not able to penetrate the formal wholesale and retail outlets. Part of the problem is the poor quality of the informal sector products and hence their lack of acceptability to these outlets. One way of both expanding the low-income market and penetrating the high-income market is improvement of quality accompanied by trade-marking. This would help to improve the image of the products.

Trade-marking involves the use of a mark as a guarantee of good quality. Through trade-marking the consumer is given a channel for complaints in case of poor quality. It further shows the producers commitment to good quality production.

Trade-marking could be applied to some products in the sector. It would favour those products that are not made by many entrepreneurs and those products that require a higher level of technology so that they are not easily copied. In such circumstances a producer may monitor any misuse of his mark.

Trade-marking would help consumers to recognise products manufactured by particular producers and hence encourage repeat purchases. It would instil consumers confidence in the product since the manufacturer is not shying away from showing off his product and its quality. Trade-marking might also ensure that items of poor quality would be replaced or repaired.

Trade-marking has been in use in African manufacturing. Traditional potters used marks to distinguish their wares from those of others. This encouraged people to buy

from particular potters because of known product quality. This was extended or used in the early development stages (1982-86) of the Kenya Ceramic Jiko (brazier). The producers used to mark their liners to distinguish them from those of other producers. However, when applied to the braziers themselves, the method was not wholly successful because the symbols or marks were not highly visible and were not identifiable with particular producers. Moreover, a survey of purchasers of braziers showed that they were unaware of the liner trade marks, which have subsequently fallen into partial disuse.

For trade-marking to succeed, *the consumers have to be aware of the marks and be able to associate them with particular producers.* This seems to pose a problem when using trade marks in the informal sector. How can the marks be publicised so that the consumer comes to identify the marks with products of particular producers in a way that the producer can benefit from? The other likely problem would be consistency of quality in production.

Trade-marking has also been used in Kenya by a small-scale producer of balances. Initially the balances did not bear his mark and the consumers could not identify his products. The product bore the image of informal sector products, namely being of low quality and unreliable. Following improvement in quality, the producer put a label with the company's name and address in the product. Due to his confidence, all balances sold have a guarantee of one year and in case of faulty product, the product would be repaired or replaced. The result has been expanded sales and consumer confidence.

(ii) Application of National Standards

The majority of the products manufactured by the informal sector are imitations of those made in the formal sector. Most formal sector products are covered by relevant national standards.

Enforcing of national standards is however impractical in the informal sector. The producers are widely scattered and the cost of enforcing standards would be prohibitive. It is also difficult to distinguish the output of different producers due to lack of trade or manufacturer's labels. Micro-enterprises do not have testing facilities for ascertaining the quality of their products and their adherence to standards.

A related method is certification. This has been applied in the formal sector in Kenya, where those who produce goods of high quality are allowed to use a quality mark. However, this mark has often been abused by manufacturers. If applied to the informal sector, the same problem would arise. In addition, the acceptance of any quality mark by consumers, due to past abuses, is not likely.

(iii) Subcontracting

Increased subcontracting has been considered as a way of upgrading the quality of informal sector products.

Subcontracting between formal and informal sectors may represent a channel for infusing new knowledge and technology into the latter. However, subcontracting even in the formal sector is not widespread in Kenya. A clear picture of the potential benefits, and scope for, subcontracting has yet to emerge.

One of the major reasons why subcontracting has not taken off within Kenya's informal sector is the low level of technology required for many products. For most of these, the designs are so simple that there is no advantage in subcontracting within the sector. It is possible that the designs would change if subcontracting became common.

(iv) Consumer Education

Consumer education on quality may be undertaken by a variety of organisations. These include consumer associations, producer associations and other voluntary associations.

Consumer associations could assist in educating the consumers about their rights.

Consumers need to know that they do not have to accept products that are not reasonably fit for their purposes. This could raise consumer awareness and hence lead to consumer discriminating against products of poor quality. However, the consumer association in Kenya is weak and usually addresses itself to products made in the formal sector.

Producer associations may educate consumers in two ways. By educating the producers it makes them aware of their responsibilities in manufacturing good quality products. This could lead to higher quality thus raising the expectations of the consumers. Consumers also could be educated directly to make the right choices by raising their awareness of quality factors. However, producer associations are in their infancy and have not even managed to address themselves to the problems of producers, let alone consumers.

2.4 Conclusions

In this chapter, a review of studies on informal sector has been made in order to establish which aspects of the sector have been well studied and which areas justify further research. The dual nature of the economy and the dependence and exploitation of the informal by the formal sector have been deliberately emphasised. It is postulated that the growth of the informal sector cannot be realised unless this level of dependence is lessened.

The importance of the informal sector has been emphasised throughout the chapter with the sole purpose of showing that the sector can be made a more viable part of the economy, socially, technologically and economically.

In the literature on the informal sector there is a conspicuous absence of interventions specifically aimed at improving the quality of its products. In this research, some of the interventions discussed above will be applied to assess their suitability on improving the quality of the products.

The theme of quality has appeared several times. A generalised perception of low quality is present in the literature. However, in informal sector studies the term “quality” has been used in a very loose way, whereas in formal manufacturing there is a big body of literature on quality and several schools of thought concerning it. The preceding review has identified an interest in quality but it has been vague and it is therefore necessary to look into these rival concepts more thoroughly and to develop workable definitions and approaches in relation to the informal sector .

CHAPTER THREE

QUALITY IN MANUFACTURING

In this chapter we review the concepts and practice associated with quality in large scale manufacture. Most of the writing and much of the practice has been directed at large-scale production, which is very different from informal sector manufacturing in Africa. There is however no separate body of studies of quality in informal production: it is a virgin field. We survey the manufacturing quality literature available for ideas or procedure that might be applicable to the Kenyan informal sector. In chapter four we will develop specific hypotheses through which the concepts reviewed can actually be related to informal manufacture as characterised in chapter two above.

3.1 The Concept of Quality

Consumer purchase a “bundle of satisfactions” that include convenience of purchase, design of the package, manufacturer’s reputation, and style of advertising. The problem of determining exactly what the attributes of a product contribute to these “satisfactions” is extremely difficult.

When considering the physical product apart from the additional attributes, real or fancied, bestowed on it by an effective marketing programme, the manufacturer’s attention is usually centred on product quality. In this context, product quality is often

measured in terms of the purity of materials used, the technical perfection of design and exacting standards of production. The quest for this kind of product quality on the part of technically trained and oriented people is understandable and within limits, highly laudable. However, thinking of product quality simply as a function of the commercial purity of materials used or the technical perfection of design and manufacture is a denial of “consumer orientation”. Consumers do not make chemical or physical analysis of the goods they buy. They use a product and react to its ability to satisfy their wants.

Product quality in the technical sense is important because consumers generally wish to be reassured that they are not getting inferior materials or shoddy workmanship. They can be alienated by lack of consistency in those product characteristics which they regard as important. The manufacturer should also realise that consumer preferences for physical aspects of the product may or may not be closely related to currently established technical measures of product quality. In the final analysis of the marketplace, the quality of a product depends on how well it fits patterns of consumer preferences.

Unfortunately, giving the consumer what he wants is easier in the saying than in the doing. Standards of measuring certain technical aspects of quality may be well established in most companies, but how does one establish measures of consumer preferences across the broad ranges of possible product characteristics.

The breadth and complexity of these demands embrace a whole spectrum of management problems - price structure and cost reduction, industrial relations and organisational development, technology change and mechanisation, selling and

introducing new products. Effective solutions to many current problems call for new approaches and understanding in management. This need is most evident in the area of quality.

Quality is an unusually slippery concept, easy to visualise and yet exasperatingly difficult to define. It remains a source of great confusion to managers and producers. Quality improvement is unlikely in such setting. Even when quality has been defined within acceptable limits, its measurement remains difficult and sometimes elusive. Methods of measurement adopted sometimes reflect only the manufacturer's view of quality and may be ignorant of the ranking of characteristics in the consumers' mind. Measurement under those circumstances thus ceases to serve the social function of communicating effectively about the products, their characteristics and their ability to satisfy the consumer.

3.2 Definitions of Quality

Product quality has always been an important competitive issue. Despite the interest of managers, quality remains a term that is easily misunderstood. In everyday speech, its synonyms range from luxury and merit to excellence and value. Different companies also appear to mean different things when they use the word, as do different groups within the same firm. Without further refinement, continued ambiguity and confusion are inevitable.

A better understanding of the term is therefore essential if quality is to assume a strategic role in management and organisation of the business. The academic literature

on quality in general has not been reviewed extensively. The problem is one of coverage. Scholars in four disciplines - philosophy, economics, marketing, and operations management - have explored quality, but each group has viewed it from a different vantage point. Philosophy has focused on definitional issues; economics, on profit maximisation and market equilibrium; marketing, on determinants of buying behaviour and consumer satisfaction; and operations management, on engineering practices and manufacturing control. The result has been a host of competing perspectives, each based on a different analytical framework and each employing its own terminology.

There is no universally accepted standard definition for quality. At the same time, a number of common themes are apparent and all of them have different, but important management implications.

Five major categories of definitions of quality have been identified (Garvin, 1984). These are: transcendent quality of philosophy; product-based quality of economics; user-based quality of economics, marketing and operations management; manufacturing-based quality of operations management; and value-based quality of operations management. These definitions are reviewed below. Later in the chapter, their relevance to the informal sector will be analysed.

3.2.1 Transcendent Quality

According to the transcendent view, quality is both absolute and universally recognisable. It is a mark of uncompromising standards and high achievement.

Nevertheless, proponents of this view claim that quality cannot be defined precisely, rather it is a simple unanalysable property that we learn to recognise only through experience. In addition, quality can be understood only after one is exposed to a succession of objects that display its characteristics.

Some claim that even though quality cannot be defined, you know what it is (Pirsig, 1974). Quality has been described as achieving or reaching for the highest standard as against being satisfied with the sloppy or fraudulent (Tuchman, 1980).

The drawback with these definitions is that they offer little practical guidance and hence their application in modern day production is quite limited. However, when an attribute is actually subjective, like taste, the transcendent position cannot be challenged. Further, the subjective opinion of, say a producer, may be useful, so long as it reflects the opinion of the customer. In fact, the transcendent opinion of the customer is the most important measure of a product's quality. However, transcendent definitions of quality are of no help in determining how to improve a product or in measuring progress, except in a gross sense.

3.2.2 Product-based Quality

Product-based definitions view quality as a precise and measurable variable. According to this view, differences in quality are reflected in differences in quantity of some ingredient or attribute possessed by a product (Abbott, 1955). For example, a high quality bauxite is one with high content of alumina. This approach lends a vertical or hierarchical dimension to quality, for goods can be ranked according to the amount of

the desired attribute that they possess. Such a ranking is meaningful only if the attributes in question are considered preferable by virtually all buyers.

These definitions of quality first appeared in the economics literature, where they were quickly incorporated into theoretical models. Early economic research on quality focused almost exclusively on durability. The implication was that since most goods provide a stream of services over time, increased durability gives a longer stream of services and in effect more of the good. High durability was thus taken as high quality, thus treating differences in quality as differences in this quantity.

An implication of this definition is that higher quality can only be obtained at higher cost since quality is a reflection the quantity of attributes that a product contains and these attributes are generally costly to produce. Since quality is viewed as an inherent characteristic of the product and reflects the presence or absence of a measurable product attribute, it can be assessed objectively.

While the objective nature of the definition is an important strength, it has limitations as well. A one-to-one correspondence between product attributes and quality does not always exist and when quality is a matter of aesthetics, this approach fails to accommodate differences in tastes and preferences.

In addition, where a product has multiple attributes, this definition may not recognise the relative importance of the various attributes to different consumers since there is an inherent assumption that the attributes have the same ranking for all consumers, which is rarely the case.

3.2.3 User-based Quality

According to this definition, individual consumers are assumed to have different wants or needs, and those goods that best satisfy their preferences are those having the highest quality. This is a personal view of quality and is highly subjective. In the marketing literature, it has led to the notion of “ideal points”; precise combinations of product attributes that provide the greatest satisfaction to a specified consumer (Ratchford, 1975). In the economics literature, it has led to the view that quality differences are captured by shifts in a product’s demand curve (Chamberlain, 1953). And in the operations management literature, it has given rise to the concept of “fitness for use”(Juran, 1974). These concepts have problems in aggregating widely varying individual preferences so that they can lead to meaningful definitions of quality at the market level.

The aggregation problem is usually resolved by assuming that high-quality products are those that best meet the needs of a majority of customers. This implies a consensus of views and assumes that virtually all users agree on the desirability of certain product attributes. However, the wants that a product must satisfy may differ widely among buyers. Human wants are incapable of being neatly arranged in a single pattern.

Human wants partly express enduring biological and physiological characteristics of the human species, such as age and sex, and thus have basic functional significance. In part they express the conventions and institutions of a particular social, economic or industrial group. Most societies have differentiated groups and variations in value of a given product can be attributed specifically to these differences.

User-based definitions ignore the different weights that individuals attach to specific characteristics and suffer from the difficulty of devising an unbiased statistical procedure for aggregating such widely varying preferences (Edwards, 1968). For the most part, these problems have been ignored by theorists. Economists, for example, have typically specified models in which the market demand curve responds to quality changes without explaining how that curve, which represents a summation of individual preferences was derived in the first place (Sheshinski, 1976).

A basic problem with user-based definitions is their equation of quality with maximum satisfaction. While the two are related, they are by no means identical. A product that maximises satisfaction is certainly preferable to one that meets fewer needs, but it is not necessarily better. A consumer may enjoy a particular brand because of its unusual tastes or features, yet may still regard some other brand as being of higher quality. In the latter assessment, the product's objective characteristics are also being considered.

Even perfectly objective characteristics are open to varying interpretations. Today, durability is regarded as an important element of quality. Long-lived products are generally preferred to those that wear out more quickly. This was not always true. Until the late nineteenth century, durable goods were primarily possessions of the poor, for only the wealthy individuals could afford delicate products that required frequent replacement or repair (Yepsen, 1982). The result was a long-standing association of inferior quality with durability, a view that changed only with the mass production of luxury items made possible by the industrial revolution.

3.2.4 Manufacturing-based Quality

Manufacturing-based definitions are primarily concerned with engineering and manufacturing practice, thus focusing on the supply side of the equation. Nearly all manufacturing-based definitions identify quality as “conformance to requirements” (Crosby, 1979). Once a design or a specification has been established any deviation implies a reduction in quality. Excellence is equated with meeting specifications, and with “making it right the first time”. In certain respects, repeatability is highly desirable. Thus a wrongly sized product will not fit and is therefore of lower quality. Regardless of whether quality is conformity to specifications, the structure of large manufacturing industry makes this an attractive measure. The very structure of a firm, where design is separated from sales and manufacturing, requires its manufacturing division to translate specification into products.

While this definition recognises the consumer’s interest in quality, it does not pay attention to the link in the consumer’s mind between quality and product characteristics. Quality is defined in a manner that simplifies engineering and production control. On the design side, this has led to an emphasis on reliability engineering. On the manufacturing side, it has meant an emphasis on statistical quality control.

3.2.5 Value-based Quality

Value-based definitions define quality in relation to costs and prices. Thus, a quality product is one that provides performance or conformance at an acceptable price or cost (Feigenbaum, 1986).

Despite its obvious importance, the definition is difficult to apply because it blends two related but distinct concepts. Quality, which is a measure of excellence, is being equated with value for money which is a measure of worth. The result is a hybrid - affordable excellence - that lacks well-defined limits and is often highly subjective.

3.2.6 Relevance of definitions to the Informal Sector

The transcendent viewpoint and the informal sector have something in common. Both are imprecise and are based on the idea that you know or recognise them when you see them. However, in the former it fails to relate quality to cost. High achievement does not give us a way of measuring quality or comparing two differing products. Striving for excellence for its own sake and sustainable production in the sector are incompatible. Further, this definition may not show us at what level of quality the sector is operating. On this basis, the definition was not found applicable.

The product-based definition may find narrow application in the informal sector due to its objective nature. Most of the informal sector products possess measurable attributes. However, this definition cannot be applied to production in a sector where

measurements are not part of the production function. If the micro-enterprises get involved in subcontracting, then the definition will be applicable.

The user-based definitions may have wider applications in the sector. The sensitivity of consumers is strongly felt in the sector because of the close contact between the producer and customer. It therefore becomes desirable that products match the consumers' needs. A consumer approach to quality would tell us the level of quality that the sector is operating at and what needs to be done to improve it. For these reasons, user-based definitions will be applied in this study.

The manufacturing definition has relevance to the sector in that most products manufactured there are imitations of those made in the formal sector where manufacturing-based definitions apply. However, despite their relevance, these definitions cannot be applied in a sector where the organisation of production does not permit a high level of sophistication. Further, the skill base of the sector may not allow the definitions to be applied.

The value-based definition also seems to fit the informal sector in many ways. First, the sector is believed to produce goods for the poor. Therefore performance at an acceptable price is the key to production. Secondly, it has the functional orientation which most informal manufacturing activities have. However, its applicability in the sector is made difficult due to the very nature of determining what is value. Despite this drawback the definition will be used because quality is usually perceived in relation to price in this sector.

The difficulties of relating the above definitions to the informal sector underscores the fact that despite their multiple merits, all these definitions share a common problem. Each is vague and imprecise when it comes to describing the basic elements of quality. On their own, these definitions are not comprehensive, but like the seven blind men describing the elephant, each gives only a partial insight of quality. All these viewpoints have their virtues and between them cover most aspects of quality. The problem lies in integrating them without on the one hand excessively diluting them or on the other hand introducing unmanageable complexity.

The co-existence of these differing viewpoints has important implications. First, it helps to explain the often competing views of quality held by members of marketing, engineering and manufacturing departments of the same company. Secondly, despite the potential for conflict, companies can benefit from such multiple perspectives.

Reliance on a single definition of quality is a frequent source of problems. For example, an emery paper manufacturer was losing market share. When he asked one of his main customers why he had gone over to the competition, he was given the following reply: Your paper just is not competitive; the number of square metres used per 100 parts polished is much higher than for your competitors (Teboul, 1991). In this sentence, the customer articulated his selection criterion, which the manufacturer had never realised. All this time, he had merely been testing his product against the quality standards of the industry. Conformance was excellent, reflecting a manufacturing-based approach to quality, but acceptance was poor, reflecting neglect of user-based approach. A leading US manufacturer of room air conditioners faced the opposite problem. Its products were well received by customers. Reject, scrap, and warranty

costs were so high, however, that large losses were incurred. While the product's design matched customers' needs, the failure to follow through with tight conformance in manufacturing cost the company dearly (Garvin, 1988).

In both examples, managers felt they were producing high-quality products. And they were, but according to only one of the definitions of quality. The lesson from these examples is that treating quality in a homogeneous manner will bring problems. Because each definition has predictable blind spots, companies are likely to suffer fewer problems if they employ multiple perspectives on quality, actively shifting the definition they take as products move from design to market.

The informal sector produces some products also made in the formal sector and others which are custom made. Taking the user-based and value-based definitions will avail to us the attributes that the consumers feel satisfied with and those that displease them in consuming informal sector products. This information could be translated into a programme for the improvement of the quality of the sector's products.

3.3 Elements of Product Quality

In this section product quality is broken down into separate attributes. Each of the five definitions of quality discussed in the last section tends to associate with a limited band of attributes, although a few attributes are covered by almost all the definitions.

Despite the different definitions of quality, it is quite obvious that manufacturers should develop a new way of thinking, building a conceptual bridge to the consumers' vantage point. It is evident that high quality means pleasing consumers, not just

protecting them from annoyances. To do this, they must look at quality in a less homogeneous way. Quality has to be broken down into manageable parts in order to define quality niches in which to compete. Some important parts of quality are performance, reliability, durability, and serviceability: these will be discussed in turn.

Quality has multiple characteristics which can readily be grouped into categories. Some characteristics can be classified as measurable product attributes and others as individual preferences. Some could be termed as objective and others subjective. Some are inherent characteristics of products, while others are ascribed characteristics.

Each category is distinct, for a product or service can be ranked high on one attribute or dimension while being low on another. Moreover, in many cases the elements are interrelated. Improvement in one element may be achieved only at expense of another. The challenge to producers is to compete on selected elements.

3.3.1 Performance

Performance refers to the primary operating characteristics of a product. This element of quality combines aspects of both the product-based and user-based definitions discussed earlier. Measurable product attributes are involved, and brands can usually be ranked objectively on at least one dimension of performance. Whether performance differences are perceived as significant quality differences depend on individual preferences. Users typically have a wide range of interests and needs; each is likely to equate quality with high performance in his or her areas of immediate interest. A car may be judged as of good quality by one consumer due to its low fuel consumption

and by another for its power and speed. These clearly represent differences in the areas of interest in the performance dimension.

The connection between performance and quality is also affected by semantics. The words that describe product performance include terms frequently associated with quality, as well as terms that fail to carry the association. For example, a ten-tonne truck provides greater load-carrying capacity (performance) than a five-tonne truck, yet few consumers would regard the difference as a measure of quality. The products simply belong to different performance classes. The quietness of a car's ride, however, is typically viewed as a direct reflection of its quality. Quietness is therefore a performance dimension that readily translates into quality, while load carrying capacity is not. These differences appear to reflect the conventions of language as much as they do personal preferences. Thus performance of a product would correspond to its objective characteristics, but the relationship between performance and quality would reflect individual reactions (Lancaster, 1966).

Performance is highly applicable in the informal sector and could be used to compare the products of several producers more objectively. In addition products from the sector could be rated against an acceptable bench mark and hence give us the basis for further improvement.

3.3.2 Conformance

Another element of quality is conformance, that is, the degree to which a product's design and operating characteristics meet pre-established standards. With this respect,

conformance may be applicable in two ways. Conformance may be applied to how an individual product meets the requirements of an external standard, whether a national standard or a societal standard such as the height of a chair, the size of a stove etc. It may also be applied to how an individual product conforms to specific design, for example, how closely an individual wick lamp conforms to a traditional design.

A special feature of conformance is it assumes that the standard is ideal. In some cases, deviation from the target on either side is viewed as loss of quality: for example the size of a shoe should not deviate from its labelled size. In other cases, deviation from one side only is to be avoided. *For example, packed grains should not weigh less than the target, but it is quite acceptable to the consumer if they weigh more. Similarly, the amount of artificial food colouring in cooking aids should not exceed a certain limit, but it is quite acceptable if is non-existent or very small.*

There are two distinct approaches to conformance. The first, equates conformance with meeting specifications. All products and services involve specifications of some sort. These specifications are seldom defined as a single value. Normally, they include a target or a centering dimension, as well as permissible range of variation or tolerance. Because this definition of conformance equates good quality with operating inside a tolerance band, there is little interest in whether the centering dimension has been met exactly. For the most part, dispersion within specifications limits is ignored.

One drawback of this approach is the “mismatch” of parts whose dimensions meet their specifications. If one part falls at the lower limit of its specifications and a matching part at its upper limit, a tight fit is unlikely. Even if the parts are mated initially, the link between them is likely to wear more quickly over time than one made

from parts whose centering dimension has met exactly. Eventually, reliability will suffer.

To address this problem, a second approach to conformance emerged. Taguchi begins with the idea of a “loss function” that measures the losses a product imparts to society from the time it is shipped (Kackar, 1986). Such losses include warranty costs, dissatisfied customers and other losses due to performance failures. He then equates conformance with the degree of variability around the target dimension.

With respect to this variability around the target dimension, the vast majority of mass-produced goods should cluster tightly around the target, suggesting few problems due to tolerance stack-up and, because of the link between conformance and reliability, overall losses will be small.

Both conformance and reliability are closely tied to manufacturing-based definitions of quality. Improvements in both measures normally translate directly into quality gains, because defects, field failures, and processing errors are regarded as undesirable by virtually all consumers. These measures are therefore relatively objective measures of quality and are less likely to reflect purely individual preferences than are rankings based on performance and features. In manufacturing, conformance is used as a surrogate of all elements of quality.

In the informal sector, producers do not set usually standards to which their products should conform, where they do, standards are not common to all producers. In fact, many products are non-standardised even in one enterprise, because of the different materials used. In these circumstances, conformance is not applicable in the sector.

However, should the micro-enterprises get into subcontracting arrangements, then standardisation would be a requirement and conformance would apply.

3.3.3 Durability

Durability, a measure of product life, has both economic and technical dimensions.

Technically, durability can be defined as the amount of use one gets from a product before it physically deteriorates. Economically, durability represents the amount of use one gets from investing in a product over a period of time before negative utility set in. Negative utility may set in before the product physically breaks down or deteriorates.

Durable products satisfy wants over a period of time, so that the adequacy of the satisfaction does not depend solely upon the product's initial performance, but also its immunity from breakdown, and ease of maintenance and repair.

When repair is possible, durability becomes more difficult to interpret. Durability then, becomes the amount of use one gets from a product before it breaks down completely such that replacement is regarded as preferable to continued repair. Consumers are faced with a series of choices: each time a product fails, they must weigh the expected cost, in both money worth and personal inconvenience, of future repairs against the investment and operating expenses of a newer, and perhaps more reliable model.

Durability and reliability are closely linked. A product that fails frequently is likely to be scrapped earlier than one that is more reliable, repair costs will be correspondingly higher, and the purchase of a new model will look much more desirable. However, durability figures should be interpreted with care. Product life becomes an aspect of

quality, but quality is not increased by product life extending beyond the point where the product becomes socially or technologically obsolete.

The life of a product depends upon its design and construction when new, and upon the circumstances that develop in subsequent years. These circumstances change and may be difficult to predict. Consequently, the expected durability of a product is hard to assess at the point of purchase.

For a sector that produces metal goods for the low-income population, durability is an important element in the consumer appeal.

3.3.4 Serviceability

The speed, courtesy and competence of repair are other aspects of products that consumer use in judging the quality of a product. Customers are concerned not only about a product breaking down, but also about the elapsed time before service is restored, the timeliness with which service appointments are kept, the nature of their dealings with service personnel, and the frequency with which service calls or repairs fail to resolve outstanding problems. Some of these variables can be measured quite objectively; others reflect differing personal standards of what constitutes acceptable service. Most customers equate more rapid repair and reduced downtime with higher quality, and hence these aspects of serviceability are less subject to personal interpretation than those involving evaluations of courtesy or standards of professional behaviour.

Serviceability is affected by several factors. Design affects serviceability in that it either facilitates or hinders fast and accurate servicing. For example, easy access to the engine in a car facilitates serviceability. The level of development of the service and repair sector also affects serviceability. Other factors affecting serviceability include the availability of spare parts and technological obsolescence. Finally, when one buys a durable product, one buys a relationship, that is, the availability of servicing in the future.

