AN ANALYSIS OF THE DECISION-MAKING CRITERIA FOR INVESTING IN COMMERCIAL REAL ESTATE IN KENYA

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A Thesis submitted in fulfillment of the award of the Degree of Doctor of Philosophy of the University of Nairobi, Faculty of Architecture, Design and Development, Department of Land Development,

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JANUARY, 2005
DECLARATION

I hereby declare that this thesis is my original work and has not been presented for a degree in any other University.

JENNIFER M. MURIGU

This thesis has been submitted for examination with our approval as University Supervisors:

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ABSTRACT

Real estate ownership has been conceded since time immemorial as a basic necessity for man. Its ownership gives a person some degree of security in a psychological as well as in a financial sense. The fact that real estate is tangible and useable means that it bestows special status to the owner. Also in a situation where inflation is daily eroding the value of money, the investor is attracted to real estate owing to its ability to keep abreast of inflation.

In Kenya, like most other countries, real estate is a substantial investment asset class with some institutions having property portfolios that account for as much as 70% of their total investment holding by value. However, a look at the commercial real estate investments in Kenya reveals the following:

- A shrinking occupation demand;
- Disparities between expected and actual incomes;
- Declining rental values;
- Difficulties in meeting debt servicing obligations and;
- Difficulties in completing construction projects within the specified cost and time frames

In spite of these problems, new, large and very expensive buildings are still mushrooming not only in the City of Nairobi, but also in other urban centres in
the country. Therefore, there appears to be unexplained reasons that compel investors to continue investing in commercial real estate. It is against this background that the study was undertaken to investigate the motivating factors or the basis of decision-making while investing in these properties.

The study identified and ranked the factors that influence the Kenyan investor to commit his capital in commercial real estate. The identified significant factors are: expected income, payback period, cost of finance, demand for commercial space, expected rate of return, size of land, cost of land, cost of construction, psychological satisfaction expected from the investment, adequacy of services and infrastructure, level of security, distance from the city centre, economic climate, security and regularity of income, security of capital and supply of commercial space. This information is a pointer to the problems currently being experienced in commercial real estate investments.

While expected income is a significant factor in influencing the decision to invest, it ought not be the main motivating factor as it does not take into account the inherent costs that are involved in an investment. By undertaking investments in commercial buildings, it is rightfully perceived that the investors are interested in long-term wealth. This being the case, the focus should be the returns. The expected rate of return would, therefore, be a more logical main motivating factor in the decision to invest in commercial real estate. Also, the lack of systematic and formal decision making rules and
procedures was observed. Investment in commercial real estate is a problem of decision-making in the presence of uncertainty and risk. While some may argue that uncertainty can never be resolved completely as nobody will have complete knowledge of the future, it can be managed through handling decision-making appropriately and adequately as proposed in the study.

The study is organized into eight chapters. Chapter One covers the general introductory sections of the study. Chapters Two and Three consist of a review of literature related to investments in general and in particular investments in real estate. The information in these chapters form the theoretical framework on which efforts to propose steps to be followed in undertaking commercial real estate investments are founded.

An overview of the real estate market in Kenya is covered in Chapter Four. Chapter Five gives the research methodology detailing the research design, the population, sample and sampling techniques. Chapter Six identifies and ranks the factors that influence the decision to invest in commercial buildings. This is done following investigations into the criteria for decisions to invest in commercial real estate in the city of Nairobi. In the same chapter, the influence the buildings' characteristics have on the identified significant factors in the decision to invest in commercial real estate is established.
Chapter Seven determines the influence of the significant factors with respect to their contribution to the decision to invest in these properties. Chapter Eight evaluates the findings of the case studies and derives the conclusions and recommendations of the study.
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My deep gratitude to my husband Murigu, our children Irimu, Chomba and Kimaru for their love, support, encouragement and inspiration throughout the study.

Above all; glory, laud and honour to God almighty for great is His faithfulness.
DEDICATION

This study is dedicated to my husband Murigu and our children
Irimu, Chomba and Kimaru.

May God bless you.
CHAPTER ONE

THE DECISION-MAKING PROBLEM IN COMMERCIAL REAL ESTATE INVESTMENTS IN KENYA

1.1: Introduction

Real estate whether for commercial, residential, industrial or agricultural uses plays a major and important role in the social and economic development of any country. It provides facilities and space for peoples' daily activities and is also a source of pride for the community. The well-to-do nations and communities are often associated with the concentration of large numbers of commercial buildings in their capital cities and good residential suburbs. Even the status of a business organization is reflected in the location of its offices and the condition of the building from which it operates.

Its importance notwithstanding, investment in real estate ought to be undertaken with the assurance that the viability appraisal done guarantees adequate returns to compensate the investor. This is because, real estate as a product is very expensive. For example in the year 1997, the urban housing units in Kenya were estimated to amount to a total value of Kshs.16.6 billion and expected to rise to Kshs.23.4 billion in the year 2001 (Development Plan, 1997-2001). This is a colossal amount of capital asset, out of which a big percentage of the invested capital is borrowed.
funds on which competitive interest rates are charged. In terms of the opportunity cost, the resources invested in the properties represent large amounts of forgone alternative investments.

Together with equities and government securities, real estate has established itself as a major component of institutional portfolios. For example, the National Social Security Fund (NSSF) which is the largest pension body in Kenya with over 2,600,000 members from all corners of the country has invested approximately 55% of its investible funds in real estate (Ngugi, 2000; 131). Also, major insurance companies such as the Insurance Company of East Africa (I.C.E.A.), have property weightings of 25% or more. Consequently, real estate is now a subject of considerable importance to financial institutions as well as real estate companies. It nonetheless remains enigmatic with respect to many of its characteristics and this poses several bottlenecks to detailed analysis thereby leading in many cases to deepest despair (Shilton & Tandy, 1998).

However, the difficulty of revealing real estate facets for precise determination has not always been due to its characteristics. Investors have often been in a rush to acquire and/or develop real estate without much regard to all the intricate details of the investment. This is as it relates to the security of capital and income, marketability and liquidity of capital, cost of transfer, tax concessions and divisibility (Syagga, 1994; 17).
In Kenya, like most other countries, real estate is a substantial investment asset class. With the concept of ownership deeply ingrained in the minds of many Kenyans, a disproportionate amount of the country’s wealth is tied up in real estate. Some institutions have property portfolios that account for as much as 70% of their total investment holdings by value (Knight Frank Report, 1998; 6). There has also been an emergence of high rise construction for example, the construction of the Central Bank of Kenya building, Times Towers. Currently, the building which was completed in July, 2000 at a cost of Kshs.2.8 billion, is the tallest in East Africa with forty (40) storeys and a total lettable area of 36,000 square metres. Other recently constructed high-rise buildings include; Teleposta Towers, Afya Centre, Nginyo Towers, Loita House, Barclays Plaza and CFC Bank building in the Nairobi Central Business District and; Middle East Bank Building, Victoria Towers, Rahimtulla Towers and Bishop Garden Towers in the Nairobi Hill area. Older buildings are also being demolished to give way to modern skyscrapers.

However, investment in real estate is a high risk activity involving large amounts of funds tied up in the production process and providing a product which is relatively indivisible. Also, the economic performance both at the national and local levels directly influence the process as well as the profits.
According to MacLeary et al (1988; 71-73), uncertainty in real estate investments stems from various factors, namely:

- Rental value and rental growth;
- Age and obsolescence;
- Lease structure;
- Liquidity;
- Management costs;
- Yield on sale and timing of sale;
- Taxation and;
- Inflation.

The act of committing huge capital out-lays as is the case with real estate investments, therefore, requires a lot of assurance before doing so. The main reason is that, failure to investigate the returns which the invested capital will gain can at times be a suicidal venture. Alternatively, the investor may end up with a "white elephant". Also property units that take a longer time to sell than expected erode profit day by day. Competition is too fierce and money too expensive (with commercial lending rates in Kenya ranging from between 23% to 31%) for real estate investors to place new properties on the market without knowing how the market is going to react.
Traditionally in Kenya, because of the difficulties, the dislike or the lack of knowledge on how to deal explicitly with the aspects that affect real estate investments, most people concentrate on a few key assumptions about the future, examine a few rules of thumb, mull over the decision and then decide. However, in choosing an investment project, investment managers should apply appraisal techniques to measure the economic worth of the project. The essential objective is to maximise the investor's wealth. According to Porterfield, the following are the characteristics for sound investment evaluation criteria:

- It should consider all cash flows to determine the profitability of the project;
- It should provide for an objective and unambiguous way of separating good projects from bad ones;
- It should help in ranking projects according to their true profitability;
- It should recognise that bigger cash flows are preferable to smaller ones and early cash flows are preferable to later ones (Quoted in Ngugi, 2000; 33).

Investors ought to be guided by the real inside truth of the project they are planning to undertake and not by the often deceptive external
appearances. As Lustenberger (1987; 2) pointed out; "You judge an animal by its teeth and not by its coat"

The need for accurate and reliable investment appraisal in decision making has been given by Reul (1984; 1) as resulting from:

i. The expanding magnitude of operations
The size and scope of financial commitments is increasing and the number as well as the variety of people involved is growing.

ii. Increasing complexity of enterprises
Facilities are becoming more specialised and complicated with interactions between different factors which are numerous and more significant. This reduces flexibility to adapt to revisions in objectives. Income tax impacts are also becoming greater, more important and a serious complication in the evaluation of prospective performance.

iii. Tightening of competition
Profit margins obtained are becoming smaller, capital is less available and more costly and longer project lives are being considered.
Chapman et al (1985;13) has also observed that economic stability in growth rates and prices has become endemic in recent decades creating an uncertain and volatile investment environment. The appraiser should, therefore, be in a position to critically analyse all the factors that will affect investment in the class of property in question by producing values that are scientifically supported and which if challenged can be defended effectively. As Sykes (1983: 25) pointed out:

"Maths cannot replace intuition, but modern techniques can aid in quantifying information which is normally considered qualitative".

Also, as Lord Kelvin once remarked;

"When you can measure what you are talking about and express it in numbers, you know something about it, but when you cannot measure it in numbers, your knowledge is of a meagre and unsatisfactory kind" (Quoted in Swazuri, 1996; 8).

It is certainly the case that ignorance of the factors that affect commercial real estate investments and/or inability to measure such effects is a major contributor to many of the unwise investment decisions that are made. The situation is aggravated by the scarcity of money which is brought about by either lack of security for borrowing or high interest rates on loans. As
such, it is now clear that investments in commercial real estate have to be clearly justified to investors than has been the case in the past. The real estate sector must also be capable of useful comparison with other assets and opportunities for investment. This study, therefore, aims at analysing the decision-making criteria for investing in commercial real estate in Kenya.

1.2: Problem Statement

Investment deals with the creation, enlargement and protection of wealth. Capital is committed in assets in exchange for benefits to be received in the future. In the process, capital is exposed to risk.

A look at the commercial real estate investments in Kenya reveals the following:

1. A shrinking occupation demand

In Kenya there has been shrinking occupation demand in commercial real estate investments. For example, in the year 1993, out of a total of fifty one (51) surveyed commercial buildings in the city of Nairobi, only 18 buildings (35%) were fully let. Eight buildings or 16% of the surveyed buildings had occupancy rates of between 42.5% and 91% with one building having an
occupancy rate of as low as 30% (Swazuri et al, 1993; 21). This clearly shows that while the outward expansion of the commercial sector from the Central Business District (CBD) to other areas like Westlands, Kilimani and the Upper Hill areas, as well as the increase in high rise buildings may be an indicator of demand for more space, it may not always be the case. A casual survey of both new and old commercial buildings in the city of Nairobi reveal that, several commercial buildings continue to experience voids. A list of buildings experiencing voids as at 31\textsuperscript{st} December, 2001 include; View Park Towers with a vacancy rate of 22\%, Hazina Towers with 30.5\%, Barclays Plaza with 13\%, Fedha Towers with 14.5\%, Posta Sacco with 24.8\% and Nginyo Towers with 22.5\%. Professionals in the real estate sector were of the opinion that the vacancy rates would continue to shoot up.

Syagga and Aligula (1999) projected that active construction and granted planning permission will produce 2,152,000 sq. ft. of office space against an annual take up of only 645,600 sq. ft. with the implication that about 40\% of the available space will remain vacant. The vacancy rate is high compared to other property markets around the world. For instance, the USA office market recorded a national vacancy rate of 9.2\% in mid 1998 and in Sydney, the vacancy rate was estimated at 5.56\% in the last quarter of the year 1999 (Knight Frank Report; 1999).
A survey undertaken in the UK revealed that 62% of businesses would wish to vacate some of their floor space (Estate Gazette; 2001). Half of the 62% would wish to vacate up-to 30% of the space. The survey also revealed that occupiers are restricted by case law in their ability to sublet space even where they are willing to offer the space at a level below the passing rent.

2. Disparities between expected and actual incomes

There exists huge disparities between the expected incomes from the investments and the actual or realised incomes. Some of these disparities may be positive, that is, where an investor actually receives more than what he expected, but in the majority of cases they are negative. For example, from a survey of twenty seven (27) buildings conducted in 1993, on expected and actual incomes, it was found out that only two (7%) of the buildings realised the expected incomes (Swazuri et al, 1993; 38). In the remaining twenty five (25) buildings, only a percentage of the expected income was realised with the percentages ranging from as low as 28%. In the survey, none of the buildings exceeded the expected income. The problem of disparities between the expected and the actual incomes is worsened by the fact that owners of commercial buildings have been forced to reduce their rents in order to attract and retain tenants. For instance, in Ambank House, the rent has been brought down from
Kshs.50.00 to Kshs.30.00 per sq. ft. per month. In the Anniversary Towers, rents have been brought down from Kshs.46.00 to Kshs.42.00 per sq. ft. per month.

3. Difficulties in completing construction projects within the specified cost and time frames

Compounding the problem of the disparities between the expected and actual incomes is difficulties in completing construction projects within the specified cost and time frames. Project delays are the norm rather than the exception in the building industry in Kenya (Talukhaba 1999; 6). The delays normally result in increased project costs in terms of revenue lost for not being able to use the facility for productive work, material price escalations, contractual claims as well as increased cost of finance. For instance, The National Social Security Fund (N.S.S.F.) building situated in Nairobi was initially estimated to cost Kshs.600 million, but on completion, the total cost shot up to Kshs.2.5 billion. It also took five (5) years to complete as opposed to the estimated period of two (2) years.

Also from a physical survey by The Architectural Association of Kenya (A.A.K.) in the year 2000, it was established that, between Kshs.1.5 and 1.8 billion has been sunk into stalled projects along Mbagathi and Lang'ata Roads alone, in the city of Nairobi. The Association further noted that the
wasted investments in the City could run well into more than Kshs.2 to 3 billion if all the stalled projects are considered (Architectural Association of Kenya Report, 2000).

4. Declining rental values

In Kenya, rental growth is sluggish if not negative in real terms, whilst operating costs continue to be inflationary eroding the bottom line. For quite a number of years, Kenya’s year-on-year inflation rate has generally been on the increase with an annual average of approximately 10%, only with a decrease to 6.6%, 3.5% and 6.2% in 1998, 1999 and 2000 respectively (Economic Survey Reports, 2000 & 2001). This leads to a situation whereby, with real estate investments, in many cases the benefit is in capital value appreciation more than in rental returns. It is rare to break-even with borrowed funds in the first five (5) years (Syagga, 1998; 10). This is because rental leases normally have escalation clauses for rental increases of about 10% per annum and this is against an average inflation rate of 10%. The problem is aggravated by the high incidence of voids.

Table 1.1 further confirms that commercial real estate investments in Kenya have consistently shown a return of less than 10%:
Table 1:1  Average Rate of Return for Commercial Properties

<table>
<thead>
<tr>
<th>Year</th>
<th>Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>8.67</td>
</tr>
<tr>
<td>1988</td>
<td>8.30</td>
</tr>
<tr>
<td>1989</td>
<td>8.80</td>
</tr>
<tr>
<td>1990</td>
<td>8.70</td>
</tr>
<tr>
<td>1991</td>
<td>9.10</td>
</tr>
<tr>
<td>1992</td>
<td>9.80</td>
</tr>
<tr>
<td>1993</td>
<td>9.71</td>
</tr>
<tr>
<td>1994</td>
<td>9.34</td>
</tr>
<tr>
<td>1995</td>
<td>8.25</td>
</tr>
<tr>
<td>1996</td>
<td>8.40</td>
</tr>
<tr>
<td>Average</td>
<td>8.91</td>
</tr>
</tbody>
</table>

Source: Syagga (1998; 10-11)

A comparison of commercial real estate investments with government securities in the form of treasury bills indicate that, government securities command higher investment returns than real estate. For instance, returns on the Central Bank of Kenya treasury bills in 1998 averaged 15% against an average return of 8% on commercial real property (Syagga & Aligula; 1999). Also, taking into account that most invested capital in real estate is
borrowed funds on which interest rates are paid, it is important to point out that, rates on loans and advances are way above those for treasury bills and savings deposits as shown in Figure 1.1 below:

Figure 1.1: Selected Interest Rates

![Selected Interest Rates Graph]

Source: Economic Survey Report, 2001; 69

From the Central Bank of Kenya records, interest rates on loans and mortgages have ranged from 34.4% in June 1997, 30.4% in December 1997, 26.7% in December 1998, 25.7% in December 1999 and 23% in March 2000. Interest rates on deposits have on the other hand averaged 14% for the same period (Central Bank of Kenya records; 1997-2000).

The problem of declining rentals is not restricted to the Kenyan commercial property market alone. Rental growth and capital growth forecasts in the
UK for the period 2004 revealed a fall in the rents by 0.3% while capital values were set to increase by 1% (Estates Gazette; 2001). The situation was to be made worse by the reported over supply of office space in various areas.

5. Difficulties in meeting debt servicing obligations

This arises when a disparity occurs between rental incomes and the mortgage repayment rates exposing the safety of the investor's capital and the legal ownership of the property to risk. Due to the disparity between rents and the mortgage repayment rates, investors in real estate have continued to default in loan repayments. For instance, the Housing Finance Company of Kenya (HFCK) which is the largest mortgage company in Kenya, had to make specific provision for mortgage losses amounting to Kshs.144 million during the year ended 31st December, 1998 (HFCK Report, 1999). According to the company's audited results, the company's general provision for mortgage advances stood at Kshs.91.2 million during the year 1998. Further, in the year 1997, a provision of Kshs.60 million had been made for mortgage losses. The financial sector has continued to face the problem of non-performing loans which comprise 39.3% of the total loan portfolio (Economic Survey Report, 2001;2).

Financial institutions are experiencing major problems because the
Kshs.100 billion non-performing debts shared by the Kenyan financial institutions are largely collateralised with real estate assets. Professionals in the real estate industry reveal that efforts by some local banks to dump this collateral in the property market has ended in failure. With the depressed growth in the rental income and falling property prices, financial institutions are starting to realise that they over lent to both the commercial and residential property borrowers after over estimating the economic potential of these collateral. This, therefore, means that any financial institution that decides to dispose of its collateral should be ready to get substantially less than the loans they advanced.

6. Uncertainty in the investment

The uncertainty is as it relates to obsolescence and the need for further capital injection, uncertainty as to how long the investment will be retained and what it might be worth when eventually sold. The investment appraisal techniques used have resulted in difficulties in structuring the most efficient mechanisms necessary to reduce the exposure of the investment to market risks. The interpretation of the risk factors that are likely to influence the success of an investment is more often than not done using the appraiser's personal intuition, based on past experiences (Barham, 1991; 976-977).
In the computation of the investment performance indicators; payback period, internal rate of return, net present value etc.; certain assumptions are normally made concerning the expected behavior of the variables that are likely to influence the investment performance. However, the expected behavior situations considered in the appraisal are likely to have their own conduct during the life of the investment, producing variances that result in performances different from the expected ones. Before the go-ahead decision is made, it is necessary to know beforehand the strength of each of the variables in explaining the variability in the investment performance so that the necessary precautionary measures can be confidently taken (Lima, 1991; 1132). If the variances of variables are not known, the investor faces uncertainty in matters such as obsolescence of the property, the likelihood of a decline in rental values, the need for further capital injection, a reduction in the economic period of the investment and a decline in the amount of proceeds when the property is eventually sold.

However, whereas there are; negative disparities between expected and actual incomes, many voids and with the shrinking occupation demand the level of voids is increasing, as well as several other problems as outlined earlier, new, large and very expensive buildings are still mushrooming not only in the city of Nairobi but also in other urban centres in the country. For instance, supply of new office space in the city of Nairobi has risen from less than 50,000 sq. m. in 1992 to well over 100,000 sq. m. completions
per annum by the end of 1997, with an average of 76,400 sq. m. completions per annum (Knight Frank, 1998; 2).

Investors still continue to invest in commercial real estate, sometimes in similar areas and in buildings of similar cost, design or use. Therefore, there appears to be unexplained reasons that compel investors to continue investing yet they do not obtain their expected incomes. While some may consider the demand and supply factors, others just aim at satisfying life long egos or business aspirations. Others invest in order to compete with their business rivals. It is against this background that the study was undertaken to investigate the motivating factors or the basis of decision making in commercial real estate investments. It is not simply a question of the present being an appropriate time to address the factors upon which decisions to invest in commercial real estate are made but it is also quite necessary for the thinking and practice in real estate investments to be made explicit.

1.3: Study Hypothesis

In this study it is hypothesised that:

"Returns on invested capital are not the main motivating factor in the decision to invest in commercial real estate."
1.4: Study Objectives

The objectives of the study are:

i. To identify and rank the factors that influence the decision to invest in commercial real estate.

ii. To establish the influence (if any) the buildings' characteristics have on the rating of the significant factors in the decision to invest in commercial real estate.

iii. To determine the influence of the significant factors with respect to their contribution to the decision to invest in these properties.

iv. Propose steps to be followed by investors in the decision to invest in commercial real estate investments in order to, amongst other goals, minimise disparities between the expected income and the realised/actual income.

1.5: The Study Area

The area of study is the city of Nairobi from which several commercial
buildings are taken as the case studies. Nairobi is the capital city and it forms the largest urban centre in the country occupying some 684 square kilometres. The city also has the highest population with approximately 2,137,000 people as well as the highest population density of 1,911 people (Economic Survey Report, 2000; 215). Within the city boundaries are, in addition to built areas national parks and forest reserves.

The city embraces virtually all the important urban functions including government, international affairs, educational and cultural institutions, transport and industry. Nairobi like most of the African cities is the nerve centre of Kenya and its effective control whether economically or politically is tantamount to the control of the nation.

Nairobi is not only the capital city of Kenya, but also the seat of the Government. In the city of Nairobi, one is to find the headquarters of all government ministries. There are also over sixty (60) diplomatic missions and consuls established in Nairobi and other institutions of international repute. These include; the United Nations Environmental Programme (UNEP), the United Nations Centre for Human Settlement (Habitat), the International Bank for Reconstruction and Development (World Bank), the Food and Agriculture Organization (FAO), Organization of African Unity (OAU) etc. Thus, because of the underlying social, economic and political interests, it displays more land and buildings' (commercial purposes)
problems than any other urban centre in Kenya. This, therefore, postulates an interesting but also challenging exposition of the study phenomena. It is felt that, more commercial buildings are found in Nairobi because it is the most active area in Kenya and there are prospects that more will continue to be developed here. According to the Central Bureau of Statistics, Nairobi has had the biggest share of building projects amounting to over seventy percent (70%) of the national output over the last ten (10) years (Economic Survey Report, 2001: 161). Table 1.2 gives a breakdown of the value of private building works completed in five selected towns in the last five (5) years.

Table 1.2: Value of Completed Private Building Works in Kshs. (000,000)

<table>
<thead>
<tr>
<th>Year</th>
<th>Nairobi</th>
<th>Mombasa</th>
<th>Kisumu</th>
<th>Nakuru</th>
<th>Malindi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>857.40</td>
<td>439.20</td>
<td>42.00</td>
<td>131.20</td>
<td>82.20</td>
<td>1,552.00</td>
</tr>
<tr>
<td>1997</td>
<td>852.40</td>
<td>484.80</td>
<td>96.00</td>
<td>141.40</td>
<td>97.60</td>
<td>1,672.20</td>
</tr>
<tr>
<td>1998</td>
<td>696.40</td>
<td>405.60</td>
<td>115.00</td>
<td>189.60</td>
<td>182.60</td>
<td>1,589.20</td>
</tr>
<tr>
<td>1999</td>
<td>628.40</td>
<td>366.80</td>
<td>42.00</td>
<td>117.00</td>
<td>170.00</td>
<td>1,324.20</td>
</tr>
<tr>
<td>2000</td>
<td>622.39</td>
<td>243.26</td>
<td>33.87</td>
<td>103.18</td>
<td>116.96</td>
<td>1,119.66</td>
</tr>
<tr>
<td>Total</td>
<td>3,656.99</td>
<td>1,939.66</td>
<td>328.87</td>
<td>682.38</td>
<td>649.36</td>
<td>7,257.26</td>
</tr>
</tbody>
</table>

Source: Economic Survey Report; 2001; 160
In recent years, the city of Nairobi has experienced an increase in the construction of high rise commercial buildings. Older buildings are also being demolished to give way to modern skyscrapers. Examples of some of the recently constructed buildings include; Teleposta Towers, Afya Centre, Nginyo Towers, Loita House, Barclays Plaza and CFC Bank building. Nairobi is therefore a good representative of the experiences of other urban areas in Kenya.

1.6: Scope and Significance of the Study

The city of Nairobi is a highly differentiated core. Investors have taken varied interests in the various forms of real estate investments either, commercial, residential or industrial. The scope of this study is, however, limited to the factors influencing the decision to invest in commercial real estate. The study is centred only on commercial buildings within the boundaries of the city of Nairobi and does not touch on the individual businesses undertaken in these buildings; only the building investment itself. Although the emphasis is only on commercial buildings, many of the aspects brought out do not apply to commercial properties alone, but also to other properties be they residential or industrial.