This element is not very applicable in the informal sector because of the nature of the products manufactured. The sector is involved in the manufacture of simple products which do not require servicing. However, serviceability applies to the sector in producer treatment of customers. Sales knowledge, honesty, and courtesy would be considered as aspects of serviceability in the sector.

3.3.5 Reliability

Reliability is the probability of a product performing a specified function without failure under given conditions for a specified period of time. The probability of performing without failure can be converted readily to other measures such as failure rate, mean time between failures etc..

Reliability is determined largely by the quality of design. The attainable reliability inherent in the design is called “intrinsic reliability”. However, the achieved reliability is usually less than this due to unanticipated environments during use, lapses in quality of conformance, inadequacies in maintenance etc..

Reliability normally becomes more important to consumers as downtime and maintenance become more expensive. For example, farmers are sensitive to downtime during harvest season when the time available for work is short. For similar reasons, consumers in other markets, for example, automobiles, have become increasingly demanding of reliability.

The element of reliability poses problems for consumers assessing quality of products. This is more so where production is anonymous, or where designs are changing rapidly or where purchases by an individual are widely spaced in time. In addition, evaluation of achieved reliability requires actual use of product over a period of time.

Reliability is not crucial in the informal sector due to the nature of products made. However, due to many instances of the sector's products not working after having been bought it therefore becomes necessary to assure customers that the product really works.

3.3.6 Features

Features are product characteristics which only some consumers or users value and hence they can be treated as secondary characteristics. Examples of features include a wiper for the rear windscreen of a car, wipers for headlights, wheels for suitcases etc. In many cases, the line separating primary product characteristics from secondary ones is difficult to draw. Features, like product performance, involve objective and measurable attributes; their translation into quality differences is however also affected

by individual preferences. The distinction between the primary and secondary characteristics is largely a matter of centrality or degree of importance to the user.

There is hardly any product differentiation in the informal sector and hence this element may seem unimportant. However, should the sector venture into high-income markets, features will become important.

3.3.7 Aesthetics

Aesthetics is closely related to the user-based definition of quality. Aesthetics - how a product looks, feels, sounds, tastes, or smells - is clearly a matter of personal judgement and a reflection of individual preferences. However, there is a powerful societal element in product aesthetics such that often a clear consensus exists among users as to how certain products can be ranked for their aesthetic “quality”.

Product quality may depend on the intended use, and this may vary depending on the eyes of the consumer. Automobile bumpers, for example, can be seen as decorative accessories or as serving a functional purpose. When evaluating quality, some users may find the decorative aspect much more important because it has aesthetic appeal, and they are willing to sacrifice function for beauty. Thus, the aesthetic appearance of products such as clothing or jewellery will represent an aspect of quality as seen by some of the consumers.

Consumers though usually attracted by appearance may buy from the informal sector due to price. Despite the products made by micro-enterprises having little visual

appeal, aesthetics will be useful in judging the quality of products made in the sector since it is one of the elements that user-based definitions focus on.

3.4 Perceived Quality

High quality can be defined broadly as superiority or excellence. By extension, perceived quality can be defined as the consumers' judgement about a product's overall excellence or superiority (Lewin, 1936). Perceived quality is a higher level abstraction rather than a specific attribute of a product.

Product information is retained in the consumers' memory at several levels of abstraction (Olson and Reynolds, 1983). The simplest level is a product attribute; the most complex level is the value or payoff of the product to the consumer. Evaluations of quality usually takes place in a comparison context. Maynes (1976) claimed that quality evaluations are made only within the set of goods which would, in the consumers' judgement, serve the same general purpose for a similar outlay. The set of products used in comparing quality appears to be the consumers' evoked set.

Perceived quality is similar to the user-based definition, discussed earlier. It is different from objective quality, which arguably may not exist because all quality has to be perceived by someone, be it consumers or managers. Though measures of specifications may be actual (rather than perceptual), the specifications themselves are set on the basis of what the managers perceive to be important. In a research study for General Electric, striking differences between consumer and manager perceptions of quality were noted (Morgan, 1985). When asked how consumers perceived quality,

managers listed workmanship, performance and form as critical components.

Consumers actually keyed in on different components: appearance, cleanability and durability.

The divergence of perception of quality between producers and consumers may remove the competitive edge of many producers. It is therefore necessary to determine whether a divergence of perceptions exists and how they affect the consumer. It is important to determine how producers reconcile their views with those of consumers since this has an important bearing on ways of improving quality in the informal sector.

3.5 Remarks on the Elements of Product Quality

The diversity of these elements of quality helps to explain the differences among the definitions of quality. Each principal category is focused primarily on a different element of quality: the transcendental quality on aesthetics and features; the product-based quality on performance, features, and durability; the user-based quality on aesthetics and performance; the manufacturing-based quality on conformance and reliability; and the value-based quality on performance, aesthetics and features.

Few products rank high with respect to all seven elements of quality. Those that do, require consumers to pay unreasonably high prices. However, products do not need to rank high on all elements. There are trade offs that enable companies to pursue a selective quality niche. In fact, companies have no other choice. Technological limitations impose constraints and this is more acute in the informal sector.

Though competing in a few elements of quality is found to be the most positive and cost efficient way, it must be pointed out that many companies have chosen to compete on dimensions that are unimportant to the consumer. This has happened due to poor market research which often results in neglect of quality aspects that are critical to the consumers. Finally, it is a mistake to stick with old quality measures when the external environment has changed. Consumers tastes and preferences change and hence the quality aspects that are in focus today may not be the ones tomorrow.

Due to the meagre resources and low level of technology, it would be expected that micro-enterprises compete on very few elements of quality. It is therefore important to determine the elements that producers actually compete on, and how these affect the consumers' perceptions of quality of informal sector products.

3.6 The Consumer and Quality

3.6.1 Intrinsic and Extrinsic Attributes

Early philosophers used the word quality to refer to explicit feature, that is, properties or characteristics of an object as perceived by a subject (Holbrook and Corfman, 1985). This tendency to infer quality from specific attributes has been termed as "surrogate-based preference forming behaviour"(Olshavsky, 1985). Examples cited in which a given surrogate is highly associated with quality include "size signals quality" in stereo speakers and "style signals quality" in cars and clothes. In these and other product categories, one or a few attributes from the total set of attributes appear to serve as reliable signals of product quality.

Attributes that signal quality have been categorised into intrinsic and extrinsic cues (Olson, 1977). Intrinsic cues involve the physical composition of the product. Intrinsic attributes cannot be changed without altering the nature of the product itself and are consumed as the product is consumed. Extrinsic attributes are product related but not part of the physical product itself. They are, by definition, outside the product. Price, brand name, and level of advertising are examples of extrinsic attributes to quality. Apart from price these extrinsic attributes are largely non-existent in informal sector.

The intrinsic-extrinsic dichotomy of quality cues is useful for discussing quality but is not without conceptual difficulties. A number of cues are difficult to classify. For example, cues involved in a product's package may be classified as intrinsic or extrinsic, depending on whether or not the package is considered part of the physical composition of the product.

Generalising about quality across products has been difficult for managers and researchers. Specific or concrete intrinsic attributes differ widely across products, as do the attributes consumers use to infer quality. Obviously, attributes that signal quality in fruit juice are not the same as those indicating quality in automobiles. Even within a product category, specific attributes may provide different signals about quality. For example, thickness is related to high quality in tomato-based juices but not in fruit-flavoured children's drinks. The presence of pulp suggests high quality in orange juice but low quality in passion fruit juice.

Though the concrete attributes that signal quality differ across products, higher level abstract elements of quality can be generalised to categories of products. As attributes become more abstract, they become common to more alternatives. Thus our focus

only on informal sector metal-working activities may generate uniformity in quality inference across products.

In another dimension, consumers may evaluate quality at the point of purchase or at the point of consumption. The salience of intrinsic attributes at the point of purchase depends on whether they can be sensed and evaluated at that time, that is, whether they contain search attributes. Where search attributes are present, they may be important quality indicators. In their absence, consumers depend on extrinsic cues. It has been concluded that intrinsic cues are in general more important to consumers in judging quality because they have higher predictive value than extrinsic cues (Darden and Schwinghammer, 1985). This conclusion does not account for the fact that many assessments about quality are made with insufficient information about intrinsic cues.

Extrinsic cues are posited to be used as quality indicators only when the consumer is operating without adequate information about intrinsic product attributes. This situation may occur when the consumer has little or no experience with the product, has insufficient time or interest to evaluate the intrinsic attributes, or cannot readily evaluate the intrinsic attributes. These situations are discussed below.

At the point of purchase, consumers cannot always evaluate the relevant intrinsic attributes of a product. For example, consumers do not know how well the latest detergent will wash their clothes until they purchase it and consume it. In this and similar situations, the consumer relies on extrinsic attributes such as brand name, package, and warranty as surrogates for intrinsic product attributes.

At other times, intrinsic attributes by which to evaluate quality are available but the consumer is unwilling or unable to expend time and effort to evaluate them. Working men and women have been reported to use supermarket product information more than other segments of the population because they are more time conscious (Zeithaml, 1985).

In many situations, intrinsic product attributes indicating quality are difficult for any consumer to evaluate. Evaluation may be difficult prior to purchase, for example, restaurant meals and other experience goods. Auto repairs is an example of a service difficult to evaluate even after purchase and consumption. For this, consumers may rely on extrinsic cues because they are simpler to access and evaluate.

Extrinsic attributes are not product-specific and could serve as general indicators of quality across many types of products. Consumers purchase decisions are frequently made under conditions of uncertainty regarding the product and its attributes. To reduce uncertainty, consumers seek and process information regarding the product and generally attempt to form accurate impressions of it. Cues relevant to forming impressions of quality include price, brand and store image, advertising, word-of-mouth reports and past purchase experience. Of these cues, the greatest attention so far has been directed toward price and advertising. Price is a powerful piece of information since it is concrete and measurable, and the consumer views it with more confidence (Shapiro, 1968).

The absence of advertising, brand name and store image, contributes to the heavy reliance on sectoral image, price, word-of-mouth reports and past purchase experience

as the basis in which many purchase decisions in the informal sector are made. It is of interest to evaluate how this absence affects consumer judgement.

3.6.2 Price

Price enters into the determination of consumers choice in two ways: as a measure of cost and as an indicator of quality. Gabor and Granger (1966) proposed that a consumer intent on a purchase has two price limits in mind: an upper limit above which the product would be judged too expensive, and a lower limit below which the quality of the item would be suspect. Between these two extremes, it is evident that there exists a point where consumer satisfaction is optimal.

Price, especially price differences, serve two functions, allocating resources as well as conveying information. Price difference may have more than one meaning. Most often, perhaps, we think of high prices negatively, in terms of the sacrifice we must make to get what we want. In other cases, we think of high prices positively, as a symbol of extra quality or extra value or prestige (Leavitt, 1954).

Price has been indicated as a factor determining perceived product quality whenever the consumer has little previous experience with the product or the potential risks and uncertainty involved in its use are great (Leavitt, 1954). Research has shown that where price and quality perceptions are the only variables measured, there was a positive correlation between the two (McConnell, 1968; Gabor and Granger, 1966). However, price becomes less important as a quality indicator when other product quality cues such as brand name (Gardner, 1971) or store image (Stafford and Enis, 1969) are present. It would be expected that price would be an important quality indicator in the informal sector due to the absence of brand names and store image.

Correlation studies based on market measures, such as list prices and consumer rankings, have shown a relatively weak relationship between quality and price. Durable goods have normally displayed a stronger relationship between quality and price than non-durables. This is probably because consumers are able to make informed decisions about quality in such markets, though other factors such as complexity, lack of price information and processing time required may interfere with accurate knowledge of prices.

Consumers appear to depend more on price as a quality signal in some product categories than in others. For example, in certain categories of clothing, price is regarded as an indicator of quality while higher prices of fruits may not be taken to mean higher quality. The low price of Japanese cars does not diminish the well established perception of quality in the category. An important factor may be the extent of price variation in a category. In packaged goods where the products differ little in price, the consumer may not attribute higher quality to product that cost just a little more than those of competitors.

3.6.3 Advertising

Milgrom and Roberts (1986) relate the level of advertising to perceived product quality. The basic argument holds that for goods whose attributes are determined largely during use (experience goods), higher levels of advertising are taken to signal higher quality. Schmalensee (1978) argued that the level of advertising, rather than

actual claims made, informs consumers that the company believes the goods are worth advertising. Supporting this argument is the finding that many subjects in an exploratory study by Zeithaml (1988) perceived heavily advertised brands to be generally higher in quality than brands with less advertising.

Wants often have multiple origins, one of which is the self-interested sales effort by producers. Some wants that are created by sales efforts have an ambiguous relation to quality, whereas others do not. It is, of course, natural for producers to enlarge the horizon of consumers by calling their attention to new ways of meeting old needs and even stimulating the growth of new wants.

Theoretically speaking, advertising should play an important role from the standpoint of both consumers and producers, informing consumers about new products or services, product features, price and availability. Unfortunately, the problem of consumer dissatisfaction with new products or services frequently originates from deceptive advertising and promotion. The consumer may be deceived equally by what is said as what is not said. For example, when a car is advertised as having five speed gear box, the consumer may infer that the car has a high power and is fast.

If a consumer is led to believe, by advertising or by inference, that a product or service will do something it never was intended to do, that represents “quality attributable to expectations”. When quality is considered in terms of its ultimate requirement to satisfy needs, it is clear that expectations cannot be ignored. It would be wrong to ignore

these expectations generated by advertising, labels and instructions in judging product quality.

Advertising of formal sector products also made in the informal sector has several effects on the consumer. First, it raises the consumers' expectations of the informal sector products' quality. Secondly, the consumer may adopt the information gained in the advertisement in their evaluation of these products, thus making the formal sector a bench mark against which these products are judged.

3.6.4 Consumer Influence

The importance of consumers influence on manufacturing is central to the study of product quality. The consumers' choice of products in turn is influenced by many variables and in most cases consumer tastes and preferences are difficult to convert into production specifications. In any case the producers are often rather ignorant of consumers' tastes and the influences behind those tastes. The perceptions of designers and managers are often mistaken for consumer perceptions leading to production of low quality products though they meet product specifications. In the informal sector where the use of specifications is not common, the consumer judgement becomes a viable alternative for evaluating product quality .

People are simply not conditioned to expect a high level of customer care in their private dealings and hence do not have models that transfer easily to business or work

context. Serving a customer may be confused with servitude which negates the principle of good customer service which is to ensure his satisfaction. Deming (1986) argued that it will not suffice to have customers that are merely “satisfied”. An unhappy customer will switch, unfortunately even a satisfied customer may also switch, on the theory that he could not lose much, and might gain. Profit in business comes from repeat customers, customers that boast about your products and service, and bring friends with them.

Consumers do not always have information on which to judge the quality of products that they consume. The little information that consumers have come from a host of sources whose objectivity is questionable. This information creates impressions that eventually have a great influence on consumer choice. It is with this realisation that producers should not take consumers choice for granted.

Despite the studies that have been undertaken on consumer behaviour, little has been done to determine the consumer ranking of the element of quality and their relative importance in judgement of product quality. In addition, it not known whether the consumers influence quality of informal sector products. This information would important in the design of any measures to improve quality in the informal sector.

3.7 Approaches to Achieving Quality

In this section, we discuss the various approaches to quality control with a view to assessing their applicability to the informal sector. The approaches will be reviewed first and their relevance to the informal sector will be dealt with later.

As a concept, quality has been with us for millennia. Only in recent times has it emerged as a formal management function. In its original form, it was reactive and inspection oriented; today, quality-related activities have broadened. Once the exclusive province of manufacturing and operations departments, quality now embraces functions as diverse as purchasing, engineering, and market research.

Most approaches to quality control have emerged gradually, arriving through steady evolution rather than dramatic breakthroughs. The major approaches are discussed below.

3.7.1 Operator Quality Control

In the eighteenth and early nineteenth centuries, quality control as we know it today did not exist. Most manufacturing was performed by artisans and skilled craftsman or by journeymen and apprentices who were supervised by masters at their trade. Goods were produced in small volumes. Parts were matched to one another by hand, and after-the-fact inspection to ensure high quality was conducted informally. A well

performing product was viewed as the natural outgrowth of reliance on skilled tradesmen for all aspects of design, manufacturing, and service.

Despite its application in activities which require custom-made products, a one-at-a-time kind of product, this approach has very little application in activities where products are produced in greater numbers because it cannot ensure uniformity.

3.7.2 Inspection Quality Control

As volume increased, parts could no longer be fitted to one another by hand. The process required a large pool of skilled labour which was both costly and time-consuming.

Individuals performing a similar task were grouped so that they could be directed by a foreman who then assumed responsibility for the quality of their work. The manufacturing system became more complex and involved a large number of workers reporting to each production foreman. As a result, the first full-time inspectors appeared on the scene. Thus formal inspection became necessary only with the rise of mass production and the need for interchangeable parts.

From a quality control standpoint, the key breakthrough was the development of a rational jig, fixture and gauging system in the early 1800s. The jig and fixture gave the workman the tools to produce standard parts while the gauging system gave inspection a new respectability, for activities that were previously conducted by eye were replaced

by a more objective and verifiable process. Two inspectors using a gauge were much more likely to reach the same result than two who were relying on personal judgement alone.

Inspection activities were linked more formally to quality control by the publication of “The control of quality in manufacturing” (Radford, 1922). For the first time, quality was viewed as a distinct management responsibility and as an independent function. The purpose of inspection was defined as *exercising the duty of viewing the work* closely and critically so as to ascertain the quality, detect errors, and present them to the attention of the proper persons in such a way as to have the work brought up to standard (Radford, 1922).

Throughout, the emphasis was on conformance and its link with inspection. Quality was viewed as the uniformity which resulted when a manufacturer adhered to his established requirements.

Though this approach was and is an improvement on operator quality control it suffers from several drawbacks. First, it does not address itself to the consumer requirements since they are supposed to be taken care of by established requirements. However, in fact producers requirements often do not represent consumer requirements. Secondly, this approach does not address itself toward the issue of improving quality. If the products meet these requirements, then the system is left as it is though quality is a dynamic feature. Lastly, inspection cannot ensure production of quality in the first place. Inspection ensures only that what goes to the consumer is not defective, it does

not necessarily reduce the amount of rework nor the number of rejects from the production line. The cost element is largely neglected in this approach.

3.7.3 Statistical Quality Control

The publishing of “Economic Control of Quality of Manufactured Product” by Shewart gave the quality discipline a scientific footing for the first time. Shewart (1931) recognised that variability was a fact of industrial life and could be understood using the principles of probability and statistics. The issue was no longer the existence of variation but how to distinguish acceptable variation from fluctuations that indicate trouble. The development of process control charts ensured that genuine problems could be distinguished from those due purely to chance.

Statistical process control uses two control charts to ensure quality in manufacturing, the sample mean (\bar{X} -bar) chart and the sample range(R) chart. Control limits are established for both charts based upon the process performance. Samples of purchased and in-process parts are taken and measured to check if they lie within their control limits. Over time the trends of samples are analysed to detect trends which may predict the disposition of the process. In most cases, problems are diagnosed and resolved before many substandard parts are produced, thus reducing scrap and rework.

The variability of the manufacturing process is first checked against control limits. If the sample range falls outside the control limits, the process is out of control. The

variability in the system must be in control in order to have valid limits on the X-bar chart. An out of control X-bar and in control R-chart usually indicate that readjustment or re-calibration to target is necessary.

Statistical process control can be used for several basic functions, namely:

- (i)maintenance of a desired degree of conformance to product design.
- (ii)increasing outgoing average product quality.
- (iii)eliminating any unnecessary quality checks.
- (iv)uncovering and decreasing the occurrence of defective purchased materials from vendors.
- (v)reducing returns from customers.
- (vi)reducing scrap and rework rates.
- (vii)meeting contractual requirements.

Another advantage of statistical process control is that most of the costs of quality that the approach aims to minimise are measurable so it can be cost justified. Obviously, there is a limit to the desirable amount of quality. As the quality checks and conformance specifications are tightened, cost rise. The aim of an effective statistical process control programme is to minimise the sum total cost of producing a satisfactory product. For example, extremely tight control limits increase the quality of

parts throughout the systems, but increase the inspection costs because more out-of-control samples are detected. In contrast, very loose controls allow the manufacturing process to function smoothly, but result in a lower quality finished product. Either of these cases results in suboptimal manufacturing performance .

Although statistical process control can resolve many on-line quality problems it has a myopic focus on purchasing and manufacturing. It holds the traditional view of quality which only embraces conformance to requirements, which are sometimes set arbitrarily. In addition these requirements or tolerances do not necessarily conform to the consumer tolerances.

With statistical process control, if there are zero defects, no effort is made to reduce variability. But if quality is really the object, improvements in the process should be attempted until every part hits the target exactly.

Additionally, statistical process control ignores the strategic importance of product design in producing a quality product. Many companies who use statistical process control techniques during production ignore design and instead focus on quality purchasing control, and post production testing and inspection. It is therefore preferable to use statistical process control in conjunction with other methods that incorporate product design in their quality procedures.

When these shortcomings are considered, it is apparent that while statistical process control does improve quality, the improvements tend to be limited.

3.7.4 Total Quality Control

The slowness of the growth of quality control had little to do with problems of development of the technical and statistical ideas. The stumbling block was the willingness or the ability of business and governmental organisations to take adequate steps concerning the findings of the technical and statistical work.

Recommendations resulting from the statistical techniques often could not be handled by existing decision-making structures. Certainly, they were not effectively handled by the existing inspection groups, or by what evolved as the one-person statistical quality control coordinator, or by the individual design engineers who were given part-time responsibilities for evangelising the quality control subject. The job being done was basically shop-floor inspection, which could never get arms around the really big quality problems as business management itself saw them.

This need led to the concept of total quality control. The total quality framework made it possible to review designs regularly rather than occasionally, to analyse in-process results and take control actions at the manufacturing or the supplier source, and, finally stop production when necessary. Moreover, it provided the structure into which the early statistical quality control tools could be married to metrology, reliability engineering, quality motivation, and the numerous other techniques now associated with modern quality control.

There is a plethora of different definitions and models of total quality control, many developed by academics. They usually agree on central elements, but there is still

substantial amount of confusion and discord about emphasis. Total quality control is seen as a process by some, as a philosophy or structure by others. Newell (1990) who studied a number of companies in different stages of the introduction of total quality control concluded that many managers are uncertain about the distinction between total quality management and a quality improvement programme, and most companies are unable to identify, plan or measure stages of progress toward total quality.

Total quality control is consumer-satisfaction oriented concept. The underlying principle of total quality is to provide genuine effectiveness, and control must start with the design of the product and end only when the product has been placed in the hands of a customer who remains satisfied, and to recognise that quality is everybody's job (Feigenbaum, 1956).

Total quality has also been defined as the cost-effective integration of people at all levels in the organisation to continuously improve the delivery of products and services which satisfy the customer (Graham, 1990). It involves getting information and ideas from everybody in the organisation and putting them to work.

What is widely realised, however, is that a total quality control approach requires a change in the organisational culture, in which a number of core principles may be identified. They include:

- (i) the replacement of mass inspection with a systematic process-oriented approach to the prevention of quality loss and elimination of waste.

(ii) motivation, of employees in the process of improvement.

(iii) training in the use of statistical tools and in improvement techniques.

(iv) a simplified working environment to encourage innovation and good communications.

(v) creation of a responsive corporate culture which is oriented towards the market ,centred around the needs of the customer.

It is interesting to note that some manufacturers make a clear distinction between the product quality assurance system, which they see as a contractual obligation to their customers (and as the responsibility of the quality department), and their effort to embrace total quality concepts, which they view as the search for excellence (and make the responsibility of everyone).

Total quality control requires, as a first step, top management's re-emphasis on the responsibility and accountability of all company employees for design control, incoming material control, product and process control. However, quality, being everybody's job, might become nobody's job. To counteract this, top management must recognise that the many individual responsibilities for quality will be exercised most effectively when they are buttressed and serviced by a well organised department whose only responsibility is product quality

3.7.5 Taguchi Method

One of the most significant developments in total quality control is the Taguchi method, which addresses quality in design and engineering as well as in manufacturing itself. Taguchi's ideas can be broken down into two fundamental concepts: quality loss function and quality design.

The heart of the Taguchi philosophy is the quality loss function. Taguchi defines the cost of poor quality as the "losses a product imparts to the society from the time a product is shipped" (Kackar, 1987). In the loss function, losses to society are defined as deviation from the nominal value. Thus reductions in variability are sought. For example, for any type of car, an ideal quality car is one that works perfectly each time it is used, throughout its intended life and does not pollute the atmosphere. If the car breaks down, the driver would be delayed in reaching his or her destination. The disabled car might be the cause of traffic jam or accident. The driver might have to spend money to have the car towed. If the car were under warranty, the manufacturer would have to pay for repairs. Thus the deviation in performance would cause loss to user of product, the manufacturer and the rest of the society.

Taguchi's definition is strange because the word quality connotes desirability, while the word loss conveys the idea of undesirability. The essence of the definition is that the societal loss generated by a product determines its desirability. The smaller the loss, the more desirable is the product. All societal losses due to poor performance of a product should be attributed to the quality of the product.

Taguchi's definition seems incomplete. How about the losses to the society while the product is being manufactured? The raw materials, energy and labour consumed in producing unusable product are losses to society. The definition should therefore be extended to include societal losses during manufacturing.

The societal view of quality is a profound concept. According to this concept, the aim of quality control is to reduce the societal loss, and the function of quality control is to discover and implement innovative techniques that produce net savings to society. An effective quality control programme saves society more than it costs and thus benefits everybody.

The second fundamental principle of Taguchi's ideas is the achievement of high system quality through design of the manufacturing process. Quality is designed, not manufactured, into the product (Daetz, 1987; Ryan, 1988).

Taguchi calls for a robust design to handle variability in purchasing, manufacturing, production and end use. Taguchi advocates designing a product so that the rated performance is achieved even when variability in production and end use conditions exist. The design process is broken down into three phases: system design, parameter design and tolerance design. System design is the process of applying scientific and engineering knowledge to produce a basic functional prototype design while parameter design is the process of identifying the settings of product or process parameters that reduce the sensitivity of engineering design to their sources of variation. Once the parameter design is completed, tolerances around the nominal must be set for

production. This involves setting the tolerances by considering the effect of parameter interaction. Tolerances design involves a trade off between the customers' loss due to performance variation and manufacturing cost.

Despite its appeal to many companies and practitioners, the Taguchi method has some problems. First, although the basic ideas of Taguchi are simple, the statistical procedures are complex and can be difficult to implement . Many managers and engineers do not have the basic statistical tools essential for the understanding of Taguchi procedures. Even with high speed computers and statistical techniques for simplifying analysis, testing the interactions for off-target parameters can be time consuming and costly in systems with hundreds of interactions (Box and Biageard, 1987).