Efficiency in undertaking investments in the real estate sector is of great importance in a developing country like Kenya where the sector is an
important partner in the development process. The ongoing structural changes in the Kenyan society on political and economic liberalisation have exposed the Kenyan economy to competition both locally and internationally. For the real estate investors to compete in this new environment, they have to be more efficient.

The need for this study arises because there is very little that is known about the factors that influence the decision to invest in commercial real estate in Kenya. The study outcome will hopefully enable investors make realistic and meaningful decisions when investing in real estate. These decisions may be at the macro level, say, should one be investing in real estate at all? Or at the micro level, say, what income can one expect from the property? There is this urgent need because of the huge capital invested and the nature of the investment which is highly indivisible and also whose liquidity is relatively low. It is also hoped that the study will be of assistance to individuals dealing with investments in general and real estate investments in particular, as well as students undertaking courses in real estate investments.

While the Master of Arts in Housing Administration and the Master of Arts in Valuation and Property Management Degree programmes offered at the University of Nairobi orientate the landed profession in the country towards broader management processes and the wider financial community;
practitioners themselves show a distinct reluctance to embrace the theory and technology which will lead them in that direction. Those in the profession have resigned to the traditional practices of valuation and estate management and this does not do any credit to the learned profession. The purpose of this study will have been met if its contents and conclusions prove to be of use to those involved in real estate investments.

1.7: Organization of the Study

The study is organized into eight chapters. Chapter One covers the general introductory sections of the study. These are the introduction, the statement of the problem, the study hypothesis, objectives, choice of the study area, scope and significance of the study and its organization.

Chapters Two and Three consist of a review of literature related to investments in general and in particular investments in real estate. The chapters have a detailed analysis of the concepts and activities involved in the investment field, the various techniques used in the appraisal of real estate investments as well as their strengths and weaknesses. The information in these chapters form the theoretical framework on which efforts to propose steps to be followed in undertaking commercial real estate investments are founded.
Chapter Four gives an overview of the real estate market in Kenya. The chapter highlights the market profile, the planning system, the market size and rental pattern.

Chapter Five gives the research methodology detailing the research design, the population, sample and sampling techniques. The chapter also covers the various variables in the study and how each variable has been tested to obtain the required information.

Chapter Six identifies and ranks the factors that influence the decision to invest in commercial buildings. This is done following investigations into the criteria for decisions to invest in commercial real estate in the city of Nairobi. In the same chapter, the influence the buildings' characteristics have on the identified significant factors in the decision to invest in commercial real estate is established.

Chapter Seven determines the influence of the significant factors with respect to their contribution to the decision to invest in these properties.

Chapter Eight evaluates the findings of the case studies and derives the conclusions and recommendations of the study.
CHAPTER TWO

INVESTMENTS AND THE DECISION-MAKING PROCESS

2.1: Introduction

The previous chapter highlighted the problems facing investments in commercial real estate in Kenya. In this chapter, the aim is to describe and articulate issues relating to investments in general and in particular, investments in real estate. Decision-making as a process especially with respect to investments in real estate is also discussed. This chapter and the subsequent one provide the theoretical framework upon which steps have been proposed that investors in commercial real estate may follow in their decision to invest in these properties.

2.2: Investments

An investment may be defined as the acquisition of an asset by the investor with a view to satisfactory returns in the future (Hargitay et al, 1993; 8). Mayo (1988; 5) further defines an investment as the purchase of an asset for the purpose of storing value, hopefully increasing the value over time. Investment has to do with creation, enlargement and protection of wealth. Capital is committed in assets in exchange for benefits to be received in the future. According to Syagga & Aligula (1999; 8), these benefits need not always be financial. They may be in terms of social
benefits, political power or some other goal or group of goals. Wurtzebach et al (1988; 553) also notes that benefits from real estate investments in particular, can be pecuniary or non-pecuniary. Pecuniary returns include annual cash flows, tax shelter and gains from sale. Non pecuniary returns may also be referred to as psychic income and include items such as self-esteem, sense of security and ego fulfillment.

2.3 Characteristics of an Investment

The essential nature of any investment is the foregoing of a capital sum in return for future benefits. An individual who has capital surplus to his immediate requirement may retain this for future contingencies. However, a better alternative would be to put his capital to work by investing it and enjoying a return of income. Before committing his capital, a prudent investor will consider the alternative types of investments available to him by comparing each with the 'ideal investment'.

An ideal investment has a number of qualities that an investor needs to identify with any form of investment he wishes to undertake. The qualities include:

- Security of capital and income;
- Marketability and liquidity of capital;
- Low cost of transfer;
Security of capital means protecting the original investment and protecting the purchasing power of the capital. This is usually the most important consideration as total loss of capital may be difficult to replace. Marketability and liquidity of capital is in relation to ease of withdrawal. The investor may at some future date, need to transfer his investment back into cash at short notice. The investment must, therefore, be easy to sell at short notice or converted to cash at any particular time. If any of the considerations are not as satisfactory as in the case of an ideal investment, the risk involved in such investments will be more and the investor would expect to earn a higher rate of interest as an inducement to part with his money and invest in that particular investment.

In general an investment rule can be formulated as follows:

The lower the risk involved in a given investment, the lower the rate of interest expected by an investor; and the more the risk involved, the higher the rate of interest (Deshpande, 1984; 64)

Investments in government securities such as treasury bills are said to satisfy almost all the above requirements of an ideal investment. For instance, in such securities, security of capital is beyond doubt, interest
earned is regular and secure, there is no cost of management and such securities are easily convertible to cash.

A comparison of investments in government securities with investments in real estate reveals that real estate does not offer the same security of capital as government securities do. The income from real estate is less secure and less regular, arising from defaults in rent payments as well as voids. Some costs towards the management of the property have to be incurred before the income from real estate is realised as exemplified by rent collection charges; and the liquidity is less, given the time involved in the sale of real estate. Thus, an investor in real estate will require higher inducement. In other words, the rate of return on the capital invested in real estate should be higher compared to the rate of return on government securities.

Investments also differ in degrees of management. This is in terms of the amount and skill of management required. Since ‘time is money’, an investment that requires more management time should produce a higher return to pay for the time and effort.

Real estate responds slowly to demand because of the long period required for planning and building new structures. Transactions in real estate deal with rights and interests and their complexity gives rise to cumbersome, protracted and costly deals that hamper operations of the
real estate market as a perfectly competitive market. Due to the heterogeneity of real estate properties, it is also not possible to have a perfect market since the goods and services being sold are dissimilar in many aspects such as location and physical characteristics.

Generally, the future success of an investment depends on the investment decision today, but procedures used to help the investor make decisions are often inadequate and misleading. The procedures involve capital budgeting which is a many-sided activity that includes searching for new and more profitable investment proposals, marketing considerations, prediction of the consequences or the risks of accepting the investment and making economic analysis to determine the profit potentials of each investment proposal. However, decisions regarding property investments are often made for reasons other than pure financial return. In particular, occupational requirements and matters such as prestige and status are inextricably bound up in the decision-making process (Dubben et al, 1991;71).

2:4 Opportunities for Investment

Investors have a number of opportunities open to them as alternative investments. Some of the available forms of investments include:
i. Cash and Money Securities

These are held in short term deposits or money market securities until some suitable long-term investment opportunity arises. Investment in a deposit account in a bank will compare favourably with the ideal investment since invested capital is quickly and cheaply recouped if required. The income (interest) is to a large extent safe and is added to the invested amount at regular intervals. However, increasing inflation and collapsing banks make these forms of investments unattractive.

ii. Stocks and Shares

An investor may consider stocks and shares that are normally bought and sold on the stock exchange as an alternative investment. Prices of stocks and shares are more volatile and, therefore, they have a higher capital gains value. The shares entitle the buyer to a certain part of the future profits and assets of the corporation or company selling the shares. The person buying the stock, therefore, becomes a part owner of that company/corporation.

Stockholders may make money from the stock in two ways:
Through dividends. This is the money return a stockholder receives on the money he or she invested in the company. Dividends are paid only when the company makes a profit;

-By selling the stock for more than they paid for it. Some people buy stock just to speculate on it. That is, they buy stock hoping that the price will increase greatly so that they can sell it at a profit (Miller, 1988; 170-172).

The biggest advantage of investing in stocks and shares is that they are generally easily marketable. An investor can quickly and easily convert them into cash should the need arise. However, various types of shares possess different degrees of risk. For instance, holders of ordinary shares receive only the right to participate in the profits, which on the other hand depends on the performance of the company concerned and the decision of the Board of Directors; such that, there is always a degree of uncertainty regarding the income. Therefore, the ordinary shareholders always require a higher yield than that obtained on fixed interest securities to compensate them for the risk to income and capital that result from this uncertainty. Also, with ordinary shares, times of inflation and prosperity are likely to be times of increased dividends and rising capital values. Rising prices will lead to increased profits and an increase in the value of any real capital held.

However, stocks and shares have a disadvantage in that the stock market
is a volatile market and although they are easy to sell, a sale may not necessarily be arranged at the right price. There is also no guarantee that the original expenditure will be recouped. Secondly, it is impossible to predict accurately what is going to happen in the stock market and as such, the investor must always be prepared for the unexpected. Millington (1975; 16) however notes that if funds are available and their loss can be risked, and, a careful study can be made of the market or a particular sector of it, then the stock market can provide rewarding and convenient investments.

The basic risks that face stockholders may be categorised as:

-Those that have to do with the particular company, and;
-Those that are related to the general economy and the market.

Those that are related to the company can be explored by seeking answers to questions about the industry the company is in, the quality of management, the financial position of the company and so on. Market forces sometimes tend to behave like the tide. A rising tide tends to lift all boats and a falling one does the opposite. As the market rises, it tends to push up stocks and when it falls, it drags them down with it.
iii. Bonds

A bond is a certificate issued by a company or by the government in exchange for borrowed money. It promises to pay a stated rate of interest over a period of time and then to repay the borrowed amount in full at the end of the specified time. In other words, bondholders lend money to the government for a period of time and they are paid interest on that money. At the end of the period, the full amount of borrowed money is repaid (Miller, 1988; 170-172). The period of time is called bonds maturity period.

The bondholder does not become a part owner of the government that issued the bond. The bond becomes part of the debt of the corporation/government and the bondholder becomes a creditor. Thus, a bond represents claims to a future stream of pre-specified coupon payments, while a stock represents claims to uncertain future dividends and ownership/division of the corporate assets. The government may sell tax-exempt bonds. This means that, the interest on these bonds is not taxed by the government. Tax exempt bonds are a good investment opportunity for wealthy people who would otherwise pay high taxes on interest earned from other investments. Savings bonds are also sold by some banks, whereby, they are sold for less than their stated value. When redeemed at maturity, they are worth their purchase price plus interest. But the interest on savings accounts is taxed each year.
Bonds can be redeemed at a sum that can be accurately calculated, making them a relatively liquid form of holding capital with little uncertainty attached. Their disadvantage is that they do not generally give very high returns and there is little capital appreciation to be obtained. Therefore, with the fixed interest bonds, their capital value is guaranteed at maturity, albeit in nominal terms. Increasing degrees of inflation however work against fixed interest bonds. To deal with this, index-linked gilts were introduced where the value of bonds is adjusted according to changes in the inflation index.

iv. Treasury Bills

These are sold by the Treasury Department of a government's Central Bank. They form a loan stock and provide an extremely important investment medium and one often taken as a benchmark against which to judge other investment opportunities. They are issued as a means of raising funds. Their attraction to individuals and institutions alike lies first in the fact that default in payment is, to say the least, unlikely. Also, they are readily and speedily marketable. Indeed, the market is so large and attractive that although small lots may be traded, transactions running into millions of pounds are likely to 'flood' the market. For example, in the Money Market Report (May; 2000), the benchmark ninety one (91) day treasury bills offered in the year 1999 were worth Kshs.8 billion.
Traditionally, the view has been that investment in treasury bills is essentially a long-term activity but the ease and speed with which they can be traded has led to large investors treating them as cash equivalents rather than long-term home for funds. In Kenya, the majority of treasury bills on the market are fixed interest stock and have been issued with a redemption date either totally fixed or fixed between two dates. There may also be treasury bills available in the market which are undated or irredeemable stock where either no date for redemption was set or where the date was optional and has passed.

The price of treasury bills moves on a daily basis in line with market trends, prices rising as interest rates fall and vice versa. In the past, treasury bills had commonly been regarded as no risk investments due to their certain returns and capital security. Dubben et al (1991;13) however, points out that unless stock is purchased at issue or below par value and in either case is held to redemption, it is not capital secure as the capital stock fluctuates daily and may well go down.

v. Insurance Policies

These include:

- An insurance policy which is taken out to provide cover against the loss which might arise on the occurrence of an unlikely and an undesirable event;
- An assurance policy which is taken to provide cover against an event which will assuredly occur and;
- An endowment policy in which in return for paying a series of premiums over a period of time, or a single premium at the beginning of the period, the policy holder is guaranteed payments from the insurers of a certain sum at the end of the period.

With the insurance and the assurance policies, there are no returns until the event occurs. Millington (1975; 19) notes that the indemnity cover of insurance is well worth having, but it is debatable whether insurance policies have much to recommend them for as pure investments judging by the way the purchasing power of the sum payable is eroded by inflation. To lessen the shortcomings of insurance policies that did not give adequate security in real terms, packages in the form of linked insurance were devised and offered on the market. These give both insurance cover and the prospect of capital growth that the ownership of equity offers. The disadvantage is that, the quality of the investment will depend upon the quality of the trust management.

vi. Tangible (Non-Financial) Investments

These include items such as antiques, precious stones, jewellery, paintings and furniture. These items do not usually produce income and indeed, the costs of security and insurance may well mean that there is a
net annual outgoing to the investor. Investment in these items relies on capital value increases in order to produce adequate returns (Miller, 1988; 170-172).

The capital return may be large, but they are at best unpredictable and capital loss may be experienced. In addition, the investor who wishes to sell his items may find it difficult to get a purchaser at any given date. To most investors, therefore, tangible investments are only appropriate for inclusion in a fully diversified portfolio due to their lack of income and high risk.

vii. Real Estate

Investments in real estate include commercial, residential, industrial, agricultural or special properties. The main advantage of real estate is that property values and rentals tend over the long-term to grow in line with inflation and generally represent a sound investment. Real estate, therefore, provides stable levels of current income and appreciation to generate positive returns in periods of high inflation. However, investment in real estate requires more careful selection than other forms of investment. Real estate is difficult to resell, partly because of the heavy expenditure outlay required for a single property. The fixed nature of real estate makes it vulnerable. For instance, a desirable property comprising of shops may suddenly become undesirable as a result of redevelopment,
for example, if the centre of gravity of a town shifts away. Real estate needs careful management to obtain good tenants, keep fully let and there is need to apply good maintenance standards in order to maximise rental income. The indivisibility of real estate also adds to its unsuitability as an investment.

Real estate investments are also subject to taxation as opposed to some investments which have tax exemptions such as the housing bonds currently issued by building societies and mortgage institutions in Kenya (Syagga & Aligula, 1999; 28). The tax would be paid either at the time of sale or paid on annual incomes in the form of income tax.

Legislative controls usually affect investment in real property. This is achieved through controls on land use, which restrict the investor's freedom to use his land as he wishes. Development potential is thus restricted by zoning regulations, lease covenants and the building code. Transactions in these properties are also protracted and costly mainly because such transactions deal with people's rights and interests and their complexity gives rise to cumbersome, protracted and costly deals which hamper operations of the real property market as a perfectly competitive market. Also due to heterogeneity of real properties, it is not possible to have a perfect market since the goods and services being sold are most of the time dissimilar in location and physical characteristics (size, materials, design etc.).
2:5 The Decision-Making Process

A decision is the act of conscious choice amongst alternatives (Hill, 1989; 2). The basis of successful management is the effective practice of decision-making. Effective decision-making occurs rarely by accident and it involves a logical, sequential and ordered approach to solving problems.

A decision is necessary whenever there is a likely divergence between the expected outcome and the desired outcome. This involves identifying both what is likely to happen and what one would like to happen. Identification recognises the need for a decision. For instance, whether to invest or not.

Decision-making has been an integral part of the management literature for more than three decades. However, because of the emphasis on decision-making as a hierarchial right, explorations of the behavioural aspects of the decision process were at a minimum for much of the time. It was not until the early 1950’s that developments in decision theory gained a noticeable momentum. During this period, there emerged more powerful and sophisticated tools of mathematics and statistics as well as increased interest in the behavioural sciences. These influences have set the intellectual base for many of the current contributions on the subject.

The most significant aspect of the literature on decision making is what it does not contain. There are few, if any, systematic empirically based
longitudinal studies on the decision process. There are relatively few articles classified as research although literature abounds with limited and partial theories. Many of the theories have been developed by mathematicians and they are modifications of a completely rational man. Such theories in general ignore the psychological characteristics of men or the social environment in which they live.

Decision making is a complex process that involves the fundamental problems of the selection of an alternative that is considered best, allocation of the appropriate level of capital commitment and deciding on the appropriate timing for acquisition and disposal (Dubben et al, 1991;71). The three fundamental decision making problems are considered bearing in mind the degree of exposure to risk and the expected returns. Normally, the aim is to minimise risk while maximising returns. It is, therefore, given that the alternative chosen should offer the most attractive returns with the least exposure to risk.

Rivett (1994) and Byrne et al (1996) have set out the six elements common to all decisions, as follows:

i. The Decision-Maker

This refers to the individual or group making a choice from available strategies. Organizations per se do not make decisions, people and groups do.
ii. Goals or Ends to be served
These are objectives the decision-maker seeks to attain by his actions.

iii. The Preferences or Value System
This refers to the criteria that the decision-maker uses in making his choice. It could include maximization of income, utility etc.

iv. Strategies of the Decision-Maker
These are the different alternative courses of action from which the decision-maker can chose. Strategies are based on resources under the control of the decision-maker.

v. States of Nature
These are factors that are not under the control of the decision-maker. They are aspects of the decision-maker's environment affecting his choice of strategy.

vi. The Outcome
This represents the results from a given strategy and a given state of nature. When the outcome is expressed in numerical terms, it is called a payoff.

According to Hargitay (1993; 9), good decision-making involves a complex process that takes into account the effects of uncertainty and risk. This is
because, taking risks without their careful identification may lead to disastrous results. Most decision-makers are however influenced by the environment of decision-making, as illustrated in Figure 2:1.

**Figure 2:1  The Investment Decision and its Environment**

- Forecast and Investor's short and long term outlook objectives
- Amount and The investment Historic availability decision performance
- of funds of alternative media
- Market Risk and return consideration preferences

Source: Hargitay et al (1993; 9)

The environment of decision-making influences the kind of decisions made in that, before property investment can be undertaken, it is necessary for an investor to set short-term and long-term objectives, then to consider several alternatives by taking into account their historic performance, their
risks and returns. The amount and availability of funds will then dictate their allocation or the commitment of the decision-maker or investor. In some cases, the market rent or price of a certain type of property is well established and can be accepted as a firm indication of the return to be expected. More often however, market prices have to be interpreted. Individual judgements should be obtained from experts (valuers, property managers etc.) in a formalised procedure. Judgements can be changed completely by a single event such as the Gulf War, but this is no reason in itself for not attempting to make them in as rational a method as possible. In Figure 2:1, the final investment decision is, therefore, a product of all the shown variables.

Hill (1989; 3) has proposed a sequentially structured method in decision-making which may be presented diagrammatically as shown in Figure 2:2.

To choose between alternatives involves first specifying the range of alternatives. At any moment, the range of choice open to the decision-maker may be infinite, or at least very wide. However, many of the alternatives may not be feasible so that they may be easily but carefully dismissed reducing the set of possible alternatives to manageable proportions.
In many situations, the search for alternatives is expensive in terms of the decision-maker's resources. Then of course a decision must be made about the amount of resources to be spent on generating alternatives, by comparing the costs of search to the likely benefits the search would bring. The cost of the search process should not exceed the benefits of improving the decision. The next step is to evaluate the alternatives. This will involve arranging the alternatives into some kind of order corresponding to how well they are expected to achieve the desired objectives. To do this normally involves quantifying the alternatives so that
a value or range of values can be attached to each one of them. Lumby (1991; 4) adds that the investor should have a wide knowledge of the available alternatives and opportunities for investment. He should also understand and appreciate his financial position and any other available funds. The investor is also required to examine the economy to determine if it is the appropriate time to undertake any kind of investment. An examination of the economy helps the investor determine the area in which to invest under the existing economic conditions.

According to Kiptoo (1999; 28-30), the methods used in the evaluation of alternatives may either be subjective or objective and may include:

i. Rule of thumb method
This method is subjective and is based on previous experience. The main shortcoming of the approach is its tendency to be backward looking. The method assumes an owner/manager who has been in a similar situation before. However, if the underlying circumstances change, which is usually the case, then the rule may no longer be appropriate.

ii. Simple judgement
With this method which is also subjective, the approach is to treat each decision independently of all others and make no attempt to quantify its probability of occurrence but only state it in terms of optimistic, pessimistic or best evaluation.
iii. Expert opinion

Expert judgement techniques have potential bias arising out of overconfidence in one's ability, motivation, recent decision recall, availability of time and relationship with other experts. This is an approach that has favoured many investors as it saves on their time.

iv. Mathematical or Probabilistic approaches

The approaches utilise mathematical models to evaluate every investment decision. The mathematical methods, by their nature are the most accurate, objective and result in the best evaluation of the alternatives. (The various mathematical approaches are discussed in detail in the next chapter).

Once the various alternatives have been evaluated and a particular alternative settled on, the next item is to get the best way of accomplishing it. This is optimisation and it consists of considering all possible solutions, determining which ones are feasible, evaluating them and arranging them in order. The best solution is then identified guided by the set objectives. The final stage is to implement the decision made. Decisions made in real estate investments are very risky. The margin between profit and loss is very fine and the judgement needed to achieve success can seldom afford to be wrong. Where there are mistakes, their number must be kept to a minimum and they must never be serious. This may help raise the profit margin.
Cadman et al (1983) contends and correctly so that, nearly all decisions involve the assessment of information and by and large, the better the information, the better the decision. However, having the information does not necessarily guarantee a good decision. Nevertheless, a determination to collect together a sound base of information can go a long way in reducing the uncertainty.

Kirzner (1980; 6-7) adds that the calculative aspect in decision-making is far from being the most obvious and the most important element in decision-making. When a wrong decision is made, the error is unlikely to have been a mistake in calculation. It is far more likely to have resulted from an erroneous assessment of the situation. For example being over-optimistic about the availability of means or about the outcomes to be expected from given actions. Or, pessimistically under-estimating the means at one’s disposal or the results to be expected from specific courses of action. Making the right decision, therefore, calls for far more than the correct mathematical calculation. It calls for a shrewd and wise assessment of the realities both present and future within the context in which decisions must be taken. A correct decision, therefore, calls for reading the situation correctly. It calls for recognising the true possibilities and for refusing to be deluded into seeing possibilities where none exist.

Byrne (1996;19) also notes that, the property investment sector has largely ignored the methods of formal decision analysis that are extensively
adopted in other industries. It is, however, important that a formal approach to decision making is done. This has been necessitated by the fact that the property market has been institutionalised internationally. Financial institutions, pension funds, insurance companies and other institutions have a lot of influence in the property sector, and they have a greater need to explain and justify their course of action. This is as opposed to the small property firms where such needs are almost non-existent. Unfortunately, they too have to match the needs for serious decision making undertaken by the financial institutions.

Decision-making approaches have been summarised by Barish (1962), Kirzner (1980), Cadman et al (1983), Rivett (1994) and Byrne (1996), as either normative or descriptive.

i. The Normative Decision-Making Approach

At the centre of this framework, is the concept of rationality. The normative model shows how a consistent decision-maker should act to be successful. Decision procedures are followed that will optimize something usually output, income, revenue, costs, utility etc. The ideal rational person makes a choice on the basis of:

-A known set of relevant alternatives with corresponding outcomes;
- An established rule or set of relations that produces a preference ordering of the alternatives and;
- The maximisation of something such as money, goods or some form of utility.

They further recognise and identify four distinct kinds of decision situations. These classifications are based on the level of information the decision-maker has, and are; decision-making under certainty, under conflict or competition, under risk and decision-making under uncertainty. Figure 2:3 illustrates a rational decision theory continuum.

**Figure 2:3  Rational Decision Theory Continuum**

Increasing knowledge

<table>
<thead>
<tr>
<th>Complete Knowledge</th>
<th>Certainty</th>
<th>Risk</th>
<th>Uncertainty</th>
<th>Lack of knowledge</th>
</tr>
</thead>
</table>

Decreasing knowledge

Source: Rivett (1994)

Decision-making under certainty is the simplest form of decision-making. There is complete and accurate knowledge of the consequence of each
choice. The decision-maker has perfect knowledge of the future and the outcome. Prediction is involved but prediction is assumed to be perfect. However, certainty implies a state of awareness on the part of the decision-maker that seldom exists.

On decision-making under conflict or competition, the states of nature are subject to the control of an adverse intellect such as might be the case in competitive situations, bargaining or war. The techniques for handling this type of a situation constitute the subject matter of game theory. The states of nature of the decision-maker are the strategies of the opponent and the decision-maker is in conflict with intelligent rational opponents whose interests are opposed to his own.

On decision-making under risk, the various states of nature can be enumerated and the long-run relative frequency of their occurrence is assumed to be known. The information about the states of nature is probabilistic and having the probability distribution of the states of nature, through market research, the best decision is to select the strategy which has the highest expected value.

In the case of decision-making under uncertainty, one either does not know the probabilities associated with the states of nature or does not at all know the states of nature. In this case, far more additional research must be conducted before the problem can be approached.
ii. The Descriptive Decision-Making Approach

In the normative decision approach, a few dimensions of the environment are admitted into the decision process and the decision-maker is assumed to be a logical and methodical optimizer. The descriptive decision approach is continually influenced by its total environment and it also influences the environment. It is concerned with how decisions are actually made. The decision-maker is influenced by his personal values, the time available for the decision, uncertainty, the importance of the decision, satisfying behavior etc.