Secondly, quantifying quality losses in terms of “losses to society” is almost impossible. Typically, the Taguchi method increases overhead without offering benefits which can immediately be quantified (Benton, 1991). On a long term basis, Taguchi approach gives the firm strong competitive advantage which results from increased customer acceptance of superior products.

Finally, some methods that Taguchi employs have been challenged by mainstream statisticians. Graphs of marginal averages have been used to determine the best of each factor, that is, process variable (Taguchi and Yuin Wu, 1979). It is then reasoned that the process should operate with these factor settings to optimise the quantity of interest, such as a signal-to-noise ratio or process mean. This approach has been found

to be somewhat similar to an experiment where factors are varied one at a time to investigate their effect on the response variable. If such an experiment were conducted to determine the setting for each factor, such an approach would not necessarily work unless the interaction effects were all zero (Ryan, 1988). In addition, it has been shown that plots of marginal averages do not plot linearly (Box and Fung, 1986). However, if industry can critically evaluate the statistical shortcomings of Taguchi method, it may result in a viable alternative to conventional quality assurance methods.

3.7.6 Applicability of the Approaches to the Informal Sector

Operator quality control is quite relevant to the informal sector since most of the production is undertaken by craftsmen or apprentices. Goods are produced in small volumes using very basic tools. Quality is ensured by after-fact inspection. The visual quality evaluation makes this approach suitable for the sector.

Inspection quality control is highly applicable to the sector. Many producers engage apprentices and piece-rate workers and their output has to be inspected. The approach could be extended to cover the metal working activities. It could be used as a method of introducing better technology in the sector. Inspection would create a need for measurement and due to standardisation, better technology would be required. The training component could also be improved.

Statistical process control, total quality control and Taguchi methods are not suitable to the micro-enterprises. First, the requirement of statistical knowledge in a sector where participants have only basic education makes it inoperational. Secondly, there are no production runs long enough to generate useful statistical information.

3.8 Measurement of Quality

The ability to make sound decisions on quality is directly related to the availability of adequate measurement processes, the proper selection of the right measurement process for each job, and the correct operation of each measurement process under controlled conditions.

Within the umbrella of measuring quality, one could be attempting to gauge customer satisfaction, appraising company's overall quality, appraising individual's performance, or assessing specific products, services and processes. It is therefore important that any quality definition used must be compatible with feasible measurement.

Some performance characteristics such as those that require subjective evaluation cannot be measured on a continuous scale, either because of the nature of the characteristic itself or because of limitations of the measuring method. The next best thing to continuous measurement is measurement on an ordered scale such as: poor, fair, good, and excellent. Ordered measurements approximate continuous

measurements in the same way that a histogram approximates a continuous distribution

Although ordered measurements are less effective in detecting small changes in quality than continuous measurements, they are more effective than binary measurements such as good or bad. For example, classification of solder bonds as good or bad provides meager information about their quality. A more informative classification would be based on the amount of solder in the joint: no solder, insufficient solder, good solder, and excess solder. Effective quality management requires a well defined purpose of measurement, an appropriate method of measurement and proper interpretation of the results of measurement.

3.8.1 The Purpose of Measurement

Upon first consideration, the purpose of measuring an object may appear to have little to do with the measurement itself. However, the purpose for which an object is measured not only determines the selection of characteristics to be measured, but also determines the way in which each characteristic is defined. This also determines the feasibility of the measurement methods.

The characteristics chosen for measurement depend to a great extent on the objectives of measurement . If we are attempting to achieve greater control of a production process, we need to know exactly what characteristics of the product are influenced by

exactly what control actions on the production equipment. Firms often have much less explicit understanding of the exact relationships that exist between raw material, production technology and the precise characteristics of the product, than the layman might assume.

The matching of the measuring method more precisely to its purpose involves knowledge of a wide range of measuring methods and skill in selecting the right one for the right job. The appropriateness of the measuring methods determines the degree of control that is achieved and the economy of effort. There are many methods for measuring quality and the method chosen usually reflects the approach to quality taken by management.

Many of the characteristics of quality with which we are concerned cannot yet be measured. The finish on a wardrobe, the smell of perfume, are very difficult to define and almost impossible to measure with instruments. If reference standards are prepared and agreed it may not be possible to store them in a way that preserves the original characteristics of quality. When objective standards are not available, the internal standards of some experienced man or group of people, becomes the reference by which other assessors of quality calibrate their own internal standards. The use of personal or group standards as the basis for calibrating peoples assessment of quality raises problems of status, certainty, skill, prestige and responsibility.

A person assessing the quality of products or materials without the aid of instruments or objective standards is faced with at least two kinds of human frailty. He can allow

his internal standards to become uncalibrated and thus inaccurate, but even whilst he is properly calibrated he can still miss or wrongly classify articles which he would have no trouble on identifying if he were able to give them his full attention. He can of course also lie with little fear of detection.

Treating measurement as a production process is valuable because it identifies several potential sources of variability and suggests two possible approaches to measurement assurance, that is, product control and process control.

3.8.2 Defect Levels in Manufacturing

The most commonly used manufacturing-based quality measure is the defect rate, that is, the percentage of the product not in conformance with specifications and thus failing to match pre-established standards. Defective units may function improperly or display obvious deficiencies in workmanship. Both functional and cosmetic problems are involved. Parts may have been attached incorrectly, paint may be blotchy or uneven etc. These are largely deficiencies in conformance, although aspects of performance and aesthetics are involved as well.

Defects cover a wide sweep and vary in seriousness. As a consequence classification schemes have emerged for grouping defects into categories by their expected impact. However, not all defects are equally easy to catch. Defining some defects, for example,

a scratch on a piece of furniture involves elements of discretion, so that the dividing line between acceptable and unacceptable products is hazy.

Defect rates in manufacturing are crude measures of effectiveness, yet they have attracted a lot of attention in recent years. The criterion of defect levels in production is useful for many purposes. It is easily understandable and requires little calculation and analysis. It may form the foundation for charts and graphs to inform and motivate the workforce in quality improvement, and provide a basic level of information for decision support.

Defect level may be used within the quality system in order to determine the necessary allocation of resources for process improvement, or it may be used to ascertain the quality performance of the manufacturing system itself, by comparison with other departments, or plants.

There are two major disadvantages of defect level as a criterion of effectiveness. There is a lack of consequential cost information of defect levels and there is no formal method of distinguishing between important defects and those resulting in only negligible quality loss. In addition, there is no consideration of the costs involved in the operation of the quality system, including the defect level assignment itself. In a practical industrial situation, the users of defect level information will form intuitive judgement or perform ad hoc calculations of cost as an aid to decision making.

Despite these drawbacks, defect level data are often used in practice for the reasons given earlier.

3.8.3 Cost of Quality

Quality costs are defined as those costs associated with non-achievement of product or service quality as defined by the company. It is the cost of poor quality products or services. Any cost that would not have been incurred if quality was perfect contributes to the cost of quality. The objective is to bring the total cost associated with poor quality to a minimum while maintaining satisfactory quality levels.

Quality cost embraces four elements:

- (i) appraisal costs - the costs involved in inspecting and monitoring the quality of manufacture.
- (ii) prevention costs - the costs incurred in investigating and preventing defects in production processes, quality planning, training and introduction of improvement programmes.
- (iii) internal failure costs - internal costs of failing to achieve quality standards, including disruption, concessions, scrap and rework costs.
- (iv) external failure costs - the costs incurred due to failure of products after they are received by the customer, including the consequential losses of reputation, goodwill and future business.

In the traditional analysis, these costs are totalled to give the overall cost of quality, a concept usually attributed to Juran (1979). The widely accepted theoretical model

representing the relationship of cost to quality level, showing an optimum quality cost is shown in Fig. 2.

This relationship is difficult to validate in practice, as the quality level of production is not an independent variable with which it is easy to experiment and very few companies will have such data available. Alexander (1983) reports that an attempt was made to demonstrate the validity of the cost of quality model using quality cost data from a Marconi Avionics plant. The attempt failed: despite the collection of a large amount of data, the researchers were unable to confirm a relationship of the form illustrated, or to find any other consistent pattern.

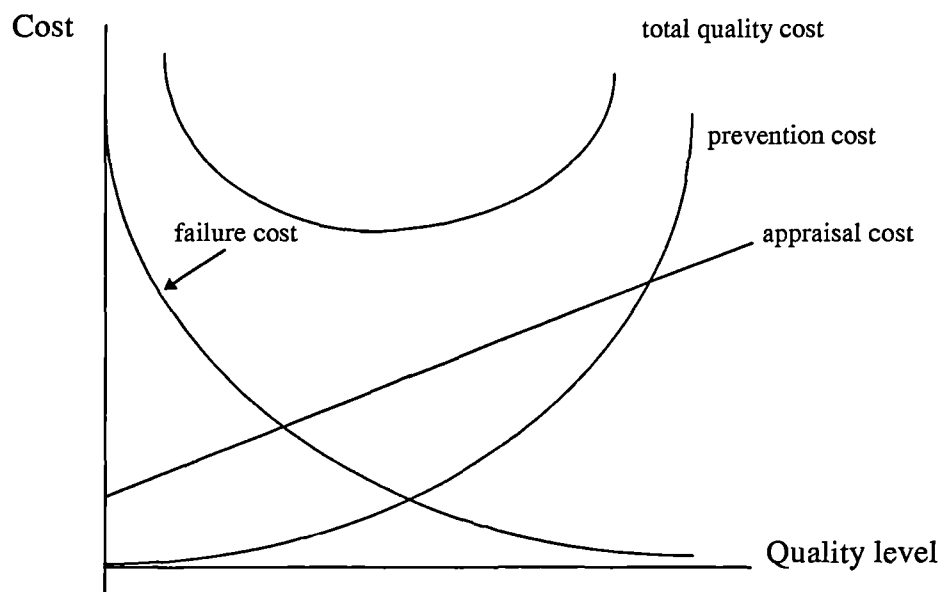


Fig. 2 :Juran Quality Cost Model

Schneiderman (1986) and Bajpai and Willey (1989) have suggested that a different relationship between prevention cost and quality level might be expected at very low defect levels, where Juran's model assumes that prevention costs will reach very high

levels. This assumption means that the total quality cost is not at minimum when quality is perfect - a conceptual problem which has long troubled the advocates of zero defects. Bajpai and Willey (1989) envisage the relationship illustrated in Figure 3. This relationship differs from Juran's in that as quality level rises, the appraisal cost is seen as falling (rather than rising) and prevention costs do not increase so dramatically. It must be emphasised that the costs are represented on these graphs by curves which have not been derived from mathematical analysis of any data.

The Juran's model seems to suggest we should maintain quality at the level where the total quality cost is lowest since any further improvement will increase overall quality costs. This contradicts the idea of continuous quality improvement.

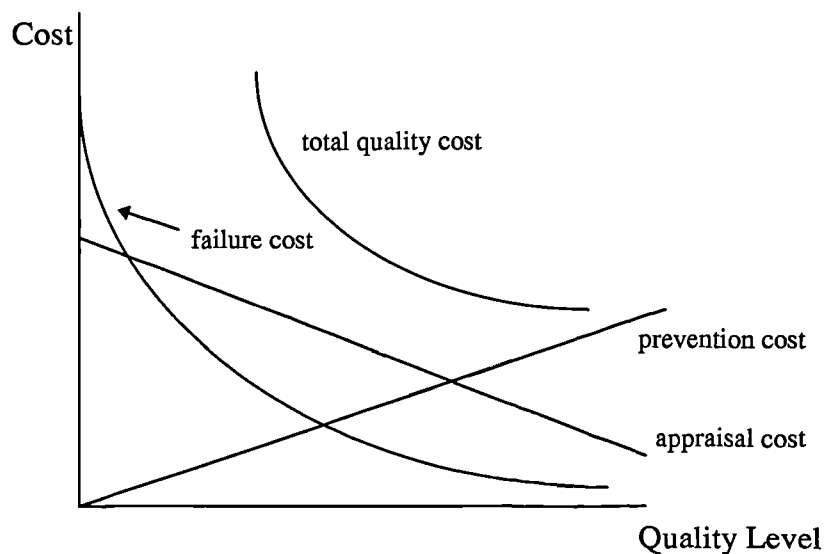


Fig. 3 : Bajpai and Willey Quality Cost Model

The Bajpai and Willey model overcomes this hurdle since it suggests that as quality level improves the total quality costs fall. This seems to be a more convincing model though its applicability has not been established.

The importance of the cost of quality concept has been emphasised by a number of quality gurus, such as Crosby (1979). He argues that when used as a management tool for the purpose of focusing attention on quality management, the concept is a positive blessing and serves a unique purpose. Used as an accounting measurement, like calculation of nuts-and-bolts inventory, *it becomes a useless pain*.

Besides the above shortcoming, it has been pointed out that the components of quality costs do not directly reflect the incidence and distribution of costs in manufacturing. In addition, the resources required for a practical quality cost data collection and analysis exercise are often considered too expensive.

Quality costs are not assessed effectively by conventional accounting systems. Many costs associated with quality activities find their way into manufacturing or general overheads. In addition, some of the costs are particularly difficult to estimate, for example, consequential losses of reputation, goodwill and future business.

3.8.4 Value Loss Functions

The best known explicit value loss function is that due to Taguchi (1981), who proposes that there is a loss to society due to a product characteristic deviating to any

extent from the nominal design characteristic. Taguchi's value loss function takes the form of a quadratic curve, as shown in Fig. 4. It is obtained by means of certain mathematical assumptions which have not remained unchallenged, though the results have been found to be useful in many circumstances.

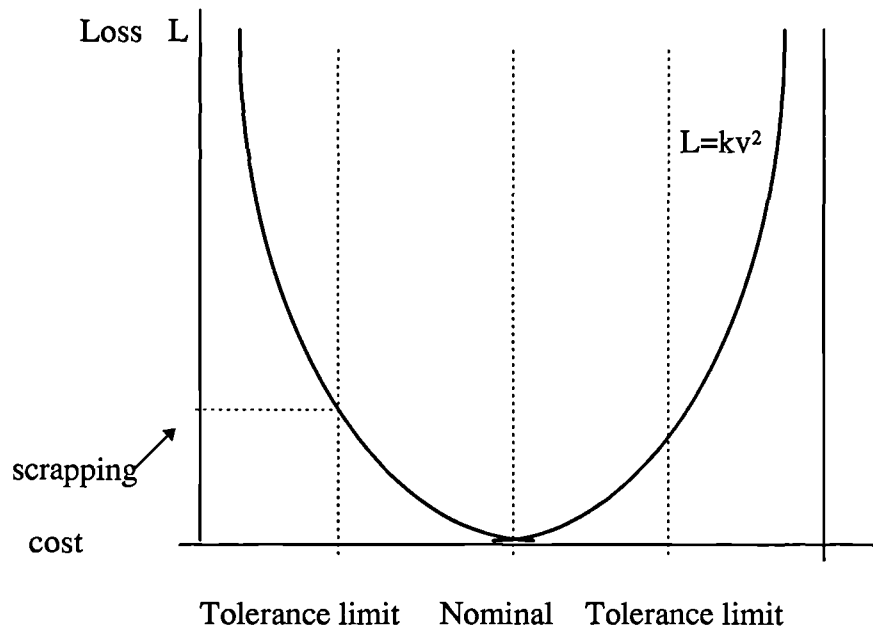


Fig. 4 : Taguchi Value Loss Function

The notion of loss to society is difficult to relate to our traditional accountancy concepts but the loss to the company and to the customer due to poor quality can be seen in terms of an overall loss, composed of the internal and external failure elements of the total cost of quality, as discussed earlier. However, some elements of external failure costs remain difficult to estimate.

The loss function does not give indication of preventive or other operating costs of the quality system.

3.8.5 Producer-based Quality Measures

Producer-based quality is measured by the amount of some desired ingredient or size of some attribute. In most circumstances a product will have many desirable attributes. Unless a few dominate, the analyst can be swamped with measures. One can try to select the most meaningful measures which should be those of main interest to the product's user, and the main reasons for the development of the product. Besides the problem of selecting the critical parameters, another problem of producer-based quality measures is that for many attributes there may be no method of measuring them since they are not necessarily ingredients of the product. In addition, for some products it is hard to determine the amount of attribute that is desirable. Another problem is that trade offs may not be recognised.

One approach, when too many individual attributes exist, is grouping the measures into an overall simple measure. This could be done by use of indices. Indices are artificial, but supposedly not arbitrary. A quality index can be created by identifying parameters of interest, establishing measures, weighting the measures and combining them into one. However, an index figure is generally not meaningful in absolute terms. It shows trends and the results can be compared to bench marks. However, if the components of

the index are not chosen carefully, it can be an arbitrary number not particularly good as a measure of quality.

3.8.6 User-based Measures

The precise mechanics of how quality perceptions emerge from such raw materials such as published data, word-of-mouth publicity, and customer experience, to produce a quality image are only dimly understood. Quality remains a complex and elusive concept and involves multiple attributes. These attributes are weighted, often with limited information, and somehow integrated into an overall quality image.

Users employ different definitions of quality and the resulting product assessments depend heavily on the breadth of their experience.

Analysis of the multiple dimensions of quality, as discussed earlier in this chapter, provide greater insight into how judgements about quality are formed. Performance usually head the list of desired quality characteristics. Consumers frequently purchase products to fulfil specific needs and then judge them by how well those needs have been met. Product performance is also easily monitored and of all the elements of quality, it is the one for which experience is the surest guide.

A number of companies use customer complaint levels, service calls or warranty claims to indicate the quality performance of a product or of the whole organisation. These measures seem superficially attractive, because at first sight they would appear to be

directly related to customer satisfaction - normally the quality goal of the organisation. However, customer reactions to quality performance will be affected by a multitude of factors connected with attitudes, expectations, and the changing competitive position with the regard to both price and quality. Customer satisfaction may be more effectively measured by surveys of recent customers, or investigations of the level of repeat sales than by complaint levels.

3.8.7 Measurement Methods and the Informal Sector

The measurement methods discussed above have been applied to large scale manufacturing. However, not all of them are directly applicable to the informal sector due to the level of development of the sector's activities. Defect levels, cost of quality and value functions are not applicable to the informal sector due to their level of complexity.

The user-based measures could be most useful to the informal sector despite their subjective nature. Of the user-based measures, customer satisfaction measured by surveys of customers seem to be most suitable for this research. The customers are best placed to judge the quality of what they consume. Complaint levels, service calls or warranty claims are only relevant to large enterprises.

The problem of translating customer satisfaction into an appropriate performance quality measure can be overcome. Using Juran's definition of fitness for use, we could

divide fitness into two categories: features and freedom from deficiencies (Juran, 1989). Features, he stated, cost money and attract customers, whereas freedom from defects saves money and keeps customers. In this respect, consideration would be given to customers valuation of “goodness” of the product and the affordability.

3.9 Relevance of Quality Concepts to the Informal Sector

The informal sector activities involve constant interaction between the consumer and producer. For some activities the producers has to match the products to the specifications given by the consumer while for others the interaction occurs at point of sale. This level of interaction makes the consumer more central to production in the sector than in large enterprises. This orientation makes the user-based definitions more applicable to the sector more than the others.

The sector aims mostly at the low-income population. The products have to fit the purpose they are meant for at a price that is affordable to this section of the population. This makes the value-based quality definition most attractive and applicable.

The production processes are mostly craft based. One worker (or at least very few workers) is responsible for the manufacture of the entire product and therefore each worker can totally control the quality of a product. In this kind of set up, operator and inspection quality control have greater relevance than statistical process and total quality control whose conformance to specifications and requirement for statistics makes them inapplicable to the sector.

Any measurement of the sector that is producer-based is not likely to succeed. Unlike large organisations, micro-enterprises do not keep records of quality-related activities. In addition, sales are not restricted to a few buyers where the number of complaints could be used as a measure of performance. The consumers can judge the quality of the sector's products better due to their experience. In this way, areas of improvement can be identified, and hence the adoption of consumer survey as a method of quality measurement.

The concepts and methods reviewed in this chapter are by no means the only ones that could be applied to this kind of research, however they represent a cross-section of the methods used in the formal manufacturing. At the micro-enterprise level of operations, the methods used in the formal manufacturing are not applicable. This could be due to the financial outlay that is involved or the expertise required.

CHAPTER FOUR

QUALITY IN THE INFORMAL SECTOR - KEY ISSUES FOR RESEARCH

In this chapter key issues for research will be discussed, leading to propositions that will be tested in this study.

4.1 Focus of Research

The informal sector is expected to provide employment opportunities for over six million Kenyans by the turn of this century. This means that the number of micro-enterprises will have to increase enormously and individual micro-enterprises will also need to expand. In addition, the market for informal sector products is supposed to expand to absorb the increased output.

The expansion of the sector may occur only if the environment in which the micro-enterprises operate is improved to attract more people to set up businesses. In addition, more incentives need to be offered to those wishing to join the sector as employees.

Expansion of individual micro-enterprises will require new investments in skills, facilities, tools and equipment. The technological capability of the enterprises will need to be developed to spearhead this expansion, which in turn will require an expansion of the market for sector's products.

This expansion will need to occur in the consumption both of goods currently being manufactured and of new products.

Kenya's manufacturing sector is characterised mainly by large firms and micro-enterprises with a very small segment of small and medium enterprises. The informal sector is viewed by many as a seedbed for generating entrepreneurial and manufacturing capabilities to steer the growth of some micro-enterprises toward filling this "missing middle".

In the past ten years, the above expectations have led to various studies of the sector (House, 1984; Ndua and Ng'ethe, 1984; McCormick, 1988a; King and Abuodha, 1991). Most of these have focused on structure, training and obstacles to the growth of the sector. They have neglected the area of production. As a part of this neglect, market expansion for informal sector products has not been studied. This perhaps has been the result of the widespread belief that the obstacles to the success of micro-enterprises arises mainly from lack of capital resources. However, Livingstone (1991) noted that there is a complete absence of technology improvement and product development in micro-enterprise programmes. In addition, King and Abuodha (1991)

and Livingstone (1991) concluded that products made in the sector are characterised by low quality. In this thesis, these conclusions will be put to test.

4.2 Poor Quality or Quality for the Poor

Product demand is largely controlled by trends and demand patterns generated by the formal sector. What the consumer often demands is a formal sector product at a low price. Thus the micro-producer is faced with limited choices. The most obvious option is to try and adapt the formal sector product to his production process. This reliance on product adaptations brings its own shortcomings and the resultant poor quality.

Livingstone (1991) argued that informal sector supplies rough-and-ready goods such as furniture, household utensils and garments for the mass market while leaving the often much smaller quality market to the formal sector. He concluded that there is greater scope for the micro-enterprise manufacturing to substitute for formal sector output if quality, range and attractiveness of products can be improved.

A principal reason why micro-producers are able to substitute for large enterprises is that in a market dominated quantitatively by low-income consumers, they offer cheap goods and demand only very low prices for their services. House (1984) reported that poor households in Nairobi, and by inference in other urban areas and in rural Kenya also, buy low-quality, relatively inexpensive furniture from the sector. He argued that low-quality and low-price products are appropriate for low-income households since they are most likely to embody only those essential characteristics that are relevant to

satisfying basic needs. As incomes rise, preferences move in favour of more expensive and high quality goods from the formal sector. These formal sector goods have characteristics over and above the minimum and hence they are considered to be of higher quality.

4.3 Manufacturing in the Informal Sector

There is no value to an economy in increasing output volumes if the increase is offset by lower quality. Low quality may drive out high quality and the consumer ultimately would incur greater costs over the lifetime of products.

Poor product quality normally is a result of errors arising out of process variation.

Product design, equipment and production techniques, skills and attitudes of producers, production facilities and variations in raw materials are all technological factors that can contribute to such errors. These factors are constrained by environmental characteristics, which could be social, legal, economic or political.

Performance, reliability, appearance and cost of product are all largely determined in the design stage. It is true that poor production and incompetent inspection can reduce the level of quality but the physical means, such as choice of materials, dimensions, tolerance and finish, by which the level of quality is to be attained are determined in the design stage. The design determines the lower limit of cost and the upper limit of value. Changes in design, especially material changes, may lead to poor quality. The

low quality becomes more pronounced where design is superimposed on manufacturing conditions different from those intended by the designer.

The level of investment largely determines the level of technology that a producer operate at, the complexity of products manufactured and the employment pattern. The level of technology in turn largely determines the quality of products manufactured. Initial capital generally comes from very limited family savings, loans from friends or money lenders or liquidation of previous employment. It is practically impossible for micro-entrepreneurs to secure finances from formal sources. Consequently, one of the salient features of the manufacturing process in the micro-enterprise is the intensive use of simple tools and manpower. The level of quality expected of such manufacturing process cannot be high.

Producers making goods in the informal sector are eager to reduce the prices of their products relative to those of competing ones from the formal sector. The use of poor quality materials and of low level skills enables them to achieve this objective. However, in the process, the quality of their products suffers.

The factors above as well as their interactions contributes to both the potential quality of a product and the achievement of that potential in manufacturing. Figure 5 shows three quality “goals” and the primary factors affecting them.

There is a basic dichotomy between potential quality and actual achievement of that potential. Potential quality is the quality that the process, as designed, is capable of achieving under ideal conditions. It is a function of many design and input variables,

some technological and some behavioural. It places an upper-bound on the output quality.

The achievement of this potential quality depends upon techniques of management. It is a function of the motivation of the producer, workmanship values, demand for quality, job characteristics and operations planning and control.

Quality Goals

Primary Factors Affecting Quality

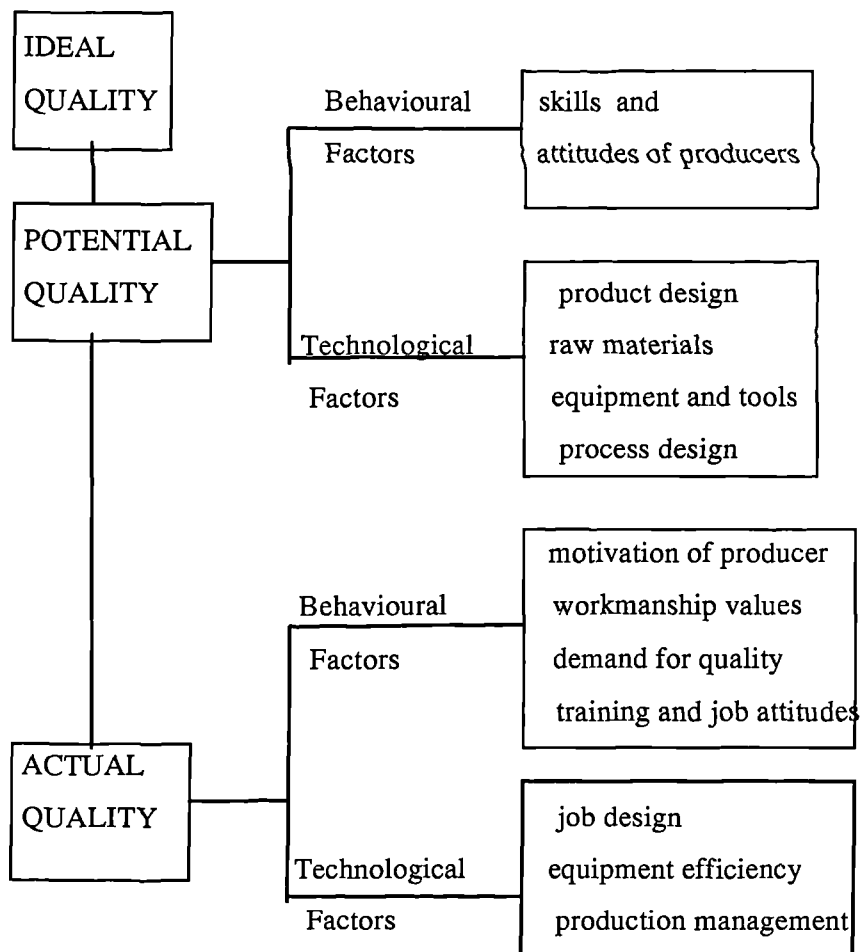


Fig.5 : Quality Goals and Factors Affecting Quality.

Unlike large enterprises, where activities are divided among many people, most functions in the micro-enterprise are centred or carried out by a single individual, usually the owner. Thus the owner is involved in production (direct production, supervision and quality control), purchasing (searching, selecting, negotiating and delivering materials), marketing (looking for markets, selling, costing and talking to customers), and training (instructing and assessing apprentices). These roles are not usually delegated. Functional conflicts occur because the owner is sometimes required to be in several places at the same time, for example, looking for materials as well as looking for potential markets. In other cases, he is required to undertake several functions at the same time, for example, instructing apprentices as well as making products. Quality may suffer because the owner may not fulfil his training function adequately and hence products made by apprentices during and after training may be of low quality. Further, the owner may not be able to check the quality of products made and hence institute remedial measures to prevent similar occurrences.

We are all influenced by the way people around us look upon us. We believe that informal producers are concerned about how society regards them and hence positive social attitudes would be expected to motivate them to produce goods of high quality. In reality, informal sector products are regarded as inferior and this may have an influence how micro-producers look at themselves and hence the quality of their output.

Workmanship depends on the personal value systems, and the feeling of responsibility of the producer. The community influence on workmanship is expressed by the consumers' demand for quality. This in turn is expressed through consumer tastes and behavioural patterns. However, in a society where there is limited consumer choice, it is questionable how consumers can influence the quality of what is produced.

Job attitudes are largely determined by the status of those involved in production. The low wages and poor working conditions may not motivate the apprentices and employees to produce high quality products.

From a diagnostic point of view, an enterprise with poor overall quality may be suffering from one of two ills: achievement of a low potential or failure to achieve a high potential. Obviously, these ills demand different remedies. If the problem is a low potential, the production system may need to be re-designed or perhaps a change of inputs is needed. By contrast, failure to achieve a high potential results from a well designed but improperly managed system, requiring operational policies and decisions to be reviewed and revised.

Little is known about the actual quality of informal sector production. Less is known about the potential quality of the sector. It will therefore be useful to know the actual quality of informal production, and the relationship between technological factors and quality achieved. Besides, we know neither how producers regard and evaluate the quality of their products nor how they organise their production and other activities in order to take care of the quality function. In pursuance of these questions, we

hypothesise that manufacturing in the sector is characterised by production of poor quality goods.

4.4 Technology in the Informal Sector

Developing an indigenous technological capability is important because it pertains to the ability of the developing countries to adopt production techniques suited to their domestic resource conditions, rather than directly assimilate less appropriate techniques through technology transfer from other countries.

The growth in awareness of the role of technology in development has brought about increased need for raising the level of technological capability. Technological capability is required in order to raise our agricultural and industrial production which is necessary in uplifting the standard of living of the people. One approach which is still popular is technology transfer from the developed to the developing countries. Within this approach there has been research into the effectiveness of the transfer and improvements have been made to the mechanisms and terms to transfer. However, too frequently this approach has resulted in the importation of machinery and inputs such that the sole indigenous contribution is that of unskilled labour. This has resulted in the underdevelopment of vital linkages within and between sectors which have inhibited overall industrial development. Moreover, the importation of foreign production technology has often been accompanied by the importation of finished products from the same countries which undermine the local product and knowledge systems.

In the last decade, there has been interest in “South to South” transfer of technology. This started from the basic premise that newly industrialised countries had developed or scaled-down technologies that were now suitable for other developing countries. By means of South-South transfers, agencies and governments had sought to reduce the adverse effects of technology from the North. The effects of this approach have not been felt on any significant scale.

An alternative approach accords a more central role to indigenous technology (Girvan, 1978). According to this strategy, the relationship between technology and development should be tied up with the degree and pattern of use of local resources, and the extent to which these resources are used to provide basic material necessities of people, either directly or indirectly. The adequacy of the relationship between technology and development should therefore be measured by the degree of local resource use and the extent of needs satisfaction. According to this approach, interventions should primarily address the weakness of indigenous technology itself and the satisfaction of basic needs. However, this approach has been criticised by those who believe that the technology gap between high technology and indigenous technology is too wide to bridge and that high technology is required to produce exportable goods. For such analysts, the seriousness of the foreign exchange crisis hitting most developing countries requires a focus on export markets rather than meeting basic needs.

Studies of micro-enterprises have treated technology as an external factor or as a “black box” in the internal conversion process. Part of the blame for the superficial treatment of technology in the literature lies in the writers and researchers themselves. Economists and development practitioners have been drawn to the more tangible and theoretical aspects of micro-enterprises due to their discomfort with the pervasive nature of technology. Conversely, writers on technology have been slow to characterise the art and practice of technology in the informal sector.

The studies of Amin(1989) and Khundker(1989) have shown that micro-enterprises are generators of technology, thus revealing the innovative strain of micro-entrepreneurs. Despite this acknowledgement, the relationship between technology and manufacturing in the sector has not been investigated. Further, the influence of technological capability on the prevailing quality of output has not been studied.

Innovation involves, on one hand, the recognition of a need or precisely, a potential market for a new product or process. On the other hand, it involves technical knowledge, which may be generally available and may include new scientific and technological information, the result of original research activity.

Following recognition of a potential market for a new product, existing processes, methods and skills may be used for satisfying it. On the other hand, this may involve the use of new processes and techniques. Where use is made of old processes and methods, it will not lead to the expansion of existing knowledge and skills and hence no addition to the technological capability of the micro-enterprise.

Where innovation involves new technical knowledge it means that the micro-enterprise could use this knowledge to expand its technological capability, widen its range of products or improve the quality of products manufactured.

Despite our acceptance and recognition of the existence of innovative capability in the informal sector, our knowledge of innovation in the sector is sketchy. The dominant strain of innovation is not known and therefore the potential contribution of innovation to the vertical growth of the sector is not known. An in-depth analysis of innovation in the sector will be made in order to gauge its potential in evolving new technology hence widening the technological base of the nation.

4.5 Consumer Ability to Evaluate Quality

We have already shown that quality is a multidimensional entity and that ideally all the elements of quality should be combined to produce a product's quality image.

However, in practice the consumer pick a few attributes or even surrogates for them and use them to serve as signals of overall product quality.

The consumers do not use all the elements of quality in their product choice because of many reasons. First, at the point of purchase, not all attributes are measurable and hence the consumer use prior expectations and outwardly visible attributes to serve as the basis of judgement. Secondly, other attributes such as trade names and store image,

are incorporated in forming product quality judgement. Finally, consumers often do not have information about the quality of products prior to purchase.

With regard to informal sector products, consumer judgement of quality is also affected by other factors. First, there are no trade names that can be incorporated in forming judgement on quality. Secondly, the producers are often able to manipulate the consumers through price reductions.

Despite the many studies of consumers in different societies, our knowledge of the relative importance of the various elements of quality in shaping their behaviour is limited. Coupled with this, we are not sure that consumers are able to evaluate quality.

4.6 Producer Motivation

In the business literature, manufacturers are assumed to be motivated by profit maximisation to produce good quality products. The nature of competition supposedly makes them produce high quality products in order to maintain market share. Aleke-Dondo (1986) concludes that the intense competition among informal sector operators is an effective promoter of high quality production and design differentiation. Demand could also induce high quality production. This could be brought about by the market demand signalling profitable opportunities or it could be depressed market demand creating pressures for enterprises to produce high quality goods. The venturing into new areas of production would induce micro-enterprises to produce high quality

goods to ensure acceptance and the maintenance of market share. On the other hand, a depressed market demand could pressurise producers in manufacturing goods of high quality in order to survive. Usually manufacturers of poor quality products would fall by the wayside and the few producers of high quality goods would remain.

On the other hand, Sethuraman (1981a) believes that micro-entrepreneurs set up micro-enterprises to generate employment for the participants rather than for profit maximisation. It is therefore not known what influences the producer to manufacture goods at the present level of quality. It is thus hypothesised that micro-entrepreneurs lack incentives for producing high quality products and this has led to the production of poor quality goods.

4.7 Product Value

The concept of value is essential when considering the factors that attract customers to a particular product. Buyers are satisfied when they pay a reasonable price for a product that performs satisfactorily. Hence, market penetration or growth is closely related to the degree to which products convey value to the consumers. It is postulated that the poor market penetration of informal sector products is due to customers not getting value for their money.

4.8 Interventions to improve quality

The interventions reviewed in Chapter 2 on quality improvement have not been applied to micro-enterprises in Kenya. Their impact and acceptability is therefore unknown. Interventions involving process improvement, product improvement, introduction of new products and trade-marking will be applied in order to assess their suitability.

4.9 The Propositions

The following propositions are a product of an interplay of processes consisting of literature review, intuitive insight, logical deduction and induction from personal experiences. They cover both the consumers and producers in order to create the total picture of quality in the informal sector production. The governing propositions are given below:

- (i) Manufacturing in the informal sector is characterised by poor quality products;
- (ii) The low level of technological capability is the major cause of production of low quality;
- (iii) Consumers are unable to evaluate quality and use price to judge quality thus neglecting product performance, aesthetics and other elements of quality;
- (iv) The micro-entrepreneurs lack incentives for producing high quality products and this has led to production of poor quality goods;

(v) Consumers do not get value for money by purchasing from the informal sector.

(vi) Interventions are required to improve quality of the informal sector products.

These propositions are a reflection of the research objectives as stated in the introduction.

The first proposition represents a deliberate attempt to reflect existing views on quality of informal sector products.

The second proposition focuses on the prevailing view that micro-enterprises use outmoded technology and hence produce poor quality goods. This contrasts the view that micro-entrepreneurs are innovative, use relatively labour-saving technologies and contribute to the technological base of the country.

The third proposition stands on the premise that consumers do not have information on informal sector products and hence they are unable to evaluate their quality.

The fourth proposition suggests that the micro-entrepreneur need to be motivated to manufacture high quality products. This contrasts the view that being in production, his survival is an incentive for him to produce high quality goods.

The fifth proposition rests on the premise that the micro-producer charges a high price for low quality of goods.

The last proposition postulates that without technological interventions, the quality of the informal sector products will not improve.

CHAPTER FIVE

RESEARCH METHODOLOGY

There are inherent difficulties in conducting empirical research in the informal sector.

These stem from the heterogenous nature of the sector and the complex interrelationship of factors at play in the sector. In addition, each micro-enterprise is in a real sense an extension of the personality of the owner and therefore a study of micro-enterprises is a study of micro-entrepreneurs and their environment.

Research purporting to seek improvements in current practice and recommend interventions relating to quality must adopt a systematic analysis of the technological factors at play, yet give due consideration to socio-economic factors and interface relationship. That technological factors provide only a partial analysis is accepted. In addition, it is recognised that while the technical tools of quality in formal manufacturing are well developed, its theory and practice lag behind. The concept of quality itself is dimly understood and its links to market share, price, cost and profitability are unclear. Measurements are thus complex, and anecdotes remain the source of most recommendations. It is in this light that the research methods in this chapter were adopted.

5.1 Scope of Study

5.1.1 Choice of Metalworking Activities

During the period 1990-91, a series of seminars, designed to highlight problem areas in Kenya's informal sector, were organised by ILO and the Ministry of Economic Planning and National Development in various locations in the country. Technology was identified as one of the major ones.

In the seminar on technology, there were several recurring propositions. First, if the sector is to grow, it has to develop technologies appropriate to its circumstances. Secondly, the growth of the sector is tied to its capability to adopt technologies developed elsewhere. Finally, it is necessary to develop stronger linkages within informal sector activities and with the rest of the economy. These themes highlighted the need for research in this area.

In an exploratory survey of the sector in Nairobi, three major manufacturing activities were identified. These were metalworking, textiles and furniture making.

Metalworking was chosen as the field of study for several reasons. First, metalworking activities appeared to offer the best scope for the study of the role of technology since they entail more use and generation of new technology and more complex internal linkages than the other two. Secondly, metalworking activities were best placed in presenting a spectrum of technologies being used and those decadent ones resisting demise. Finally, metalworking activities appeared to expose the potentialities and

difficulties in building or strengthening technological capability than the other two manufacturing activities.

My own skills in metalworking also made me lean in that direction. My previous work with micro-entrepreneurs had indicated that having skills in their production processes give a useful point of entry to their world and aids credibility. This gives a researcher some currency in which to trade benefits.

5.1.2 Choice of Location

Initially six main towns in Kenya, namely Nairobi, Nakuru, Nyeri, Nyahururu, Kitale and Embu were selected as the location of this research. The reasons for this selection were many. First, agriculture is a major occupation of the people and there was need to explore the linkages between agriculture and the informal sector which is most direct in the smaller towns. Secondly, the sector had grown so much in Nairobi that there was need to establish whether its growth outside Nairobi was linked to its distance from the capital. Thirdly, there was need to establish whether it was area-specific in other ways. Lastly, there was need to relate it to town size.

In the event however, research could not be carried out in all these locations. Funds were not available to sustain this coverage and the political situation in the country at times did not allow extensive travel to some of these areas. These limitations restricted research to Nairobi, Nakuru and Nyeri. However, the presence of such a large informal

sector in Nairobi compensated for the exclusion of the other towns and permitted more concentration on variables other than the geographical one.

5.2 Relevance of Research

Much criticism has been levelled against academic studies. This could be attributed to misunderstandings surrounding the aims of research, its intended audience and perceptions of relevancy. To make research less detached and more relevant to practitioners, there has been emphasis on the need for styles and detailed fieldwork consistent with the nature of the problem studied and the underlying ontological assumptions upon which problems are constructed.

Whitley (1984) defined “relevant” research as making a contribution to changing a situation which is regarded as requiring improvement, arguing that it is necessary not only to understand why the situation arose but also how to intervene in such a way that it is improved. He sees *relevant and empirically-oriented* research as more than “trouble-shooting” and simply addressing problems of current interest to people formulated in their terms. He believes that practically-oriented research does not differ in kind from purely intellectual endeavours but the need to change beliefs, perceptions and practices means that conclusions must be translatable into everyday terms and be acceptable, at least to some extent, to lay audiences.

From the outset, the relevance of this research to the target audience, micro-entrepreneurs and development practitioners, was an important influence on the way it was carried out. It was necessary to ensure sufficient breadth to characterise the environment in which production is undertaken in the informal sector, combined with adequate depth and rigour when researching such specific phenomena as innovation, skill formation, organisation and quality.

5.3 Research Method

A review of the literature on research methodology revealed a wide range of personal predisposition among writers towards particular research traditions. Traditionally a gulf is seen to exist between qualitative and quantitative research, with each belonging to distinctively different paradigms (Layder, 1988). The distinctions between the paradigms relate to a number of levels concerning the production of knowledge and the research process: the rarefied level of epistemology, the level of theory as elucidated in the theoretical framework and the level of methods and techniques. There is assumed to be a correspondence between epistemology, theory and method. However, the distinction is most commonly applied at the level of method: the process of data collection and the form in which the data are recorded and analysed.

The most important difference between the two paradigms is the way in which each tradition treats data. In theory, if not in practice, the quantitative researcher isolates and defines variables and variable categories. These variables are linked together to

frame hypotheses often before the data is collected, and are then tested upon the data.

In contrast, the qualitative researcher begins with defining very general concepts which, as the research progresses, change their definition. For the former, variables are the means of the analysis while, for the latter, they may constitute the product or outcome. The qualitative researcher is said to look through a wide lens, searching for patterns of inter-relationships between previously unspecified sets of concepts, while the quantitative researcher looks through a narrow lens at specified set of variables.

A second important difference is said to turn on data collection. In the qualitative tradition, researchers use themselves as the instrument to achieve imaginative insights into the respondents' world while maintaining a distance. In a quantitative approach, the instrument is a pre-determined tool which allows for much less flexibility, imaginative input and reflexivity.

Quantitative research is typically associated with the process of enumerative induction. The aim is to infer a characteristic or relationship between variables to a parent population. With qualitative research it is the concepts and categories, not their incidence and frequency, that are said to matter. In other words, qualitative work does not survey the terrain, it mines it (McCracken, 1988). It is the testing of the theory that is important rather than the issue of inference or generalisability in qualitative approach (Yin, 1989; Platt, 1988).

In practice, these differences between the two approaches are less marked than they appear in theory. Quantitative research does not always test hypotheses: its goal is

often descriptive. Qualitative researchers do not have ideas about what they expect to find or intend to look for. Even if they lack a clear set of hypotheses at beginning of the research, their ideas are influenced by their prior knowledge of the literature and their common sense experience. Initially, it seems easy to distinguish research which uses a quantitative approach to analyse a problem from that which seeks to assess qualitative aspects of the situation under scrutiny. However, more discrete differences are difficult to identify because there are many areas of overlap. For example, sociologists build qualitative judgements into large-scale surveys. Thus, there is little benefit in seeking a definitive quantitative or qualitative approach to a particular research problem. This is because specific research methods such as participant observation can have a quantitative dimension and data produced can be analysed by a variety of methods.

Reichardt and Cook (1979) regard the quantitative versus qualitative debate partly dysfunctional because it fosters the belief that the only available option is choice between two mutually exclusive extremes. Burrell and Morgan (1979) advocate a kind of “middle ground” approach involving a combination of both approaches. This view is supported by Walker (1985) who argue that certain questions cannot be answered by qualitative methods, while others cannot be answered by quantitative ones.

Bromley(1979) concludes that research techniques are subject to error and bias, and only through the use of a combination of contrasting techniques focused on the same topic can such problems be minimised.

Burgess (1982) chooses the term “multiple research strategies” to describe the use of diverse methods in tackling a research problem. According to this view, field methods which do not encompass observation, respondent interviewing and sampling are seen as narrow and inadequate. The argument is that researchers ought to be flexible and therefore ought to select a range of methods that are appropriate to the research problem under investigation (Burgess, 1984). Older and more widely used terminology refer to this strategy as “triangulation” (Campbell and Fiske, 1959; Denzin, 1970). Triangulation does not merely involve methods and data but investigators and theories as well (Denzin, 1970).

My view is that a depiction of qualitative and quantitative research as distinct epistemologies or paradigms that cannot be reconciled is both inaccurate, since they have achieved a certain degree of independence from their epistemological foundations, and are unduly restrictive.

In this thesis, we set out to study the quality of informal sector production and to define more precisely the nature and interrelationships of such constituent groupings as technology and quality, innovation and quality, quality and the market. The complexity of these issues did not favour the use of either qualitative or quantitative approaches; in our view a combination of both was more appropriate, for a number of reasons.

First, we set out to establish the relationship among the variables such as technology and innovation at the same time we wanted to explore the reasons for these

relationships. Quantitative methods were useful for the former while qualitative were applicable for the latter.

Second, we set out to examine how the technological factors influenced quality. The factors were broadly conceptualised. A qualitative study allowed the significance of those factors in the context of specific production activities (blacksmithing, pan making and wheelbarrow production) to be etched with greater sensitivity.

Third, we used qualitative evidence to produce hypotheses which could be tested quantitatively.

Finally, not all issues were amenable solely to quantitative investigation or solely to a qualitative one. The broader issues of products manufactured, sources of design and raw materials were possible to examine using quantitative methods but producers' motivation, attitudes and perspectives were not. Further, qualitative methods were helpful in producing typologies which could improve the understanding of factors explored through quantitative methods.

In this research quantitative data were predominantly used while the qualitative data were largely subsumed in the discussions. However, a few examples of qualitative data are used in the discussions.

5.4 Research Design

In any research we need to optimise the use of the available resources.

Nachmias and Nachmias(1976) describe research design as a logical model of proof that allows the researcher to draw inferences concerning causal relations among the variables under investigation, and define whether the obtained interpretations can be generalised to a larger population or to different situations.

Research can be done in different ways including case studies, experiments, histories, analysis of archival information and surveys. Each strategy has its own advantages and disadvantages and should be chosen with three factors in mind, according to Yin (1989): (i) the type of research question; (ii) the control that an investigator has over actual behavioural events; (iii) the focus on contemporary as opposed to historical phenomena. In Yin's (1989) opinion, the survey is advantageous when the research goal is to describe the incidence or prevalence of a phenomenon or when it is to be predictive about certain outcomes. Warwick and Lininger (1975) point out that survey is an appropriate and useful method of gathering information under three conditions: when the goals of the research call for quantitative data, when the information sought is reasonably specific and familiar to the respondents, and when the researcher has considerable prior knowledge of particular problems and the range of responses likely to emerge. This research satisfied both sets of conditions.

In general, case studies are preferred when “how” or “why” questions are being posed, when the investigator has little control over events, and when the focus is on a

contemporary phenomenon within some real-life context (Yin, 1989). The method is indicated when it is necessary to probe deeply into systems governing behaviour and the interrelationships between people; to establish and explain attitudes and beliefs, and to show why certain behaviour occurs. The case study method makes it particularly suitable in later stages of research as special patterns that have been found during the analysis of some large-scale survey can be made the focus of detailed inquiry. The method is also suitable where the problems are those of decision, not of generalisation for science. The case study method was found suitable in this research because we wanted to study the behaviour of the micro-entrepreneur in his environment of production, marketing and employment. We also wanted to make a decision on the suitability of some micro-enterprises for interventions.

The literature describes several survey methods of gathering primary data that can be basically categorised as: observations, interviews, and correspondence (Rummel and Ballaine, 1963). Given the nature of the research problem, observation and direct interview methods were found appropriate: survey by correspondence and telephone interviews would be quite infeasible with either micro-entrepreneurs or their customers.

The choice of observational method was due to the need to fill some gaps in the knowledge of manufacturing in the sector which could not be readily or adequately filled through personal interviews. Secondly, there was need to observe the micro-entrepreneurs at work, as they interacted with their customers in order to see how they

were influenced by and influenced others in their daily activities. Finally, information gathered through observation would facilitate the interpretation of the relationships and patterns revealed through interview data.

Personal interviews were chosen because some data could not be gathered through observation.

In addition to survey by observation and interviewing, an experimental method was chosen in order to explore the appropriateness of certain interventions and to assess the effects of product and process changes on the producers and consumers alike.

5.4.1 Observational Method

Observation is a primary tool of scientific inquiry, used whenever a phenomenon can be observed directly by the researcher. It may serve a variety of research purposes. It may be used to gain exploratory insights that will later be tested by other techniques; to gather supplementary data that may qualify or help to interpret findings already obtained by other techniques; or as the primary method of data collection in studies designed to provide accurate descriptions of situations or to test causal hypothesis.

Observational methods are however not effective in gathering information about a person's perceptions, motivations or future plans; and certainly they provide no information about past behaviour. Further, entry of an observer may introduce another variable into the situation that may change the behaviour being observed.

Observation was found appropriate for a number of aspects of this research. First, it was used for gathering data that was later used for the formulation of the propositions. Secondly, it generated information about the context of the micro-entrepreneurs' activities and perceptions. Thirdly, direct observation provided information on production processes, tools and equipment being used in the informal sector, which could not readily have been gathered through any other method. Finally, it provided a cross check on much of the information gathered during personal interviews.

The micro-entrepreneur was observed in his production setting in order to assess his production methods and facilities. The producer was also observed in his multiple roles of a worker, a trainer, a salesman and production organiser. These observations were recorded and were used to supplement the survey data obtained through interviews.

Besides observing the producer in his multiple roles, some of his products were selected and tested using formal sector standards. The use of formal standards was justified by the consumer reference to formal sector products in his or her judgement of quality of informal sector products and the fact that most of the informal products are imitations of formal sector products.

5.4.2 Interviewing Methods

Questioning people participating in a phenomenon through face-to-face interviews is a form of data collection which is a scientific means of developing systematic knowledge

about subjective experience. The researcher and respondent jointly recreate this knowledge in an interview.

In an interview, since the interviewer and the person being interviewed are both present, there is opportunity for greater flexibility in eliciting information; the interviewer has the opportunity to observe both the subject and the total situation to which he is responding. In an interview there is the possibility of repeating or rephrasing questions to make sure that they are understood or of asking further questions in order to clarify the meaning of a response. Further, in some cases, the interviewer can check some information with his eyes which may reduce exaggeration.

Interviewing is time consuming. In addition, a researcher should entertain some reservations about responses that if truthful would be embarrassing, degrading or whenever a person is using the interview to gain respect or prestige or in some other way to create a certain social effect.

Interviewing was found to be appropriate because the micro-enterprise was selected as the unit of analysis and complete information on the micro-enterprise could not be gathered without talking to micro-entrepreneurs and observing them at work. Further, historical data could not be gathered effectively using other methods.

During the interviews, the emphasis was in informality and free discussion. This was thought to be necessary in bringing out personal experiences of the micro-entrepreneurs and not to limit the response. A questionnaire was, however used to guide the discussion to within the framework of the research.

The interview contact mainly depended on an impromptu call at the place of work of the respondent and requesting an interview. The approach was fairly simple, including introduction of interviewer and his purpose of visit. An emphasis on introduction was the creation of confidence in the respondent and that his knowledge was important. An arrangement was sought for an interview at a time suitable to the prospective respondent if the particular time of original visit was not suitable to him. The focus of the interview with the micro-entrepreneur included capital investment, mode of skill acquisition, raw materials used and their perception of quality.

With a view to supplementing and checking the responses given by the respondent to the questions, observations of the production facilities and other relevant characteristics of their management practice were made during the interview. This necessitated a second and at times a third visit to the micro-enterprise.

The consumer interview involved accosting a person on the street or place of work and requesting the person to assist in a study regarding quality of informal sector products. The focus of the interview was on judgement of quality, understanding of quality and the importance of elements of quality in judging the quality of both formal and informal sector products.