The descriptive decision approach is based on behavioral foundations and the decision-maker is considered a complex mixture of many elements including his culture, his personality and his aspirations. The decision-maker's behavior reflects his perception of people, roles and organizations in addition to his own values and emotions. The whole collection of experiences and expectations developed from recurring and non-recurring situations form the premises for individual decisions.

In the descriptive approach, the decision-maker may be characterised as passing through three (3) time periods as shown in Figure 2:4.
Figure 2:4  Open Decision Model

Problem Stimulus

Start

Approximate \(\rightarrow\) Take
aspiration level initial action

Derive \(\rightarrow\) Invoke \(\rightarrow\) Select
subjective value of subjective alternative & limited
outcome obtain outcome number of 2

Compare value \(\rightarrow\) Decrease level \(\rightarrow\) Increase
of outcome of aspiration range of 3

with aspiration

Wait for \(\rightarrow\) Increase level
further of aspiration

stimulus \(\rightarrow\) Decrease range
of alternatives

Source: Rivett (1994)
In period 1, the individual starts out with an idealised goal structure. He defines one or more action goals as a first approximation to the "ideal goal" in the structure. The action goals may be considered as representative of the decision-maker's "aspiration level". In period 2, the individual engages in search activity and defines a limited number of outcomes and alternatives. He does not attempt to establish the relations rigorously. His analysis proceeds from loosely defined rules of approximation. The alternatives discovered establish a starting point for further search towards a solution. In period 3, search among the limited alternatives is undertaken to find a satisfactory solution, as contrasted with an optimal one. "Satisfactory" is defined in terms of the aspiration level or action goals.

Differences in the normative and descriptive approaches arise in that in descriptive models:

- Predetermined goals are replaced with some unidentified structure which is approximated by an aspiration level;
- All alternatives and outcomes are not predetermined; neither are the relationships between specific alternatives and outcomes always defined;
- The ordering of all alternatives is replaced by a search routine which considers fewer than all the alternatives and;
- The individual does not maximise, but seeks to find a solution to
"satisfy" an aspiration level.

However, descriptive decision models add realism to the decision-making framework. The human capacities of the decision-maker are given some measure of recognition. They bring to bear the totality of forces, external and internal, to the decision-maker, influencing a decision. These forces/factors have temporal variation which emphasize the dynamic nature of the decision process.

Successful decision-making may involve a very simple procedure in one case and very complex technical ones in another. Usually, some elements are common to all decision analysis procedures, for example, a logical statement of the objectives to be achieved. When the relative importance of the objectives has been determined, they will furnish the basis for establishing the criteria for the desirability of alternative proposals. Thus, a rational set of objectives is of pivotal importance in decision-making. It is important to collect pertinent data. The data may be quantitative data based on observation which describe financial, legal, physical and operational relationships and flows or, qualitative data based upon the opinions, intuitions and personal judgement of experts.

In the light of the foregoing discussion, a basic approach to decision-making that may be used in the investment of commercial real estate is as illustrated in Figure 2:5.
Figure 2.5: Decision-Making Approach in Commercial Real Estate Investments

Start

Problem identification

Problem analysis

(Economic, physical, political, legal, locational, psychological and environmental attributes)

Specification of alternatives

Collect pertinent data

Is the data satisfactory?

No

Evaluation of alternatives

(UTILISE mathematical models
Review & adjust for special factors; Apply alternative methods as check; Ensure all crucial issues are addressed)

Determine solution acceptability

Unacceptable

Acceptable

Decision

Investment Zone

Yes

Source: Author’s construct, 2000
The framework is based on normative and descriptive models as well as other pertinent dimensions and the researcher has utilised the framework in analysing the decision-making criteria in investing in commercial real estate. The decision-maker selects one strategy (alternative) over others based on some criteria such as utility, minimum cost, rate of return etc.

The decision-making process as illustrated in Figure 2:5 tends to be cyclic by moving from general considerations to the particular, then passing back to further consideration of the earlier general problems when obstacles to further problems cannot be satisfactorily overcome. The advent of new management tools and techniques if properly applied will greatly improve the quality of investment decision-making and as a result the overall success. However, in every decision, all available information should be taken into account to give the best logical decision. We cannot expect our theory to shield us from all "bad luck". The best protection we have against a bad outcome is a good decision.

2.6: Motivating Factors in Real Estate Investments

Investors in real estate are motivated by various factors. In practice, the aims and policies that lie behind investment decisions are complex. Aims and policies are related: the aims of an estate are its ultimate goals while its policies represent the principles and methods employed to attain them (Thorncroft 1974; 15). For example, two estate owners may both aim at a
high financial return, but there may be several differences in the policies each is prepared to employ; one may invest heavily and accept high risk while the other may concentrate on achieving economies by attention to detail.

The aims of an estate will normally depend on the nature, circumstances and attitude of the owner. For example, a person in occupation of his estate will have different objectives to one holding it as an investment. Also, a wealthy owner will usually adopt a different set of priorities to a property owner with limited resources.

Despite the large variety of investors and policies, Thorncroft (1974:16) points out six chief aims, which motivate conduct in real estate investments:

- To satisfy an economic or social need;
- Profit;
- Independence;
- Prestige and political power;
- Continuity and;
- Social benefit;
i. To satisfy an Economic or Social Need

This is the first aim of every estate or business. Each estate has an economic function, whether it is to provide shelter in the form of buildings, or to provide land, which may yield crops or other raw materials. This function, whatever it may be, is the key purpose of an estate in its existing form.

It is possible for an estate to function without making profits, at least in the short-run (and the long-run, also, if subsidy is available), but no estate can survive unaltered if it loses its economic purpose (Thorncroft 1974; 16). One sign of social responsibility in estate investment is the extent to which function rather than financial return, is regarded as the prime aim of the estate. This consideration is important in property development where uses have often to be provided which fill a need, for example, amenity open space in a town centre development, without necessarily offering the highest return on the capital invested.

ii. Profit

For private owners, profits or, at least the avoidance of losses, is usually essential. Profits are obtained through maximising income and reducing costs. Financial returns are calculated in relation to a given period, usually
a year but often much longer, where large investments, which may not be fully productive for as many as five years or more are concerned.

Profit aims of estate investment need not always be financial. The enjoyment by an owner-occupier of his house or shop or factory, which would otherwise cost him rent, is obviously a profitable return.

iii. Independence

This refers to the freedom and security that real estate ownership ensures, and is probably no less important than the economic rewards. The desire for economic and, often, political independence afforded by owning an estate, is very deeply set within human nature.

In Britain, for example, the wish for independence accounts for the large number of small shops, businesses and firms which cannot be justified on economic grounds (Dubben et al, 1994:66).

iv. Prestige and Political Power

For long periods of history, right up to the present time, a person's position is determined by the extent of his land ownership. Nowadays, although there are many other ways in which a person may hold his wealth, landed property still remains much of its former cachet.
The ownership of land and the way it is utilised have been an important and sensitive issue throughout history. Status has always been accorded to the owner of the land, quite apart from any financial advantage that it may impart. To some individuals, the mere ownership of land can be regarded as an end in itself; it is perceived to give personal satisfaction, security and value (Dubben et al, 1994;9). At corporate level, the psychic value of owning a prestigious building may be of considerable importance. So too can the ownership of a portfolio of landmark properties which can be listed in the annual company accounts. Certain companies, for example, hotel chains have a need to protect a corporate image and to them a building that can act as a flagship for the company may be of added value.

Companies, public authorities as well as private individuals regard seriously the fact that they are judged to a large extent by the ownership and management of their real estate. Prestige is an important aim of business management and in particular, it is a powerful incentive for estate expansion. As such real estate remains the best means by which investors claim some sense of security both financial and psychic in a turbulent world (Wurtzebach, 1988; 14).

v. Continuity

Linked to the social prestige is the wish of many estate owners to
safeguard the continuity of their estates. The widespread concern for estates to be held intact and in their ancestral ownership accounts for the strong urge of keeping property within a family. For example, this aim is important in respect of companies, co-operatives and even public authorities who are anxious to establish and maintain traditions of management and control in respect of particular parcels of land.

vi. Social Benefit

As an aim in estate investment, serving the public interest is chiefly associated with public authorities. However, public authorities also include commercial aims in their policies, while many private owners are sensitive to some social aspects of estate investment. For example, a housing project may contribute to society by creating employment and decreasing cost of transport to and from the place of work.

2.7: The Investment Decision

Real estate investment may take either of the following two separate forms:

- Financial investment in the form of acquisition of land, buildings and similar estate assets in order to derive from them rent or other annual income
Real investment in the form of capital formation of new assets which result in a fresh income yielding activity

Financial investment in real property does not differ greatly from other financial investments, such as purchase of stocks or shares. The price paid will usually reflect the market's estimation of the value of the investment but the individual's decision on whether to invest will depend on his own judgement of the market valuation. If he feels it is too low, he will be inclined to purchase at what he may consider a favorable price.

To make his own judgement on the investment worth of a property, an investor must be aware of the range of investment choices before him and be able to rate and compare the attractions and risks associated with each of them. These include possibilities of loss and gain to both capital and income and troubles of management, particularly any problems that there may be in the collection of rent or the realization of money invested in the purchase price.

Real estate is far more specialised and risky than financial investments and in order to make a decision to invest, the investor must pay regard to a number of details, the most important of which are: demand, cost, finance, timing and acceptable return (Thorncroft, 1974; 264).
i. Demand

Demand is represented by those able and willing to pay for the accommodation that will be produced. The analysis of demand is similar to the diagnosis of value, which together with costs form the balancing sides of the investment decision equation.

Investment will normally go on where the demand is highest and the rewards are greatest. When competition between developers is high, as soon as such opportunities become widely known, the increase in production is likely to bring down the profit return. Where the delay between the investment decision and the completion of income yielding assets as is the case with real estate investments, may be several years, such situations are particularly dangerous.

There are three ways in which demand may be held captive to meet the supply that will eventually flow from the development process. The first is relying on the unique qualities of the new development. This may be absolute in regard to the location of the site, but not so with regard to design and lay-out, methods of financing or presentation to purchasers. Any successful venture is likely to be quickly imitated and offer only short-term rewards. The monopoly position of uniqueness can often be artificially created by advertising and other means of ‘image building’ as is done by manufacturers of most kind of goods.
Secondly, the developer may seek to meet demand that is not yet generally recognised. In identifying demand whose nature and extent is hidden from the market, he must necessarily back his own judgement and will usually need to persuade others especially those providing finance for the undertaking that he is right. It is essential that he backs his opinion with reasons based on scientific analysis and held fact.

Thirdly, a developer can serve a demand, knowledge of which is somewhat restricted. For example, the particular expertise required to know the market in specialist types of buildings such as hotels and entertainment facilities is limited and so helps restrict competition.

ii. Cost

The items of cost in real estate development include:

- Cost of land and building works;
- Fees and payments to professional advisers (Architects, Quantity Surveyors, Land Economists, Lawyers etc.);
- Interest on borrowed capital and;
- Loss of profits from premises kept out of use during the construction work

Due to the fact that costs have to be estimated in advance, the effect of
inflation and rising prices can radically alter the profitable balance of an investment decision between the conception and realisation of a development scheme.

iii. Timing

The timing of development projects plays a large part in their success. The aim of producing new property assets when demand for them is at its peak is an obvious one but difficult to achieve in practice. Often schemes are premature and may fail before demand catches up with them or come after existing demand has been partly or wholly satisfied.

The problem of timing is aggravated by the long interval between the investment decision and its result but this can be overcome to some extent by looking ahead to future demand.

iv. Finance

Property development involves all kinds of risks and expenditure. Only in exceptional cases has the estate developer all the finance he needs to undertake the development and the wish to bear the risks involved. It is, therefore, usually necessary for the risks and financial load to be spread amongst those parties best able and willing to bear them. The availability of finance and its cost (interest rates) are, therefore, key factors to
Finance once secured must be certain as any break in the flow of capital, during the development, can result in additional expenses if not complete disruption of the project.

v. Acceptable Return

The fact that anticipated values appear to exceed probable cost does not make the investment decision certain. The margin between them must be sufficient for the risks involved and provide a return on capital as good as or better than that obtainable by investment elsewhere. The acceptable return will depend on the objectives of the investor and whether he is building for sale, letting or occupation (Thorncroft, 1974; 267).

The problem of the acceptable return must be considered not only as to whether the scheme should be undertaken or not, but also in deciding between a number of alternative schemes. Each project is considered on its merits. The first question is the extent of risks involved. While there are wide differences of risk acceptability among estate owners and developers, where the prospect of failure is at all real, the project is unlikely to be undertaken. However, as a general rule, the higher the risk, the higher the expected return.
2.8: Uncertainty, Risk and Investment in Real Estate

Byrne (1996; 8) defines uncertainty as anything that is not known about the outcome of a venture at the time when the decision is made. An unknown future, which is the cause of uncertainty lies at the centre of all investments.

The limited knowledge about the future subjects like the returns from investments lead to uncertainty. These facts make uncertainty an important feature of all investments and a fundamental problem that has to be addressed by anyone who makes investment decisions. It is argued, however, that there is no guarantee that taking such precautions will result in the realisation of positive returns or complete elimination of losses. According to Hargitay et al (1993;43) uncertainty can never be resolved completely as no one will ever have a complete knowledge of the future. Investment in property involves relatively large amounts of capital into a product that is fixed both in time and space and in consideration of these characteristics, investors in this area have to make decisions with a thorough understanding of the risks involved.