To cross check the validity and consistency of consumers' response, the consumers were asked to judge the quality of three sets of informal sectors products composed of three units in each category. The consumer was asked the reasons for his or her

rankings. Consumers' opinions were sought on ways of improving the quality of informal sector products.

5.4.3 Experimental Methods

Experimental methods have the advantage of being amenable to observation. The relationship observed is clear in its causal direction. These methods were used to examine the effect of various intervention strategies. Particular products and processes were chosen for improvement and observations were made on their effect on consumer acceptance, producer capability and resistance to change.

Despite the advantage of being observable and of being controlled, experimental data suffer the disadvantage of not being generalisable. However, they were found to be appropriate in exploring the viability of product-oriented and process-oriented improvements which no other method could have enabled us to do.

5.4.4 Sample Selection

A representative sample of a population is the base for a formal test of hypothesis about that population. However, the choice of a sampling strategy should be based on the criteria of feasibility and cost, as stated by Fowler (1988). In spite of the fact that

the primary choice should be a study of a probability sample, it is often the case that working in such conditions is not feasible.

Tull and Hawkins (1987) recommend that the researcher should choose between probability and non-probability samples based on the cost versus value principle. In the case of the micro-enterprises, there was no comprehensive list to be followed. The identification of the sample thus became difficult. No data was found on the total number and types of micro-enterprises and this suggested the impossibility of choosing a probability sample from the specific population. When the definition of a population is made impossible owing to the lack of a list of that group, the researcher is compelled to use a non-probability sample (Moser and Kalton, 1971).

The choice of a non-probability sample is weighed by Phillips (1976). He raises the point that such an approach makes the estimation of the external validity difficult. Nor can generalisations of the results be made to the whole population. On the other hand, Phillips' justification of this sample is that, being less expensive and less-time consuming than the probability sample, the non-probability sample allows more resources to be available for the task of providing internal validity, that is, how well the findings apply to the particular research situation under investigation. Moreover, Phillips (1976) says that the study of people directly involved with the phenomenon may produce far more understanding per individual studied than the most rigorous probability sample.

In this thesis a non-probability sample of 200 producers were interviewed in three towns. In Nairobi, 138 producers were interviewed, 35 in Nyeri and 28 in Nakuru. The samples were considered representative because they were chosen from the clusters of micro-enterprises in all the three towns. The micro-enterprises in these clusters were observed to portray almost similar characteristics. There was no rigorous criteria in selecting the sample units. Micro-enterprises that were visible to the casual visitor were interviewed. Choice of areas where we have clusters of micro-enterprises was largely based on the proximity to the roofed sheds provided by the government.

The consumers were chosen at random. They were an accidental sample where cases were taken at hand and the process continued until the sample reached a designated size. In the first survey, 80 consumers were interviewed while the second survey had 137 consumers. An auxiliary sample of 50 consumers were interviewed to evaluate the value of products in the consumers' eye.

5.4.5 Questionnaire Design

A considerable amount of time was dedicated to the development of the data collection forms. As claimed by Luck and Rubin (1987), a researcher may need more art than science to compose a questionnaire. It is necessary to have a clear understanding of the information needed and the significance of the respondent in the whole process.

In relation to the present research, it was decided to use a structured response format to ensure that all the respondents were replying to the same question. In accordance with this, questions were developed after literature review on the subject of research. Personal experience in the research area was used during the elaboration of questions. Both fixed-alternative and open questions were used. Open-ended questions were usually followed by probes to elicit more information or to gauge the respondents feeling or opinion about a particular issue. Filter questions were used to check the respondents' consistency in their responses.

Tull and Hawkins (1987) advise that the overall questionnaire should move from topic to topic in a logical manner, with all questions on one topic being completed before moving to the next. Accordingly, questions were sequenced in a form that sought to facilitate the process of getting the necessary information from the respondent.

5.5 Data Analysis

The analysis of data was mainly manual. The verification or rejection of the propositions and conclusions were mainly arrived at by deduction from the data collected and observations made. My reliance on both forms of data reflects the criticism levelled against survey interviews that they have a tendency of relying on attitudes and people's reports of their behaviour and actions, which may bear little relation to actual behaviour and actions (Deutscher, 1966).

5.6 Critique of Methodology

Any bias entering the analysis may be largely attributed to my state of familiarity with the informal sector. My own “disciplinary lens” may have failed to detect nuances significant to the line of questioning followed. However, these were partially offset by confronting areas of perceived difficulty with selected micro-entrepreneurs and practitioners in this area.

Given the dispersed nature of the sector and the problem of knowing the population of micro-enterprises, it is doubtful whether another approach would have been appropriate.

The number of consumers in the first survey may not have been wholly representative but this was offset by having a second consumer survey where the number of the consumers was bigger and the unclear issues of the first survey were revisited.

Finally any survey is judged by its scope for generalisability. The samples taken may seem small but care was taken to make them as representative as possible. Further, these samples were augmented by many discussions that I had with producers and consumers outside the samples. This more than made up for the perceived shortfall.

The conclusions of this research could therefore be applied in Kenya’s informal sector as well as in similar situations in other countries.

CHAPTER SIX

DISCUSSIONS OF THE RESULTS

In this chapter the results of the surveys will be discussed under the propositions formulated in Chapter 4. Full results are presented in the appendices. In the discussion, findings related to propositions will be distinguished from the more general and unplanned findings. The latter will be discussed first.

6.1 General Findings

There is a geographical tendency for the manufacturing micro-enterprises to form agglomerations according to particular trades and specialisations. The benefits of this to micro-entrepreneurs could be marketing or manufacturing oriented. There is a tendency for buyers to go to centres of concentration for choice and competition. On the other hand, producers in clusters can exchange information about products, fix prices together or get tools from one another. In fact, most producers start manufacturing without tools through borrowing from others. However, clustering was found to inhibit innovation because producers were reluctant to come up with new designs because they were afraid of them being copied.

Another significant finding concerns the way people are employed in the sector. Few micro-entrepreneurs had any waged employees on a permanent basis. Employees, are hired on a piece-rate system and are only engaged if the owner has an order that he

cannot fulfil alone or if the owner does not possess the skills required to produce what he sells. This cuts down costs to the employer during the slack periods.

The existence of two levels of technology was another finding. Those operating at the higher level of technology were using electric-driven machinery and produced goods of higher quality. The greater percentage of the micro-enterprises were however in the lower level of technology where basic hand tools and bits of scrap were used as tools.

The existence of different types of micro-entrepreneurs was also an interesting and unexpected finding. There are those who are physically involved in the process of actual production and others who set up the business whose major function is to look for markets and organise production. There are others who set up business and engage themselves in the marketing function only. Those businesses where the entrepreneurial and managerial functions are divided and carried out by different individuals were seen to be doing better than others and their quality was slightly better.

The use of apprentices was found to be common. Almost every micro-entrepreneur had trained other people. The use of apprentices could explain the low levels of wage employment in the informal sector.

Finally, it was observed that many producers had inadequate space in which to work and display their wares. Shortage of space may partly explain why the need to acquire machines may not have arisen. The producers did not own their work places and simple tools and machines have to be taken home by the producer at the close of business.

6.2 Poor Manufactures in the Informal Sector

The first proposition was “Manufacturing in the informal sector is characterised by poor quality products”.

6.2.1 Product Tests

The range of informal sector products is limited and can be divided into consumer goods and producer goods. The former goods dominates. Most of the products tend to lack an attractive finish and are poorly constructed.

A cross-section of the sector’s products were appraised using very simple tests that the micro-producers could and eventually did undertake themselves. A few examples are given below.

Five wheelbarrows were tested and all passed static load test. They were later given to a local contractor for use in construction. Two of the wheelbarrows were used for carrying water barrels. After two months they broke along the joints. Two were used for carrying cement and mixtures and after a month they required repairs due to the poor welds. Thus they failed in operating conditions despite having passed the test. Riveting introduced a weakness such that with use, the durability and performance of the product was greatly affected. The use of heavy-gauge materials reduced the weight that could be carried with the welded wheelbarrows. Their appearance was not appealing due to the poor finish that resulted from welding, riveting or use of old materials.

Twenty-two pots were tested and only seven passed a leak test. Besides, the seams made them difficult to clean and gave them a poor appearance.

Of the twelve hoes that were tested, only three passed the tests applied. Poor welding and the use of inappropriate materials lowered their quality. Their finish was poor.

The products were also found to lack dimensional accuracy, standardisation in terms of size, materials used (both light and heavy gauges were used for the same product), and form. For example, the angle between the handle of the pan and its flat surface was found to be a variable. The handle was wholly made of metal such that when in use, it was difficult to hold.

The products tested represented the range of products made in the sector. From the test results and our observations we arrived at two conclusions. First, most of these products failed in the task factors that are concerned with the economic objectives which underlie a purchase by a consumer. Second, they could not fulfil the non-task expectations, such as aesthetics, which though are outside the basic rationale for a purchase affect the purchasing process and decision. Failure in both areas confirmed the low quality as postulated.

6.2.2 Consumers' Opinions

Consumers consider durability, performance, reliability and appearance when judging the quality of products. When comparing the informal and formal sectors' products, 83 percent of the respondents felt that informal sector products were inferior. This inferiority was attributed to poor performance, appearance and durability by 54 percent of the respondents. In their expression of whether informal sector products fulfilled

consumers' requirements, only 23 percent indicated performance, 4 percent reliability and none indicated appearance. On what attributes of sector's products attracted respondents generally, only 7 percent of them indicated performance, 2 percent reliability and 1 percent appearance. Since most of the respondents had bought products from the informal sector, these results should reflect their experiences in consuming these products. Overall, they show the consumers' dissatisfaction with the products. The results therefore confirmed our observations and the results of the product tests we applied.

Forty-four percent of the respondents indicated that they did not like the materials used in making informal sector products and 23 percent did not like the appearance of the products. The low quality attributes of poor performance, appearance and durability could be attributed to poor design, raw material, quality control methods and the low level of technology used.

6.2.3 Product Design

The adequacy of design capability in the sector determines the nature of products made and the effectiveness of the modifications made to products copied from the formal sector.

Without design capability, the sector would be stagnant in terms of products successfully produced. Three observations relating to design are deemed relevant in the context of determining whether this capability exists. First, close observation of the tin lamp (a representative metal item) revealed that it had undergone several

modifications in the last twenty years since it was taken over from the Indian artisan. This is supported by the 33 percent of the respondents who indicated that they had modified the products they started with by addition of new features. Second, the micro-producer sometimes has to convert a customer's description of a desired product into a real life object. This is supported by evidence that 60 percent of the respondents had produced goods from designs originating from customers. Finally, a close look at the products manufactured in the sector revealed that out of 53 products identified during the survey, 10 of them had no counterparts in the formal sector. It is therefore evident that design capability exists in the sector. However, these findings also suggest that only a few of the micro-enterprises have product design capability at a significant intensity. It may be that the need and scope for product design is quite limited.

The scope for product design may be limited because the risk inherent in product design is more than the micro-entrepreneur can bear. Consequently, the producer often has to give up at a very early stage in product innovation. Even if the design is made to work, he cannot be sure that it will be marketable. In the first case, the question is whether funds are available to finance product development; in the second, whether it will sell at a profit. Both uncertainties seem to discourage product design.

It could be argued that the poor quality of the sector's products is due not to reliance on external design inputs but to the inadequacy of the information available from these sources for the producer to be able to carry out product adaptations or modifications successfully. On other hand, it could be argued that even if adequate information was

available, the producers would not make much use of it due to their low levels of education.

Formal sector designs reach the informal sector indirectly through workers who leave the formal sector and join the informal sector. They are also transmitted directly through the products in the market. In the former case more information on the product is acquired than in the latter case. In the latter case, the producer initially receives less information on a product and the likelihood of obtaining enough to modify it successfully is small due to the level of linkages between the two sectors. Thus the process of modification or imitation is likely to proceed through trial and error which leads to poor quality of design. The latter case is more prevalent since only 2 percent of the respondents were formerly employed in the formal sector.

A low level of education and exposure restricts the micro- producer's appreciation of the relationship between design and production process, design and materials, and design and skills. This lack of appreciation usually leads to poor modifications or imitations of products and mismatch between product and process. The result is poor quality products.

6.2.4 Raw Materials

To the informal sector producer, the choice of material to use is usually decided by the amount of money he has and the price that the market can accept for his product. The low prices that are affordable by most consumers encourage substitution of new materials by recycled ones. Ninety-six percent of the respondents used recycled

materials and they were influenced by prices of the resultant products in their material purchases. Shortages of materials also affected the production of 98 percent of the respondents.

Shortages of materials affect the quality of products manufactured in many ways. First, the producer may opt to make alternative products which may require skills that he is not proficient in thus affecting their resultant quality. Nine percent of the respondents switched to alternative products due to raw material shortages. Secondly, in order to cut down on time spent in searching for materials, the producer may opt to buy low quality materials which compromises the quality of goods made. Finally, in order to recover production lost during the search for materials, quality may be lowered through fast and thus shoddy workmanship.

Recycled materials or substitute raw materials are usually of low quality but have the advantage of bringing goods at low prices within the reach of the poorer customer.

Their use in production affect quality in two ways. First, their use lead to poor product finish, durability and performance. For example, chicken drinkers from the formal sector are made from plastics. Those made in the informal sector are manufactured from recycled galvanised steel sheets. They have poor finish, rust after a short time and are difficult to clean.

Secondly, material substitution may require modification of technology. For example, due to shortage and high prices of new carbon steel for making hoes fully by forging, blacksmiths substitute it with recycled mild steel and appropriate sizes of pipes for the head. By welding the two pieces together, a hoe is produced. This substitution of

material and technology results in poor quality of the product because of the weakness of the “neck” that results and the rapidity with which the blade wears out.

Material substitution may also lead to poor quality of products due to lack of knowledge of materials. Successful material substitution requires the knowledge of both the material being substituted and the one taking its place. Forty percent of the respondents substituted materials because of availability and did not seriously assess their suitability.

Despite the evidence given above, material substitution does not always lead to poor quality. During this research, a number of producers were identified who were making good quality products through the use of good recycled material and good workmanship. An improvement in their knowledge of materials may lead to more and better choices for the producers.

6.2.5 Technology

Poor performance and appearance could also be attributed to the technology used. The quality difference between products manufactured by mass production methods and manual ones illustrate the link between technique and the product manufactured. It is possible that choice of production technique is eliminated once a choice of product is made. For a producer of cooking braziers or tin lamps out of recycled materials, there is only one production technique available in the informal sector, namely manual technology. Scarce resources, low profit margins and lack of information on alternative

technologies do not allow any other choice. In practice therefore, that entrepreneur's product cannot exceed a certain level of quality.

6.2.6 Product Quality Control

The small quantities that characterise micro-enterprise production may lead to the expectation that the quality of products is thoroughly checked. However, a close observation of the micro-entrepreneur and the way he fulfills the quality function leaves no doubt that this is not so.

Normally the producer looks at what has been produced at the end of the day. The quality assessment involves visual observation for possible defects and the level of workmanship. In many cases however, this does not occur. Thirty percent of the producers admitted that they do not assess the products because they believe that what has been produced is good. In other cases, they may not assess the product because it has been sold during their absence.

An analysis of the above method of quality assessment, reveals many inherent flaws in it. First, defect-oriented quality inspection may lead to the acceptance of a product because of no visible defects but will not ensure good performance. For example, one producer checks the pots he manufactures for visible defects. However, we tested five of the pots he had inspected and they all leaked. Secondly, the non-utilisation of equipment for testing leaves many variables unchecked and faults are likely to show during the working life of the product. For example, a slight misalignment of a wheel of a wheelbarrow may not show during defect assessment and even if it shows it may

not be regarded as a defect, but when put under load, the performance of the wheelbarrow will be greatly affected. Finally, the after-effect inspection does not ensure quality production unless the lessons learned are later incorporated in production.

The majority of the respondents claimed that they distinguish good quality products from bad by looking at the materials used, finish, appearance and workmanship. In fact, 65 percent just check on workmanship alone. It is therefore evident that micro-entrepreneurs do not assess the quality of their products against either customers or national standards.

On the basis of product tests and observations made, it is my opinion that informal sector products are of poor quality. The consumer rating of the quality of these products confirm that they are of low quality. Based on this evidence therefore, the first proposition is accepted.

6.3 Technological Capability in the Informal Sector

The second proposition was “The low level of technological capability is the major cause of low quality goods in the informal sector”.

6.3.1 Investment

Most of the respondents started with low amounts of capital which could have only served them as working capital. This is confirmed by the fact that 51 percent of the respondents started without their own tools.

Because of the small amounts of capital available, an informal enterprise does not come into being as a complete unit; rather it is built up gradually. As the enterprise grows, the producer adds new components to his tools according to such additional financing as he can afford.

The micro-scale, not only of the enterprise, but also of the surplus it generates prevents the entrepreneur from making any substantial investment aimed at improving technological processes or acquiring adequate tools. This situation is further aggravated where the income received is both a household and a production asset.

The low incomes explain why the majority of the people in the sector have only tools and no machinery. The majority of those respondents who had bought tools after establishing their enterprise did so to replace those they had borrowed from friends.

Thus the low levels of the initial capital and the low returns to producers do not allow them to operate at any other level of technology except the lowest. This is one of the major areas requiring improvements if micro-enterprises are to produce better quality goods.

6.3.2 Production Capabilities

It is generally assumed that education and training are factors that play an important part in developing both the production capabilities of an enterprise and technological innovation. Although the data gathered during the survey does not confirm the theory categorically, they none the less point to an undeniable connection between education and training and the quality produced.

The majority of the respondents had either completed only primary school education. Those with secondary schooling were few in number and were the late entrants to the informal sector.

There are a number of reasons why the relatively better educated still shy away from seeking employment in the sector. First, the poor conditions of work and instability of employment seem to provide barriers to this group. Secondly, the attitude toward the sector by the public seems to discourage them. Thirdly, the incomes are presumed to be low relative to their level of education. Finally, older artisans usually prefer those with low education as apprentices.

The level of education may affect quality in several ways. Having low education and joining the sector at a very early age, the producer lacks exposure to a larger market with its higher quality requirements. Thus continuous exposure to low-income population does not allow one to look beyond it and hence the narrow view of quality which is reflected in their products. Moreover, those with higher education feel that they deserve better and hence join the sector only while waiting for opportunities in the formal sector. Thus they do not aim at accumulating the know-how of production in

the sector. Of the 15 percent respondents who expressed the need for training in other skills, most were those with some secondary education. Finally, the low levels of education removes the possibility of entrepreneurs having access to training outside the informal sector. Training outside the sector presupposes a sound basic education and gives access to better skills. Only 9 percent of those interviewed had training outside the sector.

The poor educational background is compounded by inadequate technical training. Ninety percent of respondents were trained in the sector. Majority of the people who started the sector had little or no education. They were poorly trained in the Indian workshops before they set up on their own. Their poor skill foundation has been perpetuated through training others.

Training in the sector tends to reproduce or perpetuate an imitative technological model, even to the point of generalisation. It is based on imitation of what those who know do. Consequently, when a former apprentice sets up a micro-enterprise, he imitates what was produced and how it was produced by the master. Thus deficiencies in skill limits the full potential of both the individual and the enterprise.

Skill acquisition in the informal sector involves the integration of a large number of discrete experiences gained by doing. The main feature of artisan's skill is the intricate knowledge about the product in question, the metal used and the production operations performed. The success of this learning depends on the capacity of the learner to generalise what is learnt in a way that permits its application to different circumstances. However, an apprentice who is taught to make water buckets cannot make cooking pots because training is product-specific and not process-oriented.

The skills imparted in the sector may also be deficient due to the poor attitude and orientation of the master. The master may not spare time for training and thus training is only imparted during slack periods. Majority of the respondents confirmed this. Indeed, the producer may have taken apprentices only to boost his production through their labour or for the money paid for learning by their families: he may have no commitment to training.

The level of skills acquired in the sector will also depend on the proficiency of the master. Where the master is himself a product of poorly trained apprenticeship, the resultant training imparted will not be of high level. In addition, training may just include the way the products are made without including other necessary facets of informal sector production, such as choosing materials and marketing.

Besides the shortcomings of the way skills are imparted, the apprenticeship leaves specific gaps in the job-related knowledge. Knowledge about the underlying process, about possible changes which might be made and about the likely effect of such changes and adaptations is not incorporated in the learning process in the sector. The apprentice is only exposed to the know-how but not the know-why and both are necessary if flexibility and proficiency of the apprentice is to be assured in the face of changing materials and products.

Besides the level of skills, the attitude of entrepreneurs do affect the quality and the level of skills available to the enterprise. Entrepreneurs are self-employed workers who own their means of production, trying to steer a survival course between the pressures imposed on them by shortage of capital resources, on the one hand, and fluctuating demand, on the other. Thus the micro-enterprise operates on the basis of self-

employment of entrepreneurs and rotation of wage earners. Such instability is not without prejudice to the economic unit itself, not only in terms of the possibility of having skilled labour to contribute to technological progress, but also in terms of the accumulation of know-how within the enterprise. This reduces the competitiveness of the enterprise in terms of diversity and quality of products.

One of the key variables determining the capacity to innovate and produce high quality goods, is the level of experience and the extent to which the entrepreneur is exposed to the formal sector. Majority of the respondents had experience of production only in the informal sector and only 2 percent had any experience in the formal sector.

As might be expected from the many years for which their enterprises had been in operation, entrepreneurs had accumulated intensive experiences in the manufacture of particular goods. Such experience is a valuable asset. However, it lacks variety and hence exposure to different techniques at different levels of technology.

While not demeaning the experience gained in the informal sector, experience gained in the formal sector helped those involved in getting familiar with techniques and thus gave them technological confidence and flexibility in adapting production techniques. King and Abuodha (1991) concluded that the formal sector trained entrepreneurs were responsible for the introduction of all the new technologies and that what the majority of those trained in the informal sector did was to increase production of the newly introduced products. This confirms our earlier proposition that micro-producers perpetuate an imitative technological model. Our research also showed that those with experience in the formal sector operated at a higher level of technology and that the quality of their products was better. This could mean that either the higher level of

technology enabled them to produce better quality products or the need to produce better quality products for a wider market made them operate at a higher level of technology.

In conclusion, though experience may make up for the poor educational background, the educational background is likely to play a vital role in understanding basic technical and scientific skills necessary for innovation especially in a society where the gap is widening between technologies currently used in the informal and formal sectors. The main source of expertise among those interviewed was work experience. Thus the shortcoming of their expertise was in training received and the restrictive nature of experience acquired. Generally, they were aware of the inadequacy of their skills and stated that this shortcoming was a serious obstacle to production of high quality and the growth of their enterprise.

6.3.3 Innovative Capability

The survey revealed a wide range of innovative behaviour by the micro-entrepreneurs. This included introduction of new products, product improvements, process improvements and utilisation of new tools. From this we concluded that the findings do not lend support to the notion that informal sector is technologically stagnant.

Thirty-four percent of the respondents indicated that they had gone into the manufacture of products other than those they started with. Such shifts to new areas of production provide the basis for technological growth in the sector though in a very limited way. This is because new products may require new techniques and tools.

However, in most instances the producers adapt products that rhyme with their present methods and facilities. There is usually one micro-entrepreneur who starts the move and then with time a sporadic movement converts to a substantial one until the resultant competition brings in no more revenue to those who join it. For example, one micro-entrepreneur started making seamless cooking pots with traditional design. This was highly profitable at first and required patience and skill. The other entrepreneurs decided to go a step further. They started making those pots with seams while maintaining the traditional shape. By having seams, the quality of the product was compromised due to poor performance, poor appearance and the high probabilities of leaking. However, the price was reduced. The first micro-entrepreneur could not compete and abandoned the venture. In this case, poor quality drove out good quality from the market. This conclusion illustrates a very fundamental aspect of the Kenya's informal sector, production is not technologically inspired and hence competing on quality has not been adopted as a business strategy.

Competition was found to be important in stimulating innovations. But we do not regard this as purely demand-side stimulus. Imported products are an important source of learning for product innovators, such that import competition is equally a supply-side stimulus, giving scope to micro-enterprises to learn and imitate. For example, the manufacture of collanders and vegetable graters in the informal sector was stimulated by imports. However, quality was lowered due to the use of materials that were not stain free. This is a further illustration of the informal sector's dependency on the formal sector and how this dependency is devoid of techniques which can uplift the informal sector from its present low level of technology.

Ninety percent of the respondents indicated that they faced competition mainly from their fellow artisans. Micro-enterprises are not seriously affected by competition from large enterprises or from the formal sector in general because of the way in which market and demand are segmented. The co-existence of micro-enterprises intensifies competition and makes it difficult for them to expand technologically. Hence most of them are concerned with producing new products than utilising technology because the former can result in an immediate gain, whereas the latter may be difficult to handle and has no immediate financial gain. Thus innovation is not oriented towards improving competitiveness in the micro-entrepreneur's range of products.

Product improvements were more prominent than process improvements as shown by the evidence that 33 percent of the respondents had improved the designs of their products while only 11 percent had improved their production processes. This has implications with regard to technology in the sector.

It would be expected that adaptations of formal sector products would lead to matching the product and process technology in order to achieve competitive advantage. For example, in the example given above on cooking pots, it would have been expected that the producers would have come up with a technology for manufacturing the pot without seams as the first producer had done. Instead the product and the process were mismatched. This is a common feature in the metalworking activities of the informal sector.

As product and market mature, a dominant design should emerge and the emphasis should shift from product innovation to process innovation. With regard to potential for innovation in terms of manufacturing of capital goods, the ingenuity of most

entrepreneurs had not extended beyond production of simple manual devices. During the survey we did not identify many original machines manufactured in the sector being used for production. The relative sophistication of imported technology in relation to the skills of entrepreneurs is an insuperable obstacle to innovation and reduces the potential for adapting equipment and hence for producing high quality products. It could be that the supply of capital goods to micro-enterprises is not well developed. Alternatively, the low level of technology and the lack of competitiveness based on diversification and quality has not given rise to any demand for capital goods by micro-enterprises.

There several reasons for the above pattern of behaviour. First, the whole of the Kenyan industry is characterised by its lack of manufacture of capital goods, and thus lacks an environment which influences what could be called “technology culture”. Secondly, the imitative model permeates the whole society. The formal sector produces imitations of products made in other countries and hence no product developments takes place which further reduces the need and potential for the development of alternative production technologies. Thirdly, would-be customers seem reluctant to place orders with informal producers, especially when it comes to manufacture in which producers may lack proficiency. This results in a demand in which only the common consumer goods are ordered from the micro-enterprises. Lastly, the low level of product development in the informal sector discourages local innovative techniques of production.

While it is encouraging to note that some technological capability exists in the informal sector, it is clear that its extent is low and cannot allow for the production of high

quality goods. Further, it does not bridge the technology gap between the formal and informal sectors. In this respect it perpetuates the technological dualism which prevents micro-enterprises from “graduating” into small or medium scale enterprises.