The Reader’s Digest Wordfinder (1996; 1328) defines risk as a chance or possibility of danger, loss, injury or other adverse consequences. This means that, when one undertakes an enterprise, there is a probability of suffering loss. Byrne (1996; 8) defines risk as the measurement of a loss,
identified as a possible outcome of the decision. It gives an investor or decision maker a preview of the likely outcome, which in turn assists him in making a choice on whether or not to commit his capital, and if so, how much and for how long. The latter may, however, be a bit difficult to determine at the inception of any undertaking, but in spite of this fact, the promoter of a project should be in a position to estimate the magnitude of loss that is likely to occur.

Dubben et al (1991; 129) defines risk from the property investment standpoint as the level of probability that a required return, measured in terms of capital value and income will not be achieved. Risk he adds is about the interaction of future returns which can have a number of possible results and the chances that any particular outcome will result. That is, the return on the investment could be significantly different from the return one had expected. The degree to which actual performance may exceed the expected performance is referred to as the upside potential, while the amount by which it falls below expectation is referred to as the downside risk. The latter is of utmost concern to investors especially in cases where the investment is being funded through borrowed funds as one could lose everything including the principal.

The concepts of risk and uncertainty are integral, if not fundamental, constituent elements of any decision-making process. Since investment in commercial real estate is a decision process, it possesses similar
environmental characteristics. Uncertainty may be seen as being of critical importance and the more uncertain the future is should not prevent us from planning for the future. Uncertainty about the future manifests itself as the risk the realised financial results or the profit will deviate from what was anticipated. Uncertainty arises from a person's imperfect state of knowledge about future events. There is uncertainty in decision-making situations where the decision-maker lacks complete knowledge of information on or understanding of the decision and its possible consequences.

The main aim of risk evaluation is to assist in decision making so that investors are able to determine the expected rate of return or the most likely outcome. The investor is, therefore, able to establish the probability of making a loss or alternatively, exceeding the target. It also facilitates the determination of the variability or spread of returns in relation to the expected returns. Also, through risk evaluation, one can determine the protection mechanisms necessary to guarantee the required minimum returns for the investment.

Risk permeates almost every facet of business life and to be in a position to counteract the negative forces of risk, a businessman should be knowledgeable on the subject of risk. Griffiths (1981) has however stated that one may not have perfect knowledge of the nature of risk, but in spite of this fact, the businessman is better placed when in possession of the
knowledge of risk he has to undertake. Awareness of the risk prepares the
risk taker so that he makes provision in order to minimise the impact of
risk. One is then able to make adjustments in his operations which would
help to alleviate the impact of risk.

The large number of variables involved in real estate investments make
risk a major factor in considering these types of investments. Hertz et al
(1994) and Toit & Rooyen (1998) classified risks inherent in these
investments as follows:

i. Tenants' Risks

Let properties are exposed to several risks. There is the possibility of the
tenant vacating the premises before the expiry of the lease or failing to
renew the lease leading to voids; hence loss of expected income. Changes
in economic growth, inflation, competition from new locations for example,
out of town retailing among other factors, may cause a difference in future
incomes and expectations. Tenants may also fail to perform repairing
obligations, causing physical damage to the property.

ii. Liquidity Risks

Although commercial real estate has been traditionally regarded as a long-
term investment, it is not retained in the portfolio indefinitely. It is sold at a price hoped to be higher than the initial capital outlay. Considerable uncertainty, therefore, exists as to when an asset will be sold and the price that will be achieved.

iii. Structural Risks

These are risks resulting from physical, economic or functional obsolescence. These could be due to poor structural design, poor construction, rapidly changing economic and design parameters. To remedy these defects requires funds and this in many instances may not be recoverable from the tenants by way of service charge but borne by the property owner.

iv. Legislation Risks

This relates to the fact that changes in the law may adversely affect the returns on the investment. For example, in Kenya any changes on the Landlord and Tenant (Shops, Hotels and Catering Establishments) Act, Public Health Act, Rating Act, Stamp Duty Act, Income Tax Act, Local Government Act etc., may impose certain restrictions and encumbrances on the property that may lead to losses in returns. Alternatively, they may open up new opportunities that may result in gains to the property.
v. Sector Risks

The property market is a heterogeneous market with very many sectors and sub-sectors. Sector risks are in two dimensions. The first distinguishes between the type of properties for example, industrial, commercial, residential, agricultural or special properties. The second dimension of sector risks is the location factor. Because of the fixed location, the type of use suited for a site, the returns are sensitive to changes in its immediate environment and hence the changes in the location. Sector risks are, therefore, the chance that inter-sector price movements or performance differences between sectors will affect the subject investment.

vi. Financial Risks

This is the uncertainty introduced by the method of financing the investment and of realising the projected rental growth and/or appreciation of capital value. Commercial real estate employs substantial amount of borrowed capital and the potential inability of the property income to cover the required debt service constitutes property financial risks. The fact that lenders offer a variety of variable rate mortgages can also expose the property to financial risks. Rental income may differ from the expected due to changes in economic growth rates, competition from new locations, timing of rent reviews and the cyclical nature of the property market.
Pure Risks

These risks are natural or/and man-made perils and result in physical damage to the property, indirect or consequential loss because of damage to the property and liability losses or loss of the property due to its responsibility for damages to other properties or third parties. Events responsible for these risks include; fire, storm and tempest, floods, earthquakes and subsistence, explosions, political violence etc. Pure risks form the basis of insurance cover for commercial real estate.

Hargitay et al (1993; 175) identifies the following pre-requisites for the effective management of risks in commercial real estate:

- A consideration of the likelihood and impact of such events occurring in the future;
- Devising appropriate strategies for controlling such uncertainties and minimising their impact and;
- Incorporating such strategies into the general decision-making framework.

A consideration of the likely future occurrence and the impact will enable the decision-maker or the investor to establish the possible existence of such risks. He will then seek solutions to make them appropriate for implementation; that is; strive to identify all possible risks and particularly
the major ones, eliminate certain risks, transfer others and attempt to minimise the remaining ones.

When analysing the risks and uncertainties involved in any class of real estate, the investor will consider whether his expectations are reflected by the rate of return sought in such a class of property. Thus, where the risk is low and the income flow is certain, the rate anticipated by the investor is low. Such a rate when applied to an income flow will have a high resulting value estimate (Wendt, 1974;130). It is critical to derive rates that are accurate representations of the qualities of the property in question as seen in the eyes of the most probable type of investor. The appraiser must study the sub-markets for information and guidance on the characteristics and shortcomings of the type of investment and how the latter shall be compensated.

2.9: Summary

From the foregoing discussion, it is evident that there are various types of investment opportunities available for investors. These include investments in cash and money securities, bonds, stocks and shares, treasury bills, insurance policies, tangible investments and real estate. The availability of alternatives in investment, the uncertainty about the future and the failure of each investment to be an ideal investment entails that an investment decision has to be made. In decision making, risk and
expected returns are very important. The aim is to minimise risk while maximising returns. Information on all the available alternatives and opportunities should enable an investor to interpret this information. This calls for accuracy in all aspects of decision making.

For an investor to commit his capital in any investment, various aspects will be put into consideration and they include:

- Security of capital and income;
- Marketability and liquidity of capital;
- Low cost of transfer;
- Tax concessions and;
- Divisibility

Failure to satisfy these qualities entails a high risk in the particular investment and in order to induce an investor to commit his funds, a high rate of return would be expected. Real estate investments require higher inducements than, for instance, government securities. This is because of the qualities inherent in them for instance a high degree of management, costly and lengthy transfers, lack of a perfect market and irregularity of income. In spite of all these, investors in real estate are motivated by the aims and policies of an estate. The economic function and social responsibility in real estate investments, the profits, security and freedom that real estate ownership entails, the prestige and political power attached
to estate ownership, continuity and social benefit afforded by real estate continue to draw investors to this type of investment. However, investors in real estate need to have a clear knowledge of the investment in order to make the correct decision and safeguard against uncertainty and risk. This entails a thorough analysis of all the factors that directly or indirectly affect the real estate investments.
CHAPTER THREE

A REVIEW OF INVESTMENT APPRAISAL METHODS

3.1: Introduction

This chapter covers the various investment appraisal methods highlighting their strengths and weaknesses as decision-making tools in commercial real estate investments. The potential of the approaches in investment appraisal can only be realised when their inputs, capabilities, output and shortcomings are known so that their application is done with an understanding of their reliability. The review done of each of these approaches gives special regard to the information output which may be used in investment decisions. This information forms the basis for proposing the decision tool(s) to be adopted in the decision to invest in commercial real estate.

3.2: Investment Appraisal

Investment appraisal is the assessment of the inherent value of a property for the purpose of making an investment decision (MacLeary et al., 1988; 13). This enables the appraiser to judge whether the property is appropriately valued in the market and hence, enables him give sound advice to his client on purchase or sale. The appraisal, therefore, acts as a decision guide in light of limited resources and unlimited opportunities.
In investment appraisal, the valuation is based on the valuer's opinion of the property's worth and reflects his view on variables such as rental growth, obsolescence and risk, whereas in market valuation, it is the market's view about the variables that is relevant. Market values are based on the market's perception of, for example risk, future growth and obsolescence (MacLeary et al, 1988; 15). It is irrelevant to the market valuation whether the market is ignorant or irrational. In a relatively inefficient market like the property market, a valuer's opinion of a property's value may well be more sensible and rational than the market's, but he cannot arrive at a better market value than the market itself.

3:3 Investment Appraisal Methods

In practice, there are several approaches that are used in the investment appraisal of real estate. The techniques may be categorised as the discounted cash flow and the non-discounted cash flow techniques. The principle upon which discounted cash flow evaluations are based is that money has a time value (Brown & Matysiak, 2000;147). An amount of Kshs.1,000.00 received now is worth more than a similar amount of Kshs.1,000.00 received in a year's time. This is because it can be used today to earn a return. For example, if it could be invested at 10% per annum, it would be worth Kshs.1,100.00 after a year and Kshs.1,210.00 after two years. Under these circumstances, Kshs.1,210.00 received in two years time can be said to have a present value of Kshs.1000.00, the future
sum being discounted at the rate of 10% per annum. The discounting process is thus simply compound interest worked backwards.

The discounted cash flow technique is also concerned with the calculation of the rate of return that a given cash flow is to support. That is, whether the project will realise an acceptable rate of return and secondly whether the project warrants priority so as to maximise the benefits from scarce investment capital resources (Kituuka, 1981; 171). It is a method of assessing and comparing alternative projects. Comparison is made of the present value of the flows of cash that can be expected from each capital project during the course of its existence.

This technique has two approaches of calculating the rate of return and the present worth of an investment, namely:

- The Net Present Value Method
- The Internal Rate of Return Method

3.3.1: The Net Present Value Method (NPV)

The NPV has been defined as the value obtained by discounting separately for each year the difference of all cash outflows and inflows accruing throughout the life of a project at a predetermined interest rate (Kituuka, 1981;173). This method calculates profitability by subtracting the present value of all expenditures when they occur from the present value
of all revenues when they occur employing an opportunity cost rate of
discount. That is, the rate of return that could be earned by investing the
money concerned in the next best alternative.

Any project with a positive value is viable and the one that displays the
highest net present value is, in financial terms the most profitable. That is,
if the present value of the cash inflows is greater than the present value of
cash outflows or capital outlay, the NPV is considered positive and the
project is acceptable. A negative NPV means that the project’s future
earnings are not able to meet the cost of the capital outlay and the project
is not worthwhile. The NPV gives the surplus the investor can expect after
allowing for the recovery of capital invested and for the current rate of
interest. The investor will then decide upon such surplus whether it is large
enough to compensate for the risk and the responsibility entailed. The
decision rule is to accept a project with a positive NPV and to reject that
with a negative NPV. The NPV is obtained using the following formula:

\[
NPV = \sum_{i=1}^{n} \frac{C_i}{(1+r)^i} - A
\]

where:

c = net cash flow in the period
i = period / time
r = discount rate
n = no. of time periods contributing to the project’s life
A = capital outlay

For simplicity and ease of clarification, assume a small project with an economic life of 5 years requiring a capital outlay amounting to Kshs.400,000.00 and which can produce net returns as illustrated in Table 3.1.

Table 3.1: An illustration of the NPV Method

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Return (Kshs.)</th>
<th>Discounting Factor at 13%</th>
<th>Discounted Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60,000.00</td>
<td>0.885</td>
<td>53,100.00</td>
</tr>
<tr>
<td>2</td>
<td>90,000.00</td>
<td>0.783</td>
<td>70,470.00</td>
</tr>
<tr>
<td>3</td>
<td>140,000.00</td>
<td>0.693</td>
<td>97,020.00</td>
</tr>
<tr>
<td>4</td>
<td>160,000.00</td>
<td>0.613</td>
<td>98,080.00</td>
</tr>
<tr>
<td>5</td>
<td>180,000.00</td>
<td>0.543</td>
<td>97,740.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>416,410.00</td>
</tr>
</tbody>
</table>

Source: Author’s construct, 2000

If the acceptable rate of return required on the investment is 13%, the question that arises is whether it is worth investing Kshs.400,000.00 in the project. If the sum of the present values of the net incomes exceed the cost of the entire investment, then it is acceptable. In the above illustration,
as the discounted cash flow exceeded the estimated investment cost, the project is acceptable.

3.3.2: Internal Rate of Return (IRR)

This method is also known as the discounted cash flow yield or the marginal efficiency of capital or the trial and error method or the investor’s method. It is the discount rate at which the present value of cash inflows (positive cash flows) is equal to the present value of cash outflows (negative cash flows) or the rate at which the present value of the receipts from an investment is equal to the present value of the capital invested (Brown & Matysiak, 2000;149).

The IRR may also be defined as the rate that gives zero net present value. Where the IRR is above the cost of capital, the project is accepted. Conversely, where the IRR is below the cost of capital, the projected is rejected.

The method employs the present value concept but seeks to provide an evaluation procedure that avoids the arbitrary choice of the rate of interest. Instead, it sets out by trial and error to establish a rate of interest that makes the present value of expenditure incurred in a project equal to the present value of all revenues gained. That is, it determines the discount rate that reduces the net present value to zero. This is the break-even rate.
Thus, an interest rate is guessed to be the discounted cash flow yield and the aim is to have the sum of all discounted cash flows to amount to zero. If the amount does not equal to zero, but it is positive, a higher interest rate is chosen and the calculations repeated. The converse applies for a negative result.

When the IRR has been calculated, the interest rate attained is known as the yield of the investment. For example, if a Kshs.1,000,000.00 investment pays a dividend of Kshs.50,000.00 per annum forever, one says that its yield is 5%. But the IRR of this investment is also 5% because Kshs.50,000.00 discounted at 5% gives a present value of Kshs.1,000,000.00. This is equal to the initial capital outlay of the investment and it also gives a present value of zero (0). There are several methods of estimating the appropriate IRR for any given project provided the investments involved and the resultant cash flows are known. One is that of mathematically solving the following equation:

\[
\text{IRR} = \sum_{i=1}^{n} \frac{c_i}{(1+r)^i} - A = 0
\]

where:

- \( c \) = net cash flow in the period
- \( i \) = period / time
- \( r \) = discount rate
- \( n \) = no. of time periods contributing to the project's life
Another method involves the use of discounting tables (Present Value of £1). Through trial and error, the actual yield is obtained through interpolation. For elaboration, again assume a hypothetical project that costs Kshs.200,000.00 and whose cash flows are as shown in Table 3.2. For simplicity and ease of clarification, assume a small project with an economic life of 5 years. Using a 12% discount rate, the results are as follows:

Table 3.2: An illustration of the IRR Method

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Return (Kshs.)</th>
<th>Discounting Factor at 12%</th>
<th>Discounted Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60,000.00</td>
<td>0.893</td>
<td>53,580.00</td>
</tr>
<tr>
<td>2</td>
<td>80,000.00</td>
<td>0.797</td>
<td>63,760.00</td>
</tr>
<tr>
<td>3</td>
<td>70,000.00</td>
<td>0.712</td>
<td>49,840.00</td>
</tr>
<tr>
<td>4</td>
<td>50,000.00</td>
<td>0.636</td>
<td>31,800.00</td>
</tr>
<tr>
<td>5</td>
<td>40,000.00</td>
<td>0.567</td>
<td>22,680.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>221,660.00</td>
</tr>
</tbody>
</table>

Source: Author’s construct, 2000
The calculation for NPV produced a positive value of Kshs. 221,660.00. The aim is to reduce the figure to equal the initial capital outlay of Kshs.200,000.00. To do this, a higher discount rate at say, 13% is used as shown in Table 3.3.

Table 3.3: An illustration of the IRR Method

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Return (Kshs.)</th>
<th>Discounting Factor at 13%</th>
<th>Discounted Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60,000.00</td>
<td>0.885</td>
<td>53,100.00</td>
</tr>
<tr>
<td>2</td>
<td>80,000.00</td>
<td>0.783</td>
<td>62,640.00</td>
</tr>
<tr>
<td>3</td>
<td>70,000.00</td>
<td>0.693</td>
<td>48,510.00</td>
</tr>
<tr>
<td>4</td>
<td>50,000.00</td>
<td>0.613</td>
<td>30,650.00</td>
</tr>
<tr>
<td>5</td>
<td>40,000.00</td>
<td>0.542</td>
<td>21,680.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>216,580.00</td>
</tr>
</tbody>
</table>

Source: Author’s construct, 2000

Therefore, considering the total capital outlay of Kshs.200,000.00, the value must be between 12% and 13% and the precise answer can be obtained using arithmetic as follows:

\[
\text{IRR} = 12\% + \text{Difference between the two discount rates} \times \frac{\text{Positive NPV}}{\text{Range of +ve and -ve NPVs}}
\]
Positive (+ve) NPV  
221,660 - 220,000 = 1,660

Negative (-ve) NPV  
216,580 - 220,000 = -3,420

Range between the +ve and -ve NPV  
1,660 + 3,420 = 5,080

Therefore;

\[
\text{IRR} = 12\% + \left(1\% \times \frac{1,660}{5,080}\right) = 12\% + 0.32677 = 12.33\%
\]

Pilcher (1973) and Kituuka (1981) have mentioned the possibility of multiple yields, that is, where there is more than one solution. They have contended that such situations are not commonly found in practice. Umeh (1977) has stated that multiple yields occur only in cases of non-conventional investments where negative or positive cash flows are interspersed and series of positive cash flows are not followed by a series of negative cash flows and vice versa. He has affirmed that conventionally, cash flows have only one yield. Merret and Sykes (1973) have attempted to offer a solution through the extended yield method should the problem of multiple yields occur.

Having worked out the yield of the investment for each alternative project, they are compared with the cost of borrowing the capital. Any project or alternative having a return higher than the cost of borrowing is viable.
Both the NPV and the IRR methods of investment appraisal have the advantage that they take into account the entire life of the project and the timing of the cash flows where; they recognise that an equal amount of money received now is worth more than an equal amount received at a future date. The methods are useful as means of making a choice between different investments whereby for instance, a project with the highest NPV relative to the required capital outlay is considered more attractive. Another advantage of the two methods is that the underlying principles of discounted cash flow analysis are based on a net tax cash flow unlike other methods which largely ignore the detailed and personal taxation effect on investment returns.

However, although the two approaches appear simple, they are subject to several complications in application. Firstly, guesswork and subjective thinking is resorted to by those using them. With the two approaches, there is expected to be a scenario of perfect knowledge where information is available to all interested parties. The success of the two approaches is tied to the acquisition of accurate analysis of income data on real estate investments. In reality however, this is not always possible. In Kenya for instance, there is lack of properly maintained information systems on transactions/activities in real estate. There is no perfect (free and adequate) information available. This is aggravated by the fact that many transactions/activities in the real estate market are made known verbally.
Many appraisers, therefore, resort to subjective estimations thus hampering the degree of accuracy. As a result:

"... jurisdictions which enjoy acceptably accurate assessments represent a minority" (Back, 1970; 47).

Secondly, the approaches are also subjective as they depend mostly upon assumptions about the future. To project cash flows for projects can often be deceiving as future trends can scarcely be predicted accurately mainly because economic situations vary significantly over time and are very volatile. The ever changing market conditions inhibit the accuracy of the information obtained. For example, the returns will vary considerably between economic boom and recession periods. A case in point is the coffee boom period of 1977 in Kenya. During this period, real estate values escalated considerably with increasing demand for real estate. This demand was created by the increased returns from the then lucrative coffee business (Wameyo, 1992; 6).

Thirdly, the success of the two approaches is also dependant upon the honesty of real estate owners/managers. When interviewed, they must be willing and able to give the true/correct information. In many instances, property owners/managers are not willing to give the true information. Consequently, their figures are either highly understated or overstated rendering them useless as comparables. Fourthly, the concept of the rate
of return is also very subjective since each developer/investor will expect a different rate depending on his understanding of the market. The approaches thus become extremely unreliable since even a small change in the expected rate of return could alter the final figure significantly. Kanyugo (1988; 5) noted that in most cases the rates used in the appraisal of real estate are determined through a remote sensing procedure or a rule of thumb practice and justification for such rates has had no supportive ethical or technical basis. This is in spite of the fact that these rates can effectively be derived from market sales and rents. He also noted that the variations in values were at times alarming although appraisers justify this by saying that no two appraisers can arrive at the same estimate. Another point to note is that, while the approaches are useful under conditions of uncertainty, they cannot be considered to be an assessment of risk as the expected value will not have any indication of how far the actual performance may diverge from what is expected.

In the case of NPV, the method does not show the exact profitability rate of a project. As such, the method is rarely understood by businessmen who think in terms of the rate of return on capital. It is also difficult to make a decision between two projects with the same NPV.
3.3.3: Payback Method

The payback has been defined as the period required to recover the original investment outlay through the profits earned by the project. Profits in this sense are regarded as the net profit after tax adding the cost of financing by way of interest paid on borrowed funds plus accruals for depreciation of facilities (Brown & Matysiak, 2000;145). The payback period could be expressed in the following way:

\[
\text{Initial payment/Annual cash inflow}
\]

Therefore, if Kshs.4,000,000.00 is invested with the aim of earning 800,000.00 per year (net cash earnings), the payback period is calculated as follows:

\[
4,000,000.00 / 800,000.00 = 5 \text{ years}
\]

However, in the real world investment projects do not yield even cash flows. In such cases, the payback period is worked on the cumulative cash flow over the duration of the investment. This is illustrated using an investment with an initial capital outlay of Kshs.5,000,000.00 as shown in Table 3.4:
Table 3.4: Payback Period with uneven Cash Flows

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash flow</th>
<th>Cumulative cash flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>(5,000,000.00)</td>
<td>(5,000,000.00)</td>
</tr>
<tr>
<td>1</td>
<td>900,000.00</td>
<td>(4,100,000.00)</td>
</tr>
<tr>
<td>2</td>
<td>1,100,000.00</td>
<td>(3,000,000.00)</td>
</tr>
<tr>
<td>3</td>
<td>1,000,000.00</td>
<td>(2,000,000.00)</td>
</tr>
<tr>
<td>4</td>
<td>1,100,000.00</td>
<td>(900,000.00)</td>
</tr>
<tr>
<td>5</td>
<td>900,000.00</td>
<td>0.00</td>
</tr>
<tr>
<td>6</td>
<td>1,000,000.00</td>
<td>1,000,000.00</td>
</tr>
<tr>
<td>7</td>
<td>800,000.00</td>
<td>1,800,000.00</td>
</tr>
<tr>
<td>8</td>
<td>900,000.00</td>
<td>2,700,000.00</td>
</tr>
<tr>
<td>9</td>
<td>1,100,000.00</td>
<td>3,800,000.00</td>
</tr>
</tbody>
</table>

Source: Author’s construct, 2000

The payback is precisely 5 years.

Investors prefer to recover capital within the shortest possible period. So the shorter the payback period, the more favourable the project. By this method, projects are simply accepted only if their profits will pay for the initial investment cost within a specified period of time, an agreed cut-off period, say two to five years, as a simple rule of thumb.
As repayments can only be done out of profits, there must be adequate projected profits to realise the repayments. The payback may be considered with or without regard to one or two initial years required for the construction of the project. Kituuka (1981; 182) noted that in Kenya, all industrial development finance institutions had no hard and fast rule on the payback period. The period depended on the type of project and the credibility of the entire enterprise, but the method was not being used much, preference being given to the IRR and NPV methods.

The major merit of the payback method is its simplicity. It is quick and simple to calculate (the project’s cash flow forecasts having been made) and is likely to be readily understood by management. UNIDO (1988; 180) noted that it is particularly useful for risk analysis which is relevant in politically unstable countries and in branches of industry that face rapid technological obsolescence. Another advantage of the method is that it is thought by many managers to automatically select the less risky project in mutually exclusive decision-making situations. This is because one of the most difficult tasks in investment appraisal is the forecasting of future cash flows. By emphasizing “speed of return” and selecting the project from a series of alternatives, the appraisal method is almost by definition choosing the least risky project. The method also saves the management the trouble of having to forecast cash-flows over the whole of a project’s life.
The main shortcomings of the payback method are the fact that, it does not show what will happen once a project has paid for itself. It does not rank projects in order of their profitability either and it ignores the residual value of the project after the payback period which may be considerable. It also allows no satisfactory way of comparing investments with different payback periods (Little et al., 1976; 326). The method has also been associated with under-investment possibilities. It has, therefore, not been considered to be a reliable criterion for project selection but can be a useful supplementary tool, a preliminary means, rule of thumb method for selecting projects.

Another shortcoming is that there is no standard meaning of the term "investment outlay" and it all depends on the project. Thus, the decision rule as it stands is too ambiguous in its definition of terminology to give a definitive ruling. Ambiguity can also be seen in the definition of the start of the payback period. When the technique designed as a decision making aid is open to ambiguity in interpretation, then it is likely to be manipulated so as to lend backing for the desired decision rather than the right decision. Any decision rule open to such misuse is dangerous and must be viewed with suspicion. The method also suffers from a fundamental drawback of failing to allow for the time value of money.
3.3.4: Simple Rate of Return or Return on Capital Employed or Accounting Rate of Return Method

It has been defined as the ratio of profit in a normal year of full production of an enterprise to the original investment outlay. Profit in this case is considered after making allowances for interest.