In the foregoing analysis, we have seen that the technology of the informal sector is characterised by use of simple tools and few devices. Machinery production in the sector is quite limited. Technological capability of the sector is low due to the low levels of education and inadequate skills. These inadequacies together with low level technology cannot lead to either production of high quality goods or product modifications that would ensure the manufacture of high quality imitations. On the basis of the evidence reviewed here, we accept the second proposition.

6.4 Consumer Evaluation of Quality

The third proposition was “Consumers are unable to evaluate quality and use price to judge quality thus neglecting product performance, aesthetics and other elements of quality”.

6.4.1 Consumer Judgement of Quality

Purchase behaviour requires, among other things, that the consumer be able to make judgements and comparisons across products. Some or all of the various items of information associated with the product are identified, evaluated and integrated to

form a composite judgement. One judgement of considerable importance to the consumer is the product's quality.

We all have some mental image of what quality means for a particular item. It may be the fine finish on a machined item or the smooth movement of a mechanical device, or perhaps it is the lack of defects on an enameled surface. Moreover, the relative importance of characteristics and features of a product varies over time as well as among users. Needs, or perceptions of need, change making the quality of a product a dynamic phenomenon.

Different groups of people respond differently to particular quality characteristics. Their varying importance reflect the consumer's requirements at a particular period of time with particular product in mind. While 85 percent of the respondents ranked performance first when evaluating the quality of a pan, 86 percent ranked durability first in their evaluation of the quality of a window latch.

Performance, durability and aesthetics were declared by most respondents to be the most important characteristics in their understanding and judgement of quality.

The performance of a product is the first quality characteristic that the consumer considers. It is the function that one looks at before evaluating form and features. Product performance, however multivariate it is, can be measured objectively. Further, product performance is continually visible and hence judgements in this are for most part firmly grounded.

The life expectancy of repairable products is only partially explained by such objective criteria as product durability. Durability, as a measure of product life, has both

economic and technical aspects. Technically, durability is the amount of use one gets from a product before it physically deteriorates. Economically, durability is the amount of use one gets from investing in a product over a period of time. Durability ranked highest as a quality characteristic in fulfilling consumer requirements and in attracting respondents to buy from informal sector. To the consumer, a product should continue functioning efficiently over a long period of time. It is for this reason together with the falling real incomes that made consumers consider durability as an important characteristic in their judgement of quality.

Aesthetics is ignored by many producers. It is the quality characteristic that is most difficult to evaluate and define. Colour, workmanship, appearance, and product finish were some of the aspects of aesthetics that were considered by respondents. A well-painted chaff cutter was found to be more attractive than one which was not. A pan with a smooth finish created a stronger appeal than one with a rough surface. Good workmanship created an impression of unity in design and improved the appearance of a product. The informal sector products had a very low score on this characteristic.

It is normally difficult to evaluate performance, and durability of a product before consuming it. Most consumers use surrogates for these characteristics in making their judgement. In distinguishing products of poor from those of good quality, respondents used materials making the product, strength, appropriateness, workmanship and appearance as surrogates of the quality characteristics discussed above. Consumers were able to judge from the sound of the material whether the product was likely to give good performance and durability. Durability was also judged on the basis of workmanship and strength of the material. Aesthetics of the products were judged by

appearance and workmanship. These surrogates were found to be especially important in judging quality of informal sector products because trade marks, trade names or any other identifying marks are non-existent.

From the foregoing analysis, it is clear that consumers are capable of judging quality of frequently purchased products. This is consistent with the view that the quality of complex products is difficult to judge even for most informed consumers. In my view, the respondents were able to judge quality and their judgement agreed with mine in many aspects. In fact only 16 percent were unable to judge quality adequately.

Hamnett (1993) seem to capture the consumer ability with her statement that “ clothes must be durable, functional and well-made, so that they last a long time”.

6.4.2 Quality and Price

The use of price as an indicator of quality is based on the theory that quality is a measure of utility. Hence, the more quality a product possesses, the more utility it contains, and the higher price it will obtain in the market. Implicit assumptions of this expectation is that consumers possess sufficient information to evaluate product quality, and that they are always able to make comparisons among products of different producers in the face of conflicting information. In reality, consumers lack knowledge of actual performance of the products they meet in the market, and meet only a limited set of all products.

The results indicate that price was ranked sixth as a characteristic that consumers used to judge quality and only 21 percent considered highly priced products as of high quality.

The minority of respondents who considered highly priced products as of very high quality indicated that high prices were a result of the use of expensive materials, good workmanship, longer useful life and use of more resources in production.

Price can convey demand-related quality information or supply-related quality information. A high price may reflect either a high demand for a superior quality or the high production costs associated with high quality. However, various factors affect price as an indicator of quality. First, the market information on prices is imperfect. The sellers always quote high prices in order to expand the bargaining range while always having a minimum acceptable price. Thus having a bargaining range, that is not common to all sellers, distorts the price information available to the consumer. This prevents the consumer from making meaningful price-quality comparison. Second, the seller has price differential depending on the customer. For those who are frequent buyers, the prices charged are lower than for those charged one-time buyers. Finally, the price accepted by the consumer may only reflect his or her convenience.

Majority of the respondents attributed high prices to exploitation, selling location, advertisement, monopoly and scarcity.

Scarcity of goods may be a reflection of restrictions on the importation of products and also due to lack of inputs necessary for the manufacture of a particular product. Lack of inputs or import restrictions could be due to shortage of foreign exchange.

Advertising and promotion does contain a great deal of exaggeration and confusion, along with some deceit. For centuries, sellers have exaggerated the merits of their products. In those years, the objects of trade were mainly familiar materials and products. Users had been exposed to those products from childhood. Not only was there a near equality of product knowledge between buyer and seller, they lived in the same village. The resulting clear identity of parties, in an atmosphere of village discipline, helped to keep them both honest. These basic foundations have been eroded and advertising has in most cases become misrepresentation.

Consumers feel cheated when they find prices of a product different in different shops in the same area. The consumer's expectations of high prices *signalling high quality* can only be fulfilled if sellers do not find it profitable to cheat by conveying false market signals such as charging high prices for lower quality. Two reasons why sellers might refrain from cheating are desire for repeat sales and presence of informed consumers. The producers would welcome repeat sales but may be led to cheat to secure a sale.

In conclusion, there is little evidence to suggest that either the consumer is not able to evaluate quality or that price is used in judging of quality instead of performance, aesthetics and other elements of quality. On this basis therefore, the third proposition is rejected.

6.5 Incentives for Quality Production

The fourth proposition was “The micro-entrepreneurs lack incentives for producing high quality products and this has led to production of poor quality goods”.

6.5.1 Incentives to produce high quality goods

The competitive pressure which is brought to bear on enterprises might result in them undertaking quality improvements or producing at high levels of quality. The hypothesis is that the greater the degree of competition, the greater the dominance of quality improvements. Ninety-nine per cent of the respondents faced competition from their fellow artisans. Due to this competition, 80 per cent of them had improved their products since they started production with 63 per cent of the improvements made to enhance consumer appeal in terms of workmanship, finish and appearance.

Competitive pressures may constitute a powerful force for quality improvements, but they may also be counterproductive if the micro-enterprises are unable, even with an efficient utilisation of resources at their disposal, to meet such competition successfully.

For those micro-enterprises that sell only from their production areas, they could choose to compete on pricing or quality production. Through judicious selection of recycled materials and good workmanship, they may compete on modest cost with high quality. Others may choose to compete through selling at low prices with modest quality. In both cases, competition would lead to improved quality.

With regard to micro-enterprises that sell their products outside their production areas as well, it would be reasonable to expect that the quality of their products to be higher because their customers will have sharper focus, measuring quality against competing products. Some may sell at high prices to exclusive customers. In this case, they would have to give their customers not only good performance but also aesthetic quality or quality of rarity in order to add value to their products. In these situations, competition would give incentives to high quality production.

There are those micro-enterprises that are unable to compete fairly due to lack of resources and hence choose to fix prices. Co-operation on price fixing was reported by 75 per cent of the respondents. Due to the orientation to low-income population, this either means low returns or use of cheap and low quality recycled material. Low returns already characterise the informal sector: lowering them further is unacceptable. So the option of using low quality recycled material is often adopted and the result is the production of low quality goods. This seems to prevail with many producers in the informal sector on an intermittent basis for some and for others, all the time.

Financial gains could be the most important factor in inducing producers to manufacture goods of high quality. Seventy-eight per cent of the respondents felt that producers are adequately rewarded for producing high quality through higher profits and more sales. However, this feeling may be depressed by lack of product differentiation and the depressed state of the market for their products.

Other incentives for high quality production include reputation with other producers, standing in the community and self-respect. These may apply in smaller urban areas

where the community is small and closely knit. In the main urban areas the large number of producers make this difficult to apply.

6.5.2 Disincentives for producing high quality products

The informality of the micro-enterprise may be a disincentive for the micro-entrepreneur to produce goods of high quality. The lack of security of tenure, no brand loyalty and the continuous price undercutting are factors that discourage high quality production in the sector.

When an entrepreneur does not know whether he will be able to carry out his operations normally without disruptions, he is unwilling to invest money in new equipment even for replacement, let alone expansion. He is unlikely to embark on making new products. Under these conditions the enterprise will stagnate and if the situation stays the same for long, the quality of its goods will keep on falling. Eventually, the owner will just wind up. It is no wonder that most enterprises barely last five years. Only 35 per cent of respondents indicated that they had been in operation for more than ten years. A visit to one location after one year revealed that 30 per cent of the respondents interviewed earlier had quit operations. It is therefore evident that many micro-enterprises do not live long enough to consolidate operations and develop new technologies. It is also evident that of those young people who joined the sector twenty years ago, few are still in the sector as shown by the fact that only 8 per cent of the respondents were forty years and over.

It is difficult for consumers to distinguish the products of one producer from those of another. In consequence there can be no loyalty to a single producer since there are no brand names or trade marks. Manufacturers of high quality products thus do not get recognition and rewards, and those of poor quality products do not get punished. This anonymity led to 68 per cent of the respondents to indicate that they would welcome a way of identifying each manufacturer's products.

It has also been observed that for some products, most consumers cannot tell the difference between high and low quality. For example, consumers may not be able to differentiate between hoes made of carbon steel and those made of mild steel. In these cases, the producer may not find it profitable to produce high quality products. The situation gets worse if producers of similar products at a lower quality level, sell at lower prices. This would discourage any production of high quality products.

The attitude of producers also acts as a disincentive in the manufacture of high quality products. If the producers believe that they are producing superior products, even though they do not, simply because their products find buyers, then the incentive of producing goods of high quality or improving quality is lost. Twenty-four per cent of the respondents felt that their products were of superior quality while 75 per cent felt that their products were of good quality. In comparison to products of the formal sector, 64 per cent of the respondents indicated that their products were of better quality. This attitude is reinforced by the evidence that 58 per cent of the respondents felt that they had not lost customer goodwill due to some of them producing goods of low quality. On the positive side 42 per cent felt that they had lost customer goodwill and there was need for improving quality.

6.5.3 Overcoming the Obstacles

Discussions with producers revealed a deep concern over the quality of their products. Majority of them felt that there was room for improving quality through product modifications and technology improvement. Training and setting standards were also suggested as ways of improving quality of products.

On the basis of the foregoing analysis, the working proposition that micro-entrepreneurs lack incentives for producing high quality products is tentatively accepted. My reservations on full acceptance relate to the lingering doubts surrounding the issue of competition. In an economy where the consumer has very limited choices, competition is a still born and hence cannot be expected to give impetus to high quality production. On the other hand, in a sea of anonymity, where life is so precariously balanced on sales, the sale might hinge on price rather than quality. As a consequence, it is highly probable that the producer will focus on the narrow perspective of price.

6.6 Low Value Products

The fifth proposition was “Consumers do not get value for money by purchasing from the informal sector”.

6.6.1 Factors influencing purchasing from Informal Sector

With the low prices associated with informal sector products, it would be expected that the consumer gets value for money. However, besides price, consumers expect products that perform well, are durable and give total satisfaction. Consumers rarely get these in the sector.

Respondents were influenced by price, quality and availability in buying from the sector.

Price was found to be the main factor. It could be argued that the sector offer lower prices than the formal sector or that the consumer is usually desirous of a “less perfect” product at much lower price.

Majority of the respondents indicated that they got their money’s worth by buying from the sector. However, 33 per cent of the respondents felt that the price charged by the micro-entrepreneurs did not represent the products’ worth. The belief by the general public that products made by micro-enterprises are cheap is hard to counter given the imperfect nature of information about products in the market. However,

producers may take advantage of this belief and charge high prices. During this research, a price comparison was made of frying pans, hoes, wheelbarrows and knives. The results were somewhat surprising as shown below.

Table 1 : Price comparison of formal and informal sector products

Product	Sector		
	Informal	Formal(local)	Formal(imported)
Pan	350	300	300
Knife	80	60	60
Hoe	60	150	240
Wheelbarrow	1300	1400	-
Pot	160	140	-

(All prices in Kenya shillings)

It is evident that for some products the informal sector has higher prices than the formal sector. It is usually the fast going items whose prices are likely to be higher. Some respondents indicated that they were aware of this and hence they check prices in the formal sector before buying from the informal sector. However, this search may not occur in many cases for several reasons. First, the substantial time needed for this kind of search may not be available. Secondly, the inconveniences of searching may not make it worthwhile. Finally, the majority of the consumers of the sector's products are completely unaware of this imbalance. However, the above observations do not necessarily lead to the conclusion that all prices in the sector are high.

The inability of the formal sector to provide a reliable supply of some products distorts the pattern of demand. In the absence of choice, the true demand pattern may be

masked by the recurrent inability of the consumer to locate his or her preference. Thus the consumer is sometimes forced to buy from the informal sector because the formal sector does not have the product. For example, a consumer may find that he or she cannot get a pot with the right gauge of material from the formal sector and hence resorts to the informal sector. Moreover, some products are only manufactured in the informal sector. For example, tin lamps, braziers, water buckets and crowbars. It is likely that the formal sector has not ventured into the production of these items because of the low quantities demanded.

Quality was also found to influence people in buying from the sector. However, quality in this case was represented by durability. It is possible that one or two attributes of quality may influence choice. One attribute may also stand out for a general class of products. Forty per cent of the respondents indicated that it was quality that influenced them to purchase goods from the sector. Closer examination revealed that 80 per cent of those chose the products because of durability. In fact 48 per cent of the respondents indicated that it was the products' durability that fulfilled their requirements. We recall that there are two aspects of durability, that is, technical and economic. Survey responses indicated that it was economic durability that influenced most respondents. The investment required relative to the income of the buyers leads us to this conclusion.

6.6.2 Consumer Satisfaction with Informal Sector Products

The majority of the respondents felt that products from the micro-enterprises fulfilled their requirements in terms of durability, low prices and to a lesser extent, performance. However, many of them felt that the products failed in terms of appearance, workmanship and finish. Some respondents also felt that they also failed in terms of materials.

Many of these products are either imitations of those manufactured in the formal sector or they are adaptations of traditional products. The formal sector products are usually designed for different manufacturing conditions than those found in the informal sector. Thus the superimposition of a formal product on informal sector manufacturing fails to achieve the requisite quality as intended by the design. For example, a frying pan is designed to be pressed so that it can attain a particular shape and surface smoothness. The same product, when produced with techniques and tools of the informal sector, comes out with a poorer surface finish and uneven shape and depth. This poor finish gives the product a poor appearance and hence a dissatisfied customer.

In the formal sector, technology has become more complex and production quality is less dependent on the skill and attitude of workers and more dependent on the design of production machinery. In contrast, due to the intensive use of manual techniques, quality is an integral part of workmanship in the informal sector.

Workmanship simply means using any kind of technique or tool, in which quality of the result is not predetermined, but depends on the judgement, dexterity and care which

the maker exercises as he works. The essential idea is that quality of the result is continually at risk during the process of making.

The workman's achievement may differ from the ideal for three quite separate reasons: it may do so because he has no time to perfect the work, it may do so because he intends that it shall, and finally it may do so because he has not enough knowledge, patience or dexterity to perfect it. The resultant poor workmanship in the informal sector could be due to any of the above three reasons.

Better workmanship is usually associated with higher prices. It is argued that better workmanship takes time and the achievement of this perfection should be rewarded. Thus better workmanship would imply higher prices of the products and it is assumed that many consumers would not be ready to pay for it. Hence the rough workmanship.

Poor workmanship could be attributed to having little time to perfect the work. Usually the micro-producer has very little capital and it has to be recycled quickly. Taking too long to make a perfect product would mean less products for sale within the sale period and hence tying capital in production. Further, the time taken to produce may make a difference between having a meal or not. One producer said that “sometimes we produce poor products that sell cheap so as to have money to buy food”. The end result is poor workmanship, in a hurry to make a product to be sold during the day it is made. On the other hand, poor workmanship may be due to lack of skills. In such cases, poor workmanship suggests ineptitude.

The quality of informal products is also dependent on the quality of recycled materials. Normally this will vary from source to source and from one day to another. This could explain why some respondents complained of materials sometimes being non-standard. One consumer said that “ some pans are lighter than a plate while others are heavier than a digging hoe”. The consumer expects that the product bought in one day should be the same as another bought at another time. However, this is difficult to ensure in the sector and hence a dissatisfied consumer.

6.6.3 Comparison of Informal and Formal Sector Products

Consumers are always making comparisons between products of different producers. Informal sector products are continually compared to those of the formal in terms of price, quality and other attributes.

Our results show that there was a difference of opinion between the middle-income and low-income respondents in their comparison of products from the two sectors as shown below:

Table 2 : Comparison of Informal and Formal Sector Products

Informal sector products are superior		Similar		Informal sector products are inferior	
middle	low	middle	low	middle	low
7	61	0	29	83	9

The differences could be explained by the expectations different groups have of products. At higher incomes the characteristics of goods consumed are more refined, that is, better quality, more uniform standards and more luxury. In so far as informal products are directed to satisfy the needs of those with low incomes, then they do not embody high-income characteristics. Hence those with higher incomes will tend to lose and hence the dissatisfaction expressed by the middle-income respondents.

Differences in taste stemming from greater exposure and other influences conditioning demand may also explain why middle-income respondents felt that informal products were inferior. Lack of such exposure would thus explain why low-income respondents felt that the products were superior. This is reinforced by the findings of product value survey which showed that formal sector products were valued more than those of the informal sector.

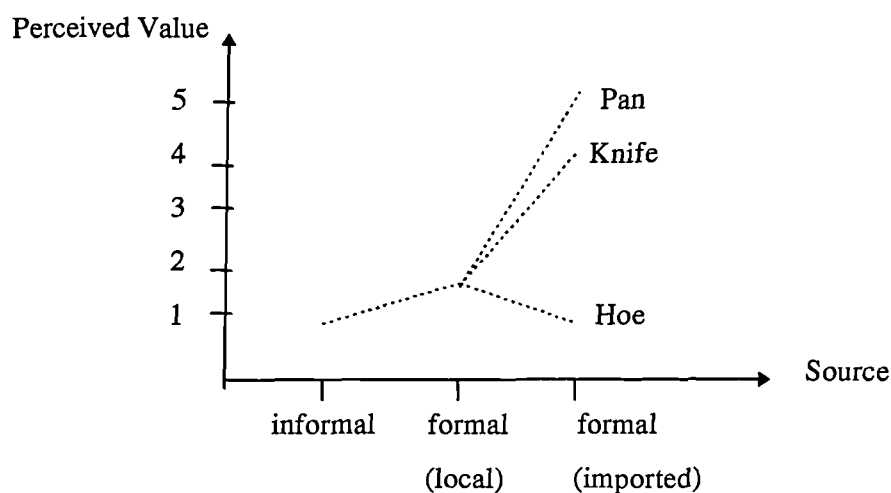


Fig. 6 : Perceived Value of Products

By displaying products from both the informal and formal sectors, the survey achieved a sense of balance when comparing products of both sectors. Due to the physical presence of the products, the respondents could detect the attributes present in formal products and absent in informal products. Consumers did not like the imported hoe. On being questioned, some told us that they disliked it because “it was too light” while others disliked it because “it was too wide”. Thus the poor quality of the hoe could be attributed to its design. Its poor design was due to designers not utilising the knowledge of consumers and farming conditions in their design process. In conclusion, the comparison gave conclusive evidence of the shortfalls of informal sector products which lead to consumer dissatisfaction.

6.6.4 Seller Behaviour and Service Conditions During Sale

It would be expected that the close contact between the producer and consumer in the sector would lead to greater consumer satisfaction. However, the sales experience usually leaves many consumers dissatisfied.

Consumer attitudes and expectations are affected by the experiences of other users and any prior experience with the sector and its products. These attitudes are affected during sale by price quotations and the overall atmosphere of the location in which the transaction takes place. The combination of these factors create a certain set of attitudes about the sector, its products and the degree of satisfaction that a customer expects. All the respondents claimed to have had a nasty experience with informal

sector or they had heard of one from someone. Twenty-four per cent of the respondents complained about the high prices that are usually quoted. High prices are usually quoted by sellers, who are not necessarily the producers, so as to extend the bargain range to their advantage. Sometimes the prices quoted are so high that many consumers proceed on to the next seller. The net effect is an annoyed customer whose experience will be shared by many and hence the poor image of the sector. In addition, many respondents complained that products are usually sold on the basis of a “force-fit”, that is, the product’s price is right but it does not meet the customer’s requirements and this is realised when the product has been consumed.

The location in which the sale takes place is usually noisy and many sellers run after customers. The atmosphere is thus unfriendly and sometimes scary. The consumer feels harassed and many feel dissatisfied with experience.

Everyone who comes in contact with customer projects attitudes that affect the customer. Consciously or subconsciously, the buyer is always evaluating the sellers approach to doing business, how he deals with customers and how he is likely to treat him or her. Attitudes are reflected in actions of those he or she comes in contact with and includes courtesy, sales knowledge (product knowledge and information about applications) and sales focus (whether they concentrate on identifying and meeting their customer’s needs or are merely interested in pushing their products, however unsuitable, to create a sale). Twenty-nine per cent of the respondents complained that those who sell products in the sector are rude, use a language that demeans the

intelligence of their customers and display some ignorance of the products they sell.

One respondent lamented that “some sellers run to customers displaying a pan and claiming that it is made of stainless steel while you can see it is an aluminium pan”.

Producers are not always the people who sell the products in the sector. Sellers could be middlemen, apprentices, or piece-rate workers. Usually these have very poor knowledge of the products and their interest is making a sale. Further, they do not usually deal with consumers but when they do, their inexperience and lack of interest usually show. Besides, the lack of any identification marks on the products make those with poor customer relations go unpunished and hence cannot ensure any corrective behaviour.

A basic element in the informal sector operations is trust. In the absence of contractual agreements, a customer requires assurance that what is agreed between him or her and the producer will hold both in terms of customer satisfaction with the product and price negotiated. The customer needs to be assured that what he or she buys from the producer or seller will work as the seller said it should and that if the product does not work as promised, he or she can return it for rectification or replacement. In many cases, these conditions are not met causing consumer dissatisfaction with the products. Many consumers claimed that “producers never keep their promises”. There are many reasons why these conditions are not met. First, the producer does not necessarily have a permanent place where he produces his ware and hence returning goods for rectification or replacement is not possible. Second, there is no distinction between a middleman and a producer and hence you can never be sure who you are dealing with.

Third, middlemen do not care about customer relations because they are not permanently based in one location and their interest is current sales and not on repeat sales.

On the basis of the foregoing analysis it can be concluded that the consumers are not generally satisfied with the sector's products and hence the proposition is accepted.

6.7 Interventions to improve quality

The last proposition was “ Interventions are required to improve the quality of the informal sector products”.

6.7.1 Applications of Interventions

As postulated in Chapter 2 , several interventions were tried in the informal sector with the aim of improving quality. The results are presented below.

Case Study-Introduction of new product

A Nairobi blacksmith was approached with a proposal for making axes. This was in line with his product range since he was already producing crowbars and chisels for stone dressing and metal cutting. At first he was reluctant to make axes but after being convinced that it would not require different materials from the ones he used, he agreed.

The first axes were crude and were not appealing. A formal sector axe was brought and compared to his product, and through the discussion he came to appreciate the differences. The formal sector product was used in this case in order to utilise the method that the producer was familiar with in getting information about new products. The knowledge acquired during these discussions was later used to improve the quality of the subsequent axes. These axes improved and were later painted thus improving their appearance.

The axes attracted the attention of one customer who requested the blacksmith to make a product that combined both the axe and hoe. This involved welding. The product (axe-hoe) was made and the customer ordered 120 pieces. This production did not end there because the blacksmith adopted this product as one of his own.

The blacksmith extended the idea to making digging forks using recycled leaf springs as raw material. The forks were welded together. After welding, the forks were tempered to relieve stresses. These forks were found to be superior to those made by other producers. Thus the knowledge he acquired from making axes was subsequently used to introduce and improve other products.

Case study-Product improvement

The consumer survey revealed that the frying pans manufactured in the informal sector lacked good finish and their aluminium handles got too hot to hold during cooking. This case involved replacing part of the handle with a wooden one.

A producer of frying pans was asked to participate in this case. It involved a discussion with the producer to solicit ideas from him on the ways he would improve the handle. He came up with two versions. The first involved the use of a short galvanised steel pipe with a mild steel piece welded to it which was then riveted to the pan. The second involved the use of folded aluminium sheet with a wooden bit force-fit into it.

Both designs of pans were made and after successive improvements two pans from each model were offered for sale along side other pans that he had made. The aim was to observe whether customers would prefer those with handles. Several customers were interested in these improvements especially the one with an aluminium and wooden handle.

With increased consumer interest the producer was asked to put a price on them. His prices were very discouraging - they were too high. These were later reduced to a reasonable level.

When asked to invest in this improvement, the producer was very reluctant.

There were several problems with this intervention. First, the producer was reluctant to change from what he was familiar with despite his agreement that the wooden handle made the pan more appealing. Second, by subcontracting for the production of wooden handle, he felt he was losing control of production. The producer believed that “by using wooden handles, my production will always depend on carpenters and they are unreliable”. Third, he saw the wooden handle as an extra cost despite the fact that the amount of aluminium previously used for one pan could now be used for three pans

with wooden handles. Fourth, he wanted to use unskilled carpenters to make the handles to reduce cost. However, these handles made the pans very unappealing. Finally, his costing proved to be unrealistic.

Case study-Process improvement

The case involved the addition of an extra operation to a process.

Shortages of materials (leaf springs) had forced a blacksmith to use mild steel for making stone dressing chisels. The blacksmith was approached with a proposal for adding carburising operation to his process in order to harden his chisels and hence improve their quality.

The main advantage of the added operation was its low cost. However, it took a long time which the blacksmith thought could be used more economically. The blacksmith recognised the superior quality of the resultant chisels but argued that these qualities were not visible to the consumer and hence any addition in price would send the customers to the competition.

The economics of this process were compared to production of other products. It was evident that it was difficult to convince the producer to adopt this operation as shown in the following table.

Table 3 : Profitability of Process Improvement

	Producing and carburising chisels	Producing uncarburised chisels	Producing crow-bars
Output-items per day	50	100	100
Cost of metallic materials (Kshs.)	250	500	1500
Cost of charcoal (Kshs.)	340	340	340
Value of sales (Kshs.)	1500*	2500*	7000
“Net profit” (Kshs)	910	1660	5160

*the price premium obtainable for hardened chisel was found to be 20%.

Case Study-Trademarking

There is one producer of trolleys in Nairobi’s informal sector metalworking. He was selected because he operated at a higher technology level and also he occupied a unique position of being the only producer of trolleys. The product is not easy to copy. Further, his product had penetrated the formal distribution system.

The producer was approached with the idea of printing labels for his trolleys with the aim of expanding their market. Although he was very enthusiastic in the beginning, he did not take up the idea. On being questioned on why he did not go ahead with it, he revealed that he had costed the idea and found it acceptable. However, he was afraid

that if his trolleys carried his name and address, the authorities would be able to trace him to demand taxes. This demonstrated the need for creating an enabling environment so that producers operate without fear.

With the evidence presented in the above case studies, the proposition that interventions are required in order to improve the quality of informal sector products is accepted.

6.8.3 Lessons from the Case Studies

Though the case studies presented in the previous section were few and did not cover all the envisaged interventions, a few generalisations can be made from these experiences.

The case study involving the introduction of a new product demonstrated that the process of intervention can empower producers through building of confidence which in turn can generate fresh innovations. Therefore interventions should not only be product focused but also process oriented. The knowledge of the producer and consumer should be used thus building the producer's esteem and hence breaking down the resistance to change.

These case studies also demonstrated that development of the informal sector should be looked at as a process of gradual change. Where improvements need to be made, progress towards these should be incremental rather than radical, so that the potential for their adoption is greater. The changes have to be kept within the limits of what the

producers and consumers are accustomed to in order to promote acceptability. In this connection, it is advisable, wherever possible, to improve products whose deficiencies have already been identified by producers or users.

Producers at higher levels of technology are more congenial to accepting change. The fact that they operate at higher levels of technology is evidence of their having accepted change at one point. Those at lower levels may feel threatened by change and may fear losing control of their production. The lower the technology, the more the producer feels that production is an extension of his hands rather than utilisation of technology to attain a certain goal. It is for these reasons that interventions should be aimed at those producers operating at higher levels of technology. In addition, those at higher levels of technology are usually more educated and hence their appreciation of technology greater.

In many cases, interventions may be directed at a particular problem only to find other problems interfering with the process. This could be because specific interventions are based on the assumption that one can hold other variables constant while dealing or varying the one of interest. For example, the introduction of the axe as a new product could have highlighted the issue of marketing. The acceptability of a product or improvement of quality may require selling in parts of the market that the producer has not ventured into before. Thus interventions should be guided by research into the markets for the products and the feasibility of micro-entrepreneur's access to those markets.

Improvements of quality have to be seen in the light of the low returns that characterise the informal sector. Quality improvements have to be viewed as an effort by the producer that must be rewarded in terms of recognition and increased income. These are difficult to guarantee in a sector where it is not possible to distinguish products of one manufacturer from those of another. At the same time, consumers are normally skeptical of the quality of informal sector products. Therefore any quality improvement that cannot be demonstrated or which is invisible to the consumer is not likely to be beneficial to the producer or acceptable by the consumer.

Quality improvement for a product depends very much on the dispersal of consumers with respect to their sensitivity to quality variation on the one hand and price variation on the other. In the high-income part of the market, we would expect the former to be relatively high and the latter, relatively low. On the other hand, we would expect that in the low-income part of the market, the latter would be relatively high. Thus quality improvements have to be oriented to particular segments of the market to ensure success.

An increase in the quality of a product normally entails an increase in costs: otherwise there is no need for anybody to produce a product of low quality. The increased cost could result from more use of skilled labour relative to capital, or the other way round. There is no priori reason for the higher-quality products to be more capital-intensive, but technologically and as an empirical phenomenon, this is likely to be so in many cases. Thus the thrust either has to be quality improvement that is technology-led or

technology development that is quality inspired. In either case, more resources are needed.

6.8 *Conclusions and Implications for Interventions*

6.8.1 Conclusions

The quality of the informal sector products is low due to the use of inadequate production facilities and processes, poor quality materials and low level of skills in the sector. The quality may be improved through either changing these various inputs or raising their quality. Change of inputs would require a heavy investment in resources which the sector does not have. Raising the quality of inputs will involve lower investment in terms of upgrading the skills through training, use of better quality materials by imparting knowledge of materials to the micro-entrepreneurs, improvement of processes etc. The micro-enterprises on their own will not be able to effect the changes necessary to improve quality.

Some technological capability exists in the sector. The low level of this capability is due to the low level of skills and education, lack of resources, and over-dependence on the formal sector. This capability is only expressed through imitation of products from the formal sector and production of simple tools. It's extent is shown by the absence of technology development or adaptation in the form of machinery and equipment.

Consumers are able to judge the quality of products despite the lack of trade names or marks in the sector. Though consumers may be satisfied with the durability of the sector's products, product finish, appearance, workmanship and to a lesser extent performance, are aspects of quality that they are not satisfied with. In addition, the seller behaviour and attitudes project a poor image of the informal sector which lowers the level of product quality in the consumers' eyes.

The anonymity of the sector's products in the eyes of consumers inhibits producers of good quality from being rewarded and those of poor quality being penalised. This may drive good quality out of the market. A related aspect is the frequency in which the consumers make use of formal sector products in their evaluation of quality of informal sector products. This suggests that formal sector products should be used as benchmarks against which informal sector products should be compared.

6.8.4 Implications for Interventions

It seems clear that interventions which favour the growth of micro-enterprises in general will encourage them to improve their technological capacity. These include interventions to promote demand for informal sector products, to promote investment in productive assets, to improve workers skills and to improve the environment under which micro-entrepreneurs operate.

The picture emerging from the case studies is that interventions need to be taken at both sectoral and enterprise levels.

There are those interventions that are needed to improve the environment in which the micro-entrepreneurs operate. These include government recognition of the informal sector as a viable part of the economy and creation of a positive environment where the entrepreneurs are not harrassed by authorities. In addition, promotion of research and development in areas of technology and marketing would go a long way toward helping micro-enterprises. The government would be expected to play a major role in these areas.

At sectoral or activity level, interventions are required to create awareness of quality as a competitive strategy, improve consumer relations and consumer education to improve the image of informal sector and its products. Subcontracting within and without the sector coupled with certification are also viable interventions. These are best undertaken by producer associations.

At the enterprise level, interventions should be directed at product design, process technology and skill development. These are the most difficult interventions to effect because they have low multiplier effects and may not be cost-justified on such scale. They also raise the problems of who is to do it and which enterprises to target.

On another level, functional interventions could also be undertaken. These interventions have the advantage of cutting across activities or just focusing on one activity. For example, a common problem in metalworking activities is scarcity of raw materials. A solution to this problem would affect all enterprises engaged in these

activities and hence the benefits would be widespread. These could be justified due to their multiplier effects.

The issue of timing of interventions is another area worth our interest. Interventions at enterprise level without ones at sectoral level may not have much impact. For example, raising the quality of frying pans without eliminating harassment by local authorities may not encourage the micro-entrepreneur to invest in a piece of technology whose need may arise out of the quality improvement process.

Improvement in quality will bring the micro-enterprises in direct competition with formal sector enterprises. Micro-enterprises would encroach on the high-income market which currently is a preserve of the formal sector. Access to retail and distribution networks would thus become an issue worth looking at.

Consumer satisfaction is poor partly because of the low level of technology used and the low quality products that results from that technology. To enhance consumer satisfaction would entail either raising the level of technology or improving the quality of products. Both quality-led technology development and technology-led quality improvement are relevant in the sector. However, which of these approaches is adopted will depend to a large extent on the product and the factors contributing to its low quality. For example, by aiming to improve the quality of braziers, the technology of making ceramic liners was improved. Similarly, by aiming at reducing the human energy expended in the production of frying pans, the quality of the pan could be improved.

To enhance the technological capability of the informal sector, an important prerequisite is at least some exposure to technology alternatives. One way of increasing technological capability is therefore to disseminate information as well as provide opportunities for acquiring first hand experience, which could be done at relatively low cost where the units are geographically clustered. Few countries have created indigenous research and development capacity to serve the informal sector. The need for the creation of technology centres to assist the sector to upgrade its technologies, through dissemination of information, research and development is not far fetched. This could be undertaken by the government in collaboration with producer associations. Another way of enhancing this capability is to minimise technological dualism by encouraging the flow of technology from the formal to the informal sector. But technologies available off-the-shelf are generally intended for the formal sector and do not match the factor endowments or conditions prevailing in the sector. There are good reasons for promoting technology adaptation or innovation specifically for the sector. The resulting technologies are more likely to reflect the true scarcities confronting this sector. Building technological capability in the sector could thus lead to more productive and yet labour intensive technologies.

The issues touched upon in this chapter raises two questions concerning the market. The first relates to the possibility of overcoming special restriction of demand and thereby distributing products on a large scale, and the second to the way in which supplies are purchased. Raw material supply could be better organised through encouraging a few micro-entrepreneurs to search, classify and stock these materials

near the production centres. To boost demand for products, fairs for promoting products manufactured in this sector could be organised in the short run. In the long run, the micro-enterprises would need to target the high-income consumers in their production both in terms of variety and quality of products.

If the sector is expected to expand the market , it has to improve its products' image. Clearly product image is influenced by quality. However, image and quality are not identical because of the inability of consumers to incorporate important factors in quality judgement due to difficulties of getting information on products. Consumer information could be improved through consumer and producer education.

To move into high income market, the sector has a few strategies open to it. First, it could improve those quality aspects of its products that seem to dominate consumer choice - workmanship, appearance and finish. Second, it could develop ways of branding or trade-marking where quality factors other than finish can be rewarded.

Most micro-enterprises address the needs of low-income consumers. These needs are characterised by an overriding interest in functional attributes of the products. By contrast, high-income consumers, while interested in functional attributes are also interested in non-functional attributes. To tap the market of high-income consumers, the micro-enterprises may need to improve performance-related elements of quality but primarily need to make their products more appealing in sophistication and finish. High levels of sophistication and finish often require a change in production process.

Another way of expanding the market is through subcontracting. Subcontracting typically involves a small cluster of large prime contractors in a galaxy of small, satellite subcontractors. Large and medium production units are however strongly oriented toward manufacturing products using imported components. This has resulted in lack of intra-sectoral and inter-sectoral linkages. Part of the underdeveloped nature of the informal sector could be attributed to the lack of these linkages.

Finally, formal sector products are characterised by trade marks and brand names that help to characterise products of different producers, enable high quality to be rewarded and provide information cues to the consumers. This allows differentiation that gives the consumers variety of alternatives to choose from. In contrast informal sector products do not have trade marks or brand names. Branding or trade-marking would give consumers higher satisfaction due to differentiation and would help producers expand business.

CHAPTER SEVEN

CONCLUSIONS

The study presented in this thesis has sought to shed light on the quality of informal sector production. It shows the extent of the quality problem and has identified the factors that contribute to this low quality. It has also examined some mechanisms that could be used to alleviate the quality problem.

7.1 *Summary of Finding*

The evidence presented in the previous chapters suggests several conclusions. To start with, goods made in the informal sector are of poor quality, at least in the activities we have considered. Consumer goods dominate the sector's production. These goods tend to lack attractive finish and are poorly constructed. They failed in their fulfillment of functional needs as well as non-functional needs, such as, aesthetics and features. The low quality could be attributed to inadequacies in design, raw materials and quality control and to the low level of technology prevalent in the sector.

Design capability does exist in the sector. This capability tend to be largely used for finding ways to circumvent the lack of resources in order to maintain the enterprise rather than for the development of products and processes to improve competitiveness.

Design is not practised a lot because it involves cost which the producer can not meet from his low level of resources, and uncertainty surrounds the marketability of the results. Increased accumulation is required to finance design and this may come from increased product quality or liberated time due to the use of high level of technology, rather than from increased production alone.

Shortage or substitution of materials lead to changes in design and modifications of technology to fit the available materials. The inadequacies in design changes and technology modifications lead to poor quality. Improvement in the knowledge of materials may lead to better selection of materials.

The low level of technology resulting from low investment could not be expected to produce high quality products. Poor quality control and lack of commitment to quality, magnifies the quality problem. Most micro-entrepreneurs could certainly improve their technology and product range given some technical support. The lack of research and product development efforts in the field of low-cost technology seems to have been heavily felt, as shown by the findings. Lack of know-how and of appropriate tools were some of the major reasons why micro-entrepreneurs had not improved their products.

Technological capability was shown to take many forms: new product design, improvement of quality of existing products and self-construction of tools. The low level of technological capability is attributed to low level of education, inadequate technical training and limited experience of micro-producers. The poor image the

public has of the informal sector and the poor conditions of work and pay discourages those with higher education from joining the sector. Inadequate training results from limited knowledge of those who train and their insufficient commitment to training. Lack of linkages between formal and informal sectors prevents the flow of information. Moreover, the technology used in the former is inappropriate to the latter in many ways. Quite often the micro-enterprises may have the capability but may be unable to realise technological improvements they desire because they lack support services, the inputs or just finance.

The research suggest that technology adaptation was mainly limited to production of a replicas of products from outside. These findings suggest that there is little innovation in the production of machines and tools in the sector; but micro-enterprises do seem capable of producing items that are known to exist and simple to replicate. This is not surprising, since technological innovations do call for considerable research and development expenditure which is generally beyond the reach of the micro-enterprises.

Another finding of this research is that consumers are able to evaluate quality contrary to our earlier proposition. Product performance, durability, reliability and aesthetics were some of the product characteristics the consumer used to judge quality.

However, due to difficulties of evaluating these characteristics before consumption of the product, surrogates such as materials, appropriateness, workmanship and appearance, were found to be important in judging quality. Price was not found to be an indicator of quality but it influenced the decision to buy from the informal sector.

Competition provided an incentive for improving quality. However, where micro-enterprises were unable to compete, they co-operated in fixing prices of their products. Uncertainty, anonymity of products and negative producers' attitudes are some of the disincentives that discourage production of high quality goods. Trade-marking and legal recognition would encourage these enterprises to improve quality.

Informal sector products fail to satisfy consumers due to poor workmanship, appearance, finish and to lesser extent performance. At the heart of these shortcomings is the low technology level and skills in the sector. Consumer satisfaction was found to be further eroded by the poor seller behaviour. Clearly better consumer relations are called for to uplift the poor image of the sector and its products.

Micro-producers operate in the open without adequate space or other utilities. It is generally believed that micro-enterprises deliberately choose to operate under such conditions in order to keep their production costs low and thus remain competitive. In some cases, market imperfections may also explain the concentration of micro-enterprises in poor locations. The net result of this seems to limit the acquisition of more capital equipment. In large urban agglomerations it is not easy to relocate owing to scarcity of land. Sectoral interventions are therefore needed in order to improve the environment in which micro-entrepreneurs work.

Finally, despite the expectations of policy makers, the findings lead us to conclude that in its present form the informal sector is not capable of providing employment to many of those who are unemployed and to the majority of those newly joining the labour

market. The low level of technology does not allow individual micro-enterprises to expand. The constrained market cannot provide enough demand to warrant the setting up of more micro-enterprises. Clearly, interventions geared toward process, product and skill improvements may expand the sector in a small way, but not to the extent of accomodating six million Kenyans by the year 2000. In fact, to believe or contemplate that the informal sector can be an alternative model of development is to neglect the lessons learnt from countries that have managed to break from the shackles of poverty.

7.2 *Implications of Research Findings*

The picture emerging from this research is of a sector that is plagued with quality problems and poor image and is in need of improvement.

It was not initially intended in this research to examine whether government intervention is desirable; nor to speculate on what mix of interventions would be tolerable. The sector, however, is firmly in the political arena. The population growth has made policy makers look at it as a panacea for unemployment problem. The decline of the formal sector make it a source of goods for many people. Though observers often point to the need for minimum government intervention, previous policies which favoured formal sector make it unrealistic for the government to keep off. It could be concluded that micro-entrepreneurs would welcome more direct interventions from the government such as recognition, cessation of harassment by local authorities, provision of land, etc.,.

The main hope for government interventions lies in the opportunity for officials becoming attuned to the kind of problems facing particular activities within the sector. In this direction, it is suggested that separating of informal sector activities into trade and manufacturing may lead to clearer understanding of the sector. Thinking of competitiveness of informal manufacturing may well provide a better focus on interactions of technology, market and employment. Distinguishing trade from manufacturing would benefit manufacturers through provision of a forum for discussion and to stimulate collaboration.

Technology improvements at the enterprise level are strongly influenced by growth in demand for the final product. Since technology upgrading is closely related to the acquisition of machinery and equipment, policies should be so designed as to encourage investment by micro-enterprises. The removal of uncertainties through changes in the regulatory environment would encourage enterprises to acquire business assets.

If the sector is going to play its role in employment creation, the conditions of operations must become increasingly attractive for the better educated. On the other hand, the better educated members of the society must be provided with adequate incentives to persuade them abandon the streets to take up employment in the informal sector. Such a solution may give the sector the necessary skill endowment that would make it more dynamic.

Any steps to improve quality of informal sector products, must be taken in the light of the relationship between the formal and informal sectors. Improvement in quality will bring both sectors in direct competition. Thus interventions would be required to strengthen the sector's competitiveness. For this purpose it will be important to create adequate infrastructure for the micro-enterprises.

Informal sector associations have been criticised for their failure to provide real dialogue with the government and to resolve the problems facing the sector. Their inability to resolve the problem of uncertainty created by harassment by authorities and not searching for new market for the sector's products has won them no friends.

The principle of blaming individual micro-enterprises is not sound in theory because micro-entrepreneurs may recognise that they have a problem, but may not know where to seek assistance. There is need for interventions and a body to act as an external catalyst to stimulate quality improvements.

Combining market expansion and quality reorientation may reap many benefits.

Establishment of sales networks would give access to associations to institute quality measures and standards as prerequisites for purchasing from individual micro-enterprises. It would also expose the associations to the technological problems that producers face and seek solutions.

The difficulty in bringing about change in a sector possessing a poor record of investment and struggling to attract skilled people is recognised. Yet beneath this depressing facade, this research has identified pockets of capability and enthusiasm

waiting to be released. Indeed, I was frequently impressed by the outstanding abilities of certain individuals across the sector. Within their activities, particular people showed remarkable capacity for improvisation, as evidenced in their products and tenacity to make things work under severe resource constraints.

7.3 *Future Research*

A number of issues have emerged to indicate that this is a fertile area for further research. Such research might explore propositions on trade-marking. This would almost certainly open the debate on the appropriateness of propagating the informal sector as an alternative development model.

One particular topic worth empirical research is the possibility of enriching the apprenticeship system. Such research would explore different delivery mechanisms and the actual skill need of micro-enterprises.

Technological development is another area worth further research. Suitable ways of improving processes and products need to be explored. The need for expanding the range of products puts product design into the limelight. Different marketing mechanisms also merit research.

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appendix a : Producer survey results

Investment

Several questions were related to investment. Respondents were asked about their initial investment, tools owned before starting and their later investment in tools.

Table 4 : Initial Investment (158 responses)

Investment(Kshs.)	% distribution
< 200	19
200-1000	52
1001-2000	14
2001-3000	7
3001-5000	8
>5000	0

(Kshs. 50 =£1 (1992))

As can be deduced from the table above, 85 per cent of the respondents invested Kenya shillings (Kshs.) 2000 or less when they started their business. The question asked -“ how much did you spend to start the business?” - could have meant either the initial working capital or the total capital invested. A working capital of this magnitude would have been sufficient for buying raw materials for a very few days for most of the

micro-enterprises. However, as total investment this amount is low given the amount required to purchase tools.

Table 5 : Tools owned before start-up (174 responses)

	% distribution
Those owning tools	49
worth(Kshs) < 500	26
501-1000	11
1001-2000	7
>2000	5
Those not owning tools	51

The majority of our respondents did not own any tools when they started. Of those who owned tools, 76 per cent of them had tools worth Kshs.1000 or less. This level of tooling could have been sufficient for most respondents given that majority of those interviewed were sheet metal workers at low level of technology.

Table 6 : Purchase of Tools (197 responses)

	% distribution
Purchased tools since starting	97
from formal sector	88
from informal sector	28
No purchase	3

Though the percentage of those indicating they had purchased tools “since starting” is high, it is evident that most of them bought them as start-up tools.

Though 28 per cent of the respondents indicated that they had purchased tools from the informal sector, it should be borne in mind that the origin of most of these tools was the formal sector which shows the extent of dependence on the formal sector. In fact only 18 per cent of the respondents indicated that they had bought tools *actually* made in the informal sector.

Products

The relationship between the artisan and products was examined through a set of questions. These included the products manufactured, sources of design and whether the producer had improved the products.

Table 7 : Products Manufactured (189 responses)

Number of products	% micro-enterprises
1	28
2	7
3	22
4	16
>4	27

The diversity of products made indicates the expertise and capability of the entrepreneur. A low number of products is believed to indicate lack of expertise rather than product specialisation. However, manufacturing a variety of products could also be possible through employing piece-rate workers though the micro-entrepreneur may not have the expertise.

When asked whether they were producing the same products they started with, 66 per cent indicated they were.

Eighty per cent of the respondents indicated that they had improved their products. Most of the improvements were directed at enhancing product appearance to increase customer appeal. The low percentage(7%) of substantive improvements may suggest that product design is stagnant in the sector but a closer analysis reveals that even this low level is commendable given the low incomes earned by micro-entrepreneurs.

Table 8 : Design Modifications (180 responses)

	% micro-enterprises
Modified design	32
new design	11
new features added	9
other modifications	12
No modifications	68

The high percentage of micro-entrepreneurs that had not modified the designs may give the impression of lack of innovation in the sector. This is reinforced by the fact that 95 per cent of the respondents indicated that their designs were copied from the formal sector. However, 52 per cent of the respondents felt that products needed modifications and 47 per cent had not modified due to lack of tools and know-how. Thirty-five per cent had not modified their products due to lack of finance.

Sixty per cent of the respondents indicated that some of their designs originated from their customers. This gives the impression of high flexibility in the sector.

Raw Materials

Materials used by the micro-producers in the metalworking activities are obtained from formal dealers and informal sources such as scrap dealers and street peddlers. Eighty-eight per cent of the respondents obtained materials from the informal sector while 55

per cent obtained them from the formal sector. These figures overlap because some micro-entrepreneurs buy from both sources. Ninety-six per cent of them indicated they did so because of prices. Ninety-eight per cent of the respondents indicated that lack of materials sometimes held back production.

Training

Generally there are three main types of training available for would-be micro-entrepreneurs. These are training in vocational institutes, formal sector on-the-job training and informal sector on-the-job training. Within vocational training there are youth polytechnics at the lower level and institutes of technology at the higher level. Ninety per cent of the respondents were trained on-the-job in the informal sector and 9 per cent in youth polytechnics. *Only one per cent of them were trained in one of the higher institutes.* It may be due to the low levels of skills learnt in the sector that made 44 per cent of the respondents express the need for training. Of those, 64 per cent wanted training to improve their skills, 21 per cent business training and 15 per cent training unrelated to skill improvement or business.

Table 9 : Experience of Micro-entrepreneurs (194 responses)

Years of Experience	%
0-2	4
2-3	8
3-5	16
5-10	36
>10	35

Only 2 per cent had any experience in the formal sector and then only for periods less than two years.

Table 10 : Educational Levels of Micro-entrepreneurs (194 responses)

	%
No education	2
Less than 6 years of education	11
Completed primary education(7or8 years)	52
Some secondary education	36

Those who had completed primary education had either done seven or eight years.

There was change in the education system in the early 1980s. Those before then did seven years of primary education and those after eight.

Table 11 : Age of Micro-entrepreneurs (198 responses)

	%
Below 20	1
21-25	30
26-30	40
31-40	22
>40	8

Majority of those operating in the largest concentration of metalworking micro-enterprises (Kamukuji in Nairobi) came to the area after the sheds were built in 1988 with the hope of getting financial assistance to start manufacturing. Most of them were young school leavers. This partly explains why most of the micro-enterprises are about seven years old or less as shown in the following table.

Table 12 : Age of Micro-enterprises (198 responses)

	%
1-3	14
4-7	37
8-10	14
>10	35

Market and Competition

Almost all micro-entrepreneurs sell their products directly from their production areas. Sometimes different micro-entrepreneurs combine their marketing which could be due to shortage of space. Ninety-one per cent of the respondents said they sold products to individuals, 61 per cent to external wholesalers and 75 per cent to local middlemen.

Majority of the micro-producers were aware that they faced competition. Of those who faced significant competition, 90 per cent indicated it came from their fellow producers. These results are interesting because most of the designs used in the informal sector are copied from the formal sector which would suggest that the major competition would come from the formal sector. However, it may be that micro-producers visualise formal sector as producing for a different market from their own.

Understanding of Quality

Different micro-producers attached different meanings to the general term “quality”.

Majority of them understood quality to mean durability, performance or value for money. This may explain why some products made in the sector are of heavier gauge than those made in the formal sector.

Table 13 : Quality Attributes (191 responses)

	%
Performance	91
Features	63
Workmanship	100
Durability	95
Appearance	82
Conformance	63
Seerviceability	66

The above table show the responses of micro-entrepreneurs when they were asked what they consider to be the determinants of product quality. When asked how they would distinguish good quality products from bad ones, the micro-producers indicated materials used, product finish, appearance and workmanship. This suggests that immediate consumer appeal at the point of sale is the driving factor.

Judgement of the Quality of Informal Sector Products

When asked what they thought of quality of informal sector products, 24 per cent thought of them as of superior quality, 75 per cent as of good quality and 1 per cent as of poor quality. In comparison to the formal sector products, 64 per cent of them thought that informal sector products were superior, 11 per cent thought they are the same and 26 per cent thought formal sector products were superior. Majority of the micro-producers felt that their products were of superior quality because they were made of better materials and were more durable. The minority felt that formal products were better because they were more appealing and their products had poor workmanship.

When asked whether those who produce good quality products are adequately rewarded, 78 per cent of the respondents felt that micro-producers of good quality products were rewarded through high prices for their products, more customers and higher turnover. However, 42 per cent of them felt they had lost customer goodwill due to others producing poor quality products. Training, setting standards and being trustworthy were suggested as ways of avoiding loss of customer goodwill. Sixty-eight per cent of respondents felt that there was need for distinguishing products of each producer through labels, identification marks or stamping.

Collaboration with other Producers

There is a fair amount of collaboration between businesses of similar nature, which could become the basis for the diffusion of technological innovation. Such collaboration was reported. Seventy-five per cent of respondents collaborated in price fixing, 39 per cent in exchange or mutual use of tools but only 7 per cent in production methods. The low rate of collaboration on techniques or product design could be explained by most of the micro-enterprises being clustered together in one area so that any change in product design or in production method is easily observed and copied by others. However, 20 per cent of them expressed fear of their designs being copied.

appendix b : Results of first consumer survey

Consumers expect that the satisfaction they seek in their purchases is a total value concept of quality. A key to success in production has been and is always likely to be the ability to understand the character of consumer expectations and to respond effectively to them.

This survey was undertaken to examine whether the consumer is able to judge quality of products, whether the consumer understands what quality is and if so what does he or she understand it to be. It was also undertaken to see what the connection is between quality and price in the consumers' behaviour, the consumers' attitude to informal sector products and how this attitude is affected by social influence.

The survey involved interviewing 80 respondents at random and gaining their views on the above issues. Most of the respondents in this survey were middle-income consumers.

Judgement of Quality

When asked what they consider in judging a product's "goodness", consumers mentioned the following:

Table 14 : Attributes in Judging Product Goodness (80 responses)

	%
Performance	48
Durability	49
Aesthetics	48
Reliability	23
Features	20
Quality	38
Price	48

The inclusion of price suggests an association of goodness with value.

When consumers were asked what they consider when comparing two similar products the answers were as follows:

Table 15 : Attributes in Comparing Products (80 responses)

	%
Performance	30
Durability	31
Aesthetics	40
Reliability	14
Quality	32
Price	68

When faced with a choice of similar products, the consumer may base his or her evaluation on the information cue which he or she has the most confidence. The appearance and price of a product are such cues. It may be that a consumer has more confidence in price than other cues when comparing alternatives.

When asked what they understood by quality, and the attributes they consider when judging the quality of a product, the responses were as follows:

Table 16 : Understanding and Judging Quality (80 responses)

	%		
	Understanding of term quality	Attributes in judging product quality (unprompted)	Attributes in judging product quality (prompted by list)
Performance	76	64	91
Durability	50	60	96
Aesthetics	24	34	56
Reliability	18	18	91
Features	-	14	28
Manufacturer	-	-	41
Serviceability	-	-	82
Conformance	-	-	35
Country of manufacture	-	-	23
Price	9	13	-

Many consumers equate goodness with quality. Many of the factors mentioned would usually be considered as quality attributes. The concept of goodness and quality therefore overlap strongly in many consumers mind.

The questions on the attributes they would consider when judging quality, first unprompted and later when prompted by a list of alternatives show a wide disparity. This disparity could be explained by the pressure that was brought to bear on the consumer by the list.

When consumers were asked what attributes they would consider when buying a frying pan, a matchet and a window latch, the responses were as shown in Table 17.

Table 17: Attributes considered in buying specific products (80 responses)

	%		
	Pan	Matchet	Latch
Performance	61	70	55
Durability	68	74	60
Aesthetics	23	10	36
Reliability	8	9	6
Features	14	4	16

A notable aspect of the above results is features. Features were considered to be of some importance when buying a pan or a window latch. This could be due to the fact that besides the “basic” attributes of durability, performance and appearance, the consumer is interested in “extra” attributes that make the product more appealing in terms of sophistication, design and finish. The high durability figures could be due to the fact that all these products are metallic and are expected to serve the consumer for a long time. In contrast, reliability was not thought to be very important because the likelihood of failure for these products is considered remote and if repair was necessary the financial outlay or complexity of repair is low.

Quality and Price

When asked whether expensive products are usually of good quality, 60 per cent of the respondents disagreed. Sixty-one per cent also disagreed that you always have to pay more for the best. When asked what they would expect to pay for a very good quality product, 81 per cent of the respondents indicated high price, 19 per cent medium price and none low price.

When asked whether they consider highly priced products as of very high quality, 79 per cent disagreed. Those that agreed thought high prices reflected use of expensive materials, good workmanship, high cost of production or use of high technology.

Those who disagreed thought high prices reflected shop location, exploitation, scarcity, high taxation, currency valuation or country of origin.

Consumer Attitude Toward Informal Sector Products

When asked whether people are valued according to the quality of products they possess, 79 per cent agreed. Sixty-two per cent indicated that peers affect their buying behaviour. However, 75 per cent disagreed that peers would be dissatisfied by them buying products from the informal sector.

When asked whether one has ever bought any product from the informal sector, 95 per cent of the respondents had. The respondents were influenced by many factors to buy from the sector, as shown in the following table.

Table 18 : Factors influencing purchases from the Informal Sector (80 responses)

	%
Price	89
Availability	48
Quality	42
Friends	16
<i>Public information</i>	<i>14</i>

Majority of the respondents indicated that they were influenced in buying from the informal sector by more than one factor.

When asked whether the price they paid for the informal products they purchased was right, 85 per cent indicated it was a fair price. Thirty-six per cent indicated that the price was fair because it was cheap, 15 per cent because products were made of cheap and better materials and 13 per cent because the products are durable.

When asked to compare the quality of the informal sector products with those of formal sector, 83 per cent of the respondents felt that informal sector products were inferior. This in striking contrast to the producers' survey where only 26 per cent believed informal products were inferior. This mismatch is of some significance and may indicate that the market experience of middle-income consumers is wider than that of micro-entrepreneurs. Asked in what way informal sector products were inferior, 54

per cent indicated poor performance, appearance, durability or poor technology as their reasons.

When asked whether they would consider buying from the sector again, 64 per cent indicated they would. Reasonable price, better quality and availability were given as reasons for buying from the sector. Poor quality, untrustworthiness and poor product appearance were given as reasons discouraging buying from the sector.

appendix c : Results of second consumer survey

This survey was a continuation of the first consumer survey. The respondents of the first survey were mostly middle-income consumers. In this survey, the majority of the respondents were low-income consumers. The purpose of the survey was to get information from the other consumers who buy from the informal sector. The survey was also used to clarify some issues that were not clear from the first survey.

The survey involved interviewing 137 respondents at random.

Consumer Perception of Informal Sector Products

In this survey all the respondents had bought products from the informal sector and had been influenced by many factors as shown in the following table.

Table 19 : Factors influencing purchases from the sector (137 responses)

	%
Price	82
Availability	27
Quality	40

When asked what attributes of quality made them buy from the informal sector, 33 per cent of the respondents gave durability, 4 per cent appearance and 3 per cent performance.

Majority of the respondents (99 %) felt that informal sector products fulfilled their requirements. Asked in which way, 48 per cent indicated durability, 24 per cent performance, 43 per cent price, 1 per cent in workmanship and 6 per cent fitting consumer design.

When asked what attributes attracted them and what attributes, in their opinion, attract people to the informal sector, the respondents replied as follows:

Table 20 : What attracts people to informal sector (137 responses)

	%	
	<i>what attracted respondent</i>	<i>respondents' opinion of what attracts people to the sector</i>
Low price	36	49
Durability	78	37
Performance	7	9
Reliability	2	10
Repairability	2	-
Appearance	1	-
Availability	-	16

When asked to rank the attributes that make people like informal sector products, price was ranked first, durability second, performance third, reliability fourth and appearance last.

When asked to compare the quality of informal sector products with those of formal sector, 61 per cent felt that informal products were superior, 29 per cent thought they were similar and 19 per cent thought they were inferior. When asked which of the two were popular, 69 per cent thought informal sector products were popular. This differed with the results of the first consumer survey. This could be explained by the fact that this survey was mainly composed of low-income consumers with low level of exposure and hence their quality expectations were lower.

When asked whether there are some attributes of the sector's products they did not like, 79 per cent answered yes. When asked a similar question for the formal sector, 88 per cent answered yes. The following were some of the reasons given.

Table 21 : Undesirable features of products (137 responses)

	%	
	informal sector products	formal sector products
Price	-	46
Durability	25	47
Appearance	23	-
Materials	44	32
Workmanship	20	-

When asked what aspects of those who sell products in the sector they did not like, 23 per cent indicated rudeness, 23 per cent cheating, and 17 per cent poor salesmanship.

Judgement of Quality

When asked how they would distinguish poor quality from good, 76 per cent indicated durability, 42 per cent appearance and 43 per cent workmanship. Durability was assessed through materials used. When given three items of two sets of products, the respondents judged their quality using attributes as shown in the table below.

Table 22 : Attributes considered in judging products (134 responses)

	%	
	Pan	Window Latch
Performance	85	72
Durability	73	86
Aesthetics	37	47
Reliability	49	72
Features	24	30

Thus when exposed to actual products, the respondents more or less confirmed the hypothetical results of the earlier survey as shown in Table 17.

appendix d : Results of product value survey

This survey was undertaken to evaluate the value of informal sector products to the consumer in comparison to those products manufactured in the formal sector and the imported ones. The method used was asking the consumer to value products using the informal sector product as the base first, then using the formal sector products as the base. The results were later averaged. Using different bases was supposed to remove the bias the consumer may have had *and checked the consistency of their responses*. Fifty respondents were interviewed.

Results

When asked whether they get their money's worth by buying from the informal sector, 75 per cent answered yes. Forty-three per cent attributed this to low price , 36 per cent to durability and 10 per cent to repairability.

When asked whether price was representative of a products worthness, 67 per cent thought so and 34 per cent did not agree.

When asked to suggest ways of improving the quality of informal sector products, they made suggestions as shown in the following table.

Table 23 : Ways of Improving Infomal Sector Products (50 responses)

	%
improve product finish	64
make products attractive	46
improve workmanship	25
use lighter materials	20
standardise materials	8
improve designs	10

As to the value of product, the respondents were asked how many similar items they would give to get those locally manufactured in the formal sector and imported ones.

The responses were as follows:

Table 24 : Product's Worth (50 responses)

Product	Formal(local)	Imported
Pan	2	5
Hoe	2	1
Knife	2	4

appendix e : Product tests

These tests were performed by the researcher.

Objectives

These product tests were carried out with two objectives in mind. First, they were done to determine whether the products made in the informal sector could pass the simplest performance tests related to their function. Secondly, they were undertaken in order to provoke the producers in looking at quality before and during manufacture and less at the end of manufacturing. Some of these tests were undertaken in front of the producers and some of the producers carried out some of the tests on their products.

Choice of Products

The selection of products was made on the basis of several factors. First, products were selected on the basis of their widespread use within the community under three categories: consumer items, agricultural and building items. Secondly, the products were selected on the basis of cost. The need to test as many items as possible was weighed against the cost of the items. The choice of the number of each product tested, reflected its relative cost. Thirdly, product selection was made on the basis of the number of producers making them. It was argued that products with two or less manufacturers did not give the consumer the relative choice and therefore could not be

reflective of quality of products manufactured in the informal sector. Finally, the products were selected on the basis of manufacturing activity and the level of technology. For example, the selection had to reflect the various levels of metal fabrication and blacksmithing.

Based on the above criteria, the following products were selected:

- (a) axes
- (b) hoes
- (c) chisels
- (d) cooking pots
- (e) water buckets
- (f) wheelbarrows

Tests

The tests were devised on the basis of the functions of the products and were based on the Kenyan and British standards.

Wheelbarrows

Five wheelbarrows were purchased from three producers in the Nairobi's informal sector.

The tests involved placing a weight of 250 kg. on the wheelbarrow and letting the weight rest for an hour. The wheelbarrow was then checked for any deformation. All five wheelbarrows passed the test.

Despite them passing static loading test, the wheelbarrows were found to have poor appearance for a number of reasons. Poor finish and the use of old materials were some of the reasons. Some of the wheelbarrows were found to have sharp edges and lacked symmetry. Wheel alignment was found to be poor. Painting was found to be blotchy and unappealing.

Static loading tests were later carried out in the field in collaboration with two of the producers. The producers tested their own wheelbarrows. Out of four wheelbarrows tested, two failed. The failure was attributed to poor quality of tubing.

Axes

Nine axes were selected from three producers in Nairobi's informal sector.

The test was composed of two parts: the head test and cutting edge test. The head test involved laying the axe on the anvil with the cutting edge overhanging and not supported. Three sharp blows with a 2.5 kg. mallet were delivered with normal manual force on the head. The cutting edge test involved using the axe to give a square blow on a 3 mm. diameter bar made from mild steel in as-rolled condition. After the blows, the cutting edge should not show any sign of damage or defect. The head should be undamaged after the blows.

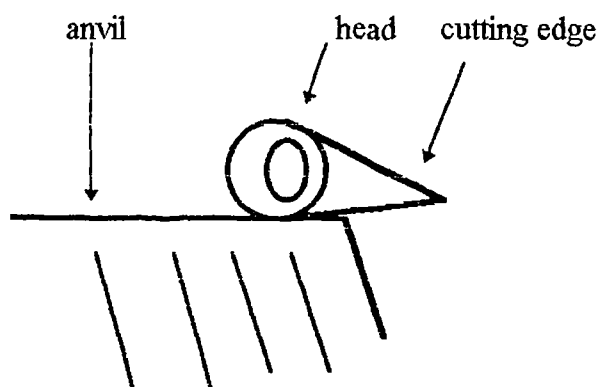


Fig. 7 : Layout for axe test

After the tests, all three axes from one producer failed and one axe from another also failed. Three axes from one producer all passed.

On trying to extend these tests to the field, two producers refused to co-operate. One producer carried out these tests on five of his axes and all passed. He found the tests useful but on subsequent visits, he was asked whether he was still carrying out the tests and he was not.

Hoes

Twelve hoes were purchased from five producers in Nairobi's informal sector.

The test for hoes consisted of two parts. First, the hoe was weighed to check whether its weight was 1.5 kg. or above. Next the hoe was placed on an anvil and a sharp blow

was delivered with a 2.5 kg. mallet on the neck in order to test the neck's strength.

After the blow, the neck was not supposed to show any crack on the weld.

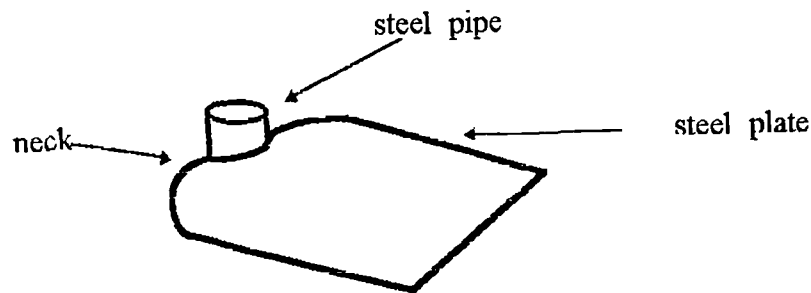


Fig. 8 : Hoe

Four hoes failed the weight test and the six left were tested for strength. Three of the hoes failed the test, the welds cracked.

These tests were later tried by two of the producers. Each producer tested four hoes.

The first producer had three of his hoes fail the test and two of the second producer also failed. Each failed the strength test.

The producers of these hoes subcontracted welding of hoes to another micro-enterprise. The evidence produced was used to confront the micro-entrepreneur about the quality of his welds. Hoes welded by the same micro-entrepreneur were later tested and there was an improvement.

Though the tests were acceptable to the producers, they were anxious about their destructive nature.

Stone Dressing Chisels

A sample of thirty chisels were tested. The sample was from three producers.

The chisel test involved holding the chisels upright on a 3 mm. thick mild steel bar and applying a single solid blow manually using a 1.0 kg. hammer. After testing, visual examination should not reveal any defect, damage, loss of cutting efficiency or 'mushrooming' of the head.



Fig. 9 : Stone Dressing Chisel

None of the chisels failed the test.

Field tests were not undertaken, because it was realised that all producers were using spring steel for making chisels.

Water Buckets

Twelve buckets were tested. The sample was selected from three producers.

The buckets were tested for leakages by filling them with water and letting them stand for 24 hours. Those without leaks were considered to have passed the test. Two buckets out of twelve failed the leak test. However, it should be noted that while leak testing will identify buckets which leak, it will not detect a water-tight but mechanically weak joint which may fail later under normal handling conditions.

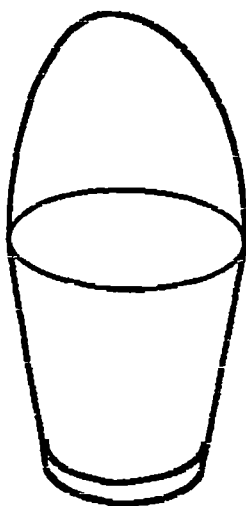


Fig. 10 : Water Bucket

These tests were not extended to the field due to difficulties of carrying out the test.

Cooking Pots

Initially, fifteen pots were selected for testing but later the test extended to twenty-two pots. However, one producer had to replace leaking pots four times which increased the number of pots tested to nineteen. Another producer replaced leaking pots three times thus increasing the pots to twenty-two.

Cooking pots were subjected to leak tests. The pots were filled with water and left for twenty-four hours. Those without leaks passed the test.

Out of twenty-two pots, only seven passed the test. The field test that were carried out involved filling the pots with water and checking for any leakage. Two producers were involved in these tests. Out of six pots tested, only two passed the test.

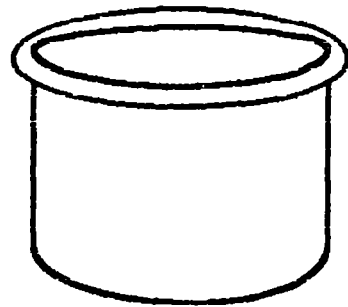


Fig. 11 : Cooking Pot

The producers were reluctant to undertake these test despite their simplicity and subsequent visits indicated that they had abandoned the idea.

Acceptance of Tests

Despite the demonstrations carried out, the producers did not take up the idea. Many argued that they always made good quality products, others argued that they did not find time for these tests. Many were just opposed to idea of change.

Most of the products failed the simple tests and this would mean that if subjected to more rigorous tests as demanded by operating conditions, they would fail signifying their low quality.

appendix f

P R O D U C E R S U R V E Y

- (1) Location of enterprise:
- (2) Type of site.....
- (3) When did you start operating the business?.....
- (4) Did you start the business with a partner?
- (5) Do you have a partner?.....
- (6) Do you pay rent?.....
- (7) How much did you spend to start the business?
- (8) Did you have any equipment and tools in addition to the money?
- How much would the tools have cost you?
- (9) How many years of experience do you have?.....Do you have any experience from the formal sector?....If so, how many years?.....
- (10) Do you keep books?.....
- If so how?.....
- (11) Where were you trained?-.....
- (a) youth polytechnic (c) Other
- (b) informal sector
- Who paid for your training?.....
- Have you had any training since starting the business?.....
- If so what kind?.....
- What kind of training do you think you need?.....
-
- (12) What products do you produce?
-
-
-
-
- Are they the same products you started with?.....
-
-

If not, how many new additions?.....

.....

.....

How much do you produce per day?.....

.....

.....

.....

.....

What prevents you from producing more?.....

.....

.....

.....

13) Who are your customers?

(a) informal

(d) middlemen

(b) wholesalers

(e) individuals

(c) formal

Do you face any competition?.....

.....

If so, from who?.....

.....

.....

.....

.....

14) Have you introduced new methods of producing what you produce?

.....

.....

If so, which and how?.....

.....

(15) Have you purchased other tools and equipment since you started?

.....

If so, which ones?.....

.....

.....

Were the tools and equipment new or old?.....

.....

Did you buy them from the formal or informal?.....

.....

Were they made in the informal sector?.....

.....

(16) Have you improved the products since you started producing?

.....

.....

If so how?.....

(17) How many workers do you employ?.....

.....

How long have you had these employees?.....

.....

.....

.....

How do you train them?.....

.....

(18) Do you have any apprentices?.....

.....

If so, how many?.....

.....

Do they pay any fees?.....

.....

If so, how much?.....

.....

What is the expected length of training?.....

.....

How do you recruit apprentices? ..

(a) family (c) individuals searching

(b) friends (d) customers

What are the educational requirements for apprentices?

.....

.....

.....

Do you pay apprentices

(a) wages (c) Payment on good job

(b) Occassional tips (d) feeding and clothing

(19) What raw material do you use?.....

.....

.....

.....

Do you use any scrap?.....

.....

If so, for what products?.....

.....

What type of scrap do you use?.....

.....

What are your sources of raw materials?.....

(a) formal (b) informal

Do you get any raw materials from your customers?

.....

If so, for what products?.....

.....

.....

Does price have any influence on your raw material acquisition?

.....

.....

If so, how?.....

.....

Does lack of raw materials hold up your work?.....

.....

If so, how have you been going round it?.....

.....

20) Are the products you manufacture copied from other people?

.....

.....

If so, which ones?.....

.....

Are the designs from informal or formal?.....

.....

.....

Are there some products whose design originated from the customer?

.....

.....

If so, was the customer

(a) middleman

(c) wholesaler

(b) individual

(d) formal

(e) informal

Have you modified the designs of products since you started?

.....

.....

If so, which ones and how?.....

.....

.....

Are you afraid that other people might copy your designs?

.....

.....

(21) Do you think that the products you manufacture need any modifications?.....

.....

If so, why have you not modified them?.....

.....

.....

(22) Do you collaborate with people with similar businesses?

If so, what kind of collaboration?

(a) exchange or mutual use of tools and equipment

(b) exchange information on production methods

(c) exchange of innovation, adaptations, conversions and designs

Would you think that this collaboration should be extended?

If so, in which directions?

(23) Do you have running water?.....

.....

.....

(24) Do you have electricity?.....
.....

(25) Is there a telephone nearby?.....
.....

Are these facilities used by you?.....
.....

If not, why?.....
.....

(26) Production methods
-general description of production process.

(27) Do you have any problems of technological nature?

.....
.....

If so, what are the problems?.....

.....
.....

(28) What do you understand by quality?.....

.....

(29) Do you think that the informal sector products are of

- | | |
|----------------------|------------------------|
| (a) Superior quality | (c) poor quality |
| (b) good quality | (d) very poor quality. |

30) Do you think that the quality of informal sector products
is comparable to those of the formal sector?

.....
.....

Why?.....

.....

Do you think there is room for improving the quality of informal
sector products?...-.....

.....

If so, how would you suggest that we do to improve?.....

.....-.....

31) Do you think that those who produce good quality are adequately
rewarded?.....

.....

How?.....

.....

(32) Do you think that some producers have lost some goodwill of customers due to others producing bad quality?
.....
.....
If so, how do you think this can be avoided?
.....
.....
Do you think that those who produce good quality should be rewarded?.....
.....
If so how would you distinguish products that of good quality from those of bad quality?.....
.....

(33) What kind of system would you recommend for distinguishing products from each producer?.....
.....
.....

(34) When manufacturing what do you consider as quality attributes?

(a) performance	(e) appearance.....
(b) features	(f) conformance
(c) workmanship	(g) serviceability
(d) durability	

Bio- data

-age

-education level

-marital status

-sex

appendix g

C O N S U M E R S U R V E Y

- (1) When purchasing a product, what do you consider in judging its goodness?
- (2) If you had to compare two similar products, what would you consider before buying one?
- (3) In a few words can you tell us what you understand by quality.
- (4) When judging the quality of a product what do you consider?
- (5) If you went to buy the following products, what attributes would you consider?
- | Consumer Product | Agricultural Product | Building Product |
|------------------|----------------------|------------------|
|------------------|----------------------|------------------|
- (6) Do you agree or disagree with the following statements
- Agree/disagree
- (a) expensive products are usually good quality
- (b) you always have to pay more for the best
- (c) people are valued according to the quality of the products they possess
- (7) If you found a very good quality product in a shop, would you expect to pay
- (a) a high price
- (b) a medium price
- (c) a low price
- (8) Do you consider the highly priced products as of very high quality?
- Why?

- (9) When judging the quality of products what aspects do you consider important
- | | |
|-------------|--------------------------|
| durability | conformance |
| appearance | country of manufacture |
| performance | company manufacturing it |
| reliability | serviceability |
| features | |
- (10) Have you ever bought any product from the informal sector?
- What did you buy?
- (11) Do you think the price was right for the product that you got?
- Why?
- (12) Do you consider informal sector products superior to those from the modern sector?
- Why?
- (13) What influenced you to buy from the informal sector?
- | | |
|------------------------|------------------|
| (a) friends | (d) price |
| (b) public information | (e) availability |
| (c) quality | |
- (14) Would you consider buying from the informal sector if you had enough money to buy from the modern sector?
- Why?
- (15) Do your peers affect your buying behaviour?
- (16) Would you say that your peers would be dissatisfied by you buying products from the informal sector?
- Age:
- Education level:
- Marital status:
- Sex:
- No. of children

CONSUMER SURVEY

1. Have you bought any product from the informal sector?
If yes, What?
.....
2. What made you buy from the informal sector?
.....
.....
.....
3. Do you think that the informal sector products fulfil consumers requirements?
.....
.....

In which ways?
.....
.....
4. Which products are more popular informal sector or factory made?

Why?
.....
.....
5. How do the quality of informal sector products compare with those made in the factory?
Better
Worse
Same
6. What attributes of informal sector products attracts you?
.....
.....
.....
7. Are there some attributes of informal sector products that you don't like?
If so, which ones?
.....
.....

8. Are there some attributes of factory made products that you do not like?

If so, which ones?

.....

.....

9. Of the popular informal sector products, do you think they are liked because of

a). Durability

b). Performance

c). Appearance

d). Price

e). Reliability

10. For those products made in the informal sector, how would you distinguish those of better quality from those of poor quality?

.....

.....

.....

.....

11. What don't you like about those who manufacture products in the informal sector?

.....

.....

.....

12. As a whole, what do you think attracts people to the informal sector products?

.....

.....

.....

.....

appendix i

Product Value Survey

Do you think you get your money's worth by buying from the informal sector?

How?

How many informal sector items would be equivalent to this in value?

	local	imported
--	-------	----------

Pan		
-----	--	--

Hoe		
-----	--	--

Knife		
-------	--	--

Would you say that price is representative of the product's worthness?

If you had many informal sector items fo this nature, how many would you give up for one of these?

	local	imported
--	-------	----------

Pan		
-----	--	--

Hoe		
-----	--	--

Knife		
-------	--	--

In general, how many times would you say that factory made goods are better in quality than informal sector items?

Informal sector products are poorer in goodness than factory made products. How many times would you say they are poorer?

	local	imported
--	-------	----------

Pan		
-----	--	--

Hoe		
-----	--	--

Knife		
-------	--	--

Do you have any suggestions toward the improvement of quality of informal sector products?

Which ones?