Average profit

Capital invested

This ratio can be based on the total investment outlay or on the equity capital depending on which of the two is required (Kituuka, 1981; 183).

This gives rise to a simple formula:

\[
\text{i. } R = \frac{NP}{K} \times 100 \quad \text{or;}
\]
\[
\text{ii. } Re = \frac{NP}{Q} \times 100
\]

where:

\begin{align*}
R &= \text{The simple rate of return on total investment cost, or} \\
Re &= \text{The simple rate of return on equity capital;} \\
NP &= \text{Net profit (after depreciation, interest and taxes);} \\
K &= \text{The total investment cost (fixed assets, pre-production capital costs and working capital); and}
\end{align*}
Q = The equity capital.

The calculation of the simple rate of return may, for example, take the following form for an equity investment costing Kshs.7,748,000.00.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total project annual sales</td>
<td>8,100,000.00</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Production costs</td>
<td>6,550,390.00</td>
</tr>
<tr>
<td>Gross profit</td>
<td>1,549,610.00</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Corporate tax @ 45%</td>
<td>697,324.50</td>
</tr>
<tr>
<td>Profit after tax</td>
<td>852,285.50</td>
</tr>
</tbody>
</table>

Return on capital invested is 11%.

There are several variances of this method, the most elaborate version being, measuring average income as a percentage of average investment. Profits have often been taken to be net or gross but Pilcher (1973; 35-37) has recommended that it is more meaningful to use a figure net of tax as this is the only money that a firm can freely dispose of usefully. Pilcher has stated that the capital invested is normally taken to be the initial capital used in the investment together with associated working capital used to get the investment to start generating income.
The rate of return expected varies greatly from one kind of project to another, from time to time and from country to country. It depends upon many factors such as the state of the economy, alternative investment opportunities and generally prevailing rates of interest.

The simple rate of return method has some serious disadvantages regarding the difficulty of selection of a ‘normal year’. The method does not take into account the timing of the cash inflows and the outflows during the life of the project and does not provide suitable comparison for two different projects even if the two had the same total investment cost. The method would tend to discriminate against cases where there are large cash flows in the early stages of a project life and abuse the essence of discounting in that ‘a bird in hand is worth two in the bush’ (Kituuka, 1981; 187). There is also the difficulty of defining the amount and timing of capital outlay where investment allowances are given and where working capital forms a large proportion of the capital invested. The method does not allow for inflation either.

However, the method is useful for computing the profitability of the total investment costs when more-or-less equal gross profits are expected throughout the life of the project.
3.3.5: Break-even Analysis

The break-even point is the point at which sales revenues equal production costs. Receipts at this point are equal to both fixed and variable costs. Break-even analysis determines this break-even point. Similarly, the break-even point can be expressed in terms of physical units produced or the level of capacity utilization of the enterprise at which sales revenues are equal to the production costs. At the break-even point, the whole of the produced unit’s total cost is absorbed. At this point, the marginal variable cost and the marginal fixed cost equal the marginal revenue.

The UNIDO manual (1988; 186) has suggested that the break-even analysis should only be considered as a tool, supplementary to other project evaluation methods. Lusht (1997) has however defended the use of the break-even test as a means of establishing prima facie viability of a project and also in choosing between alternative projects or decisions. This test although essentially a liquidity test, may be a useful viability appraisal technique where the liquidity criteria is a significant or major criteria. If a project can break-even, then it is viable and the project that takes a shorter time to break-even tends, although not always, to be a more viable project. Sometimes, projects that break-even after a long time may show large post-break-even profits to justify the delay.
A project that can break-even implies that, at a given level of production, it can cover both the variable and fixed costs. There are many ways of determining the break-even point. For example, it may be determined through the following equation suggested in the UNIDO manual (1988; 186):

\[
x = \frac{f}{p - v}
\]

where:

- \(x\) = Production (sales) volume at break-even point (number of units produced)
- \(f\) = Fixed costs
- \(p\) = Unit sale price
- \(v\) = Variable unit cost

Similarly, the break-even point may be calculated as suggested by Umeh (1977; 37-40) using the following equations:

i. Break-even point = \(f \div (1 - v)\)

ii. Quantity at break-even = \(f \div (p - v)\)
where:

\[ p = \text{Selling price} \]
\[ f = \text{Fixed costs} \]
\[ v = \text{Variable costs} \]
\[ q = \text{Quantity of sale} \]
\[ y = \text{Estimated gross income from sales} \]

3:3:6 Cost-Benefit Analysis

Cost-benefit analysis involves a descriptive or objective weighing of costs against benefits of a proposed decision or combination of both descriptive and quantitative treatment (Umeh 1977; 74). It is one of the techniques used in conducting the viability appraisal of a project. Mishan (1975; 1-17) has stated the essence of cost-benefit analysis in that, the general question that cost-benefit analysis sets out to answer is whether a number of investment projects A, B, C should be undertaken or rejected and if available funds for investment are limited, which one of these that qualify should be selected. Viability appraisal of projects involving the use of the cost-benefit analysis is a concept which primarily pre-supposes that costs and benefits can be directly or indirectly quantified in some form of measuring yardstick. In practice, not all costs and benefits can be reduced to a comparable basis such as monetary or numerical quantities, as some of these are not additives and, therefore, cannot be aggregated arithmetically for purposes of a simple and effective presentation to a
decision maker. On several occasions, cost-benefit analysis has remained a combination of quantitative and descriptive treatment. At one extreme, it would be a purely quantitative approach and at the other a purely descriptive approach.

The greatest problem of the cost-benefit technique as Umeh (1977;84) has pointed out is in connection with costs and benefits which cannot be measured in money terms, either because there are no market transactions in them or because they are objectively immeasurable. Examples include: public goods for which there are no direct payments or services for which there are no transactions currently and consequently no statistics on which to build. There are also problems of definition of costs and benefits, problems of their selection, forecasting and quantification.

Umeh (1977; 82-95) has recommended a "middle-of-the-course approach" and suggested that costs and benefits which can be meaningfully directly or indirectly quantified in monetary or numerical scales should be so quantified while others which can only be described should be boldly accepted on their descriptive merit. He recommends the merging of all costs and benefits monetarily as well as presenting them in a format having the organisational or visual essence of a set of accounts, invoking the notion of a "cost-benefit balance sheet". Kituuuka (1981) has stated that cost-benefit analysis is undoubtedly the most used and arguably the most useful form of applied welfare economics.
3.3.7: Sensitivity Analysis

Sensitivity analysis is the term used to describe the process whereby each estimated element of a project's cash flow is taken in turn (with a ceteris paribus assumption) holding all other estimates constant.

A sensitivity analysis entails varying the parameters to determine what the conclusions would be in viability appraisal. With this method, a range of values rather than a single estimate are provided but with no explicit probability attached to this range. With sensitivity analysis, it is possible to show how the profitability of a project alters with different values assigned to the variables needed for the computation. Two approaches have been suggested for measuring the sensitivity of a capital investment proposal to a particular factor (MacLeary et al; 1988; 77). The first one is by calculating the change in the measure of profitability (i.e. NPV or IRR) as a result of a given change in a factor. If a given change in a factor (for example 2%) results in a much larger change in the internal rate of return (for example 10%), then the project is considered especially sensitive (risky).

For example, if a +10% change in estimated rental value results in a +9% change in the capital value and a +10% change in rental growth up to the date of disposal results in a +7.2% change in capital value; then, this shows that for these variables, the appraisal is more sensitive to a change
in rental value, suggesting that more attention should be paid to estimating this variable.

Sensitivity may also be measured by finding the needed percentage in the factor to change the internal rate of return by a given percentage such as 1.5%. For example, if a 4% change in the factor is required to produce a 1.5% change in the IRR, that factor is less sensitive than if a 0.02% is required to produce the 1.5% change in the IRR.

An alternative approach would be to take a range of possible values for each variable and combine them together to give a range of capital values. This would then show the extent to which the valuation could vary, albeit on a crude basis as the probability of any of the estimated values occurring has not been determined. This simply gives the spread of values giving the expected value and the highest and the lowest values.

Sensitivity analysis enhances the quality of valuation information by probing it for weak points and giving hints on possible sources of risk (Darlow, 1988; Whipple, 1995). The analysis enables the decision-maker to be aware of how sensitive the advice is to changes in the estimates made regarding the project. That is, the margin of error in the estimates made on individual components of the project, for example, the initial capital outlay, life of the project and the discount rate, before the advice that the appraisal gives becomes incorrect. Sensitivity analysis, therefore,
makes the decision-maker more aware of the possible effects of uncertainty. It also directs his attention to those estimates that require special forecasting on account of their effect on the decision's sensitivity.

The technique suffers from an important drawback in that each estimated component is varied in turn whilst all the others are held constant. That is, the technique ignores the possible effects on the decision of two or more of the estimated components varying simultaneously. Determining how much variability to build into the analysis poses another problem. The method also neither makes any attempt to analyse risk in any formal way nor give any indication as to what the decision-maker's reaction should be to the data presented in a sensitivity table. Sensitivity analysis also provides no rules to guide the decision-maker as to whether the initial appraisal advice should or should not be amended in the light of the sensitivity data.

3.3.8: Probability Analysis

Probability analysis also commonly referred to as the 'Hillier Method' was first proposed by Hillier in 1963 and has been modified and applied to property investment (MacLeary et al, 1988; 82). The model is relatively simple to use, but it gets progressively more complex as the number of variables increases and in these situations, a Monte Carlo Simulation approach would be preferable.
A probability analysis attempts to forecast variable optimistic and/or pessimistic estimates to determine the probability or re-occurrence for each value of variables. That is, the inputs are separated into certain and uncertain estimates. The valuer estimates probabilities for forecasted inputs like rental income upon rental review. However, probabilities used are often subjective owing to the scarcity of objective probabilities at the analysis stage of the project. The forecasts may also be derived in scenario terms before computing the value estimates. The outputs from the model are:

- Best value estimate;
- Standard deviation and;
- Probability of it occurring within certain ranges

Typical reporting will take the form:

"................ the best estimate of value is Kshs. ............, but that there is a ......% chance that it will lie between Kshs. ........ and Kshs. ........ and a ......% chance that it will be between Kshs. ........ and Kshs. ........

The model calculates the NPV or IRR in the normal way and then separately calculates the standard deviation. Having arrived at the figures for NPV and IRR, one has to get the probability that the computed figures will actually be realised in practice. What is going to be the magnitude of the expected risk? In other words, what is the standard deviation on the
rate of return? The following procedure has been suggested by Kituuka (1981; 198) for determining the rate of return that incorporates a risk premium:

- Determine the most probable rate of return of the project;
- Determine the rate of return assuming reasonable optimistic assumptions;
- Determine the rate of return assuming reasonable pessimistic assumptions and;
- Weigh the three rates of return according to the best information or use standard weights such as 50% for the most profitable and 25% for each of the pessimistic and optimistic predictions.

The success of this method depends on how accurately the forecaster can describe his degree of confidence in the forecasts. Hence by giving his views as to the probability of the forecasts occurring, then a more accurate decision is likely to be made. The strength of probability analysis lies in that, the method permits the valuer to assess uncertainty and take full account of all possibilities that determine and affect value.

The main problem with the Hillier approach is that for more complex appraisals with more than two variables, the method becomes unwieldy. The method has also been criticised as being limited in solving real estate
issues in a number of ways. It has been argued that real estate characteristics like cash flows and yield are asymmetrical or skewed and not normally distributed. According to Byrne et al (1996), the method is based on the assumption that at least some of the variables in the model can be described by normal distribution. MacFarlane (1994), however, suggests that the shortcoming can be overcome by specifying a low, medium and high value for each distribution before entering it into the model.

Another limitation is that probability can only be adopted if the measure of the values of individual variables or combination of variables can be achieved (Darlow, 1988). This can only be made with a detailed knowledge of the present and future state of the property market and from previous experience of what outcome is likely and the chances of things going wrong. It is acknowledged that perfect market conditions cannot be achieved in the property market, but increased information and transparency trends have in the recent past enabled appraisers to do better analysis.

The usual criticism of valuation being subjective has not escaped the approach. This is mainly due to the fact that subjective probabilities are estimated based on past data and personal judgement of the likely levels of each variable in the future. There is also the problem of possible dependency between variables and assessing it. This will hamper the
estimation process since each variable ideally should be independent of all others. To counter it, Byrne & Cadman (1984) suggested that the model be adjusted so that different ranges of values for certain variables are linked together. MacFarlane (1994) however indicates that while it may be easy to adjust the computer model, the appraiser might not be able to alter the thought process with equal ease. Furthermore, he postulates that in practice, it is hard for the appraiser to assess accurate range of values for each variable, estimate probabilities and link the values of variables.

Despite these limitations, the approach enables the appraiser to organise and identify deficiencies in available data and improve the quality of the information provided. The approach also alerts the risk taker/investor of the full range of possible outcomes enabling a view of all the outcomes before making a decision.

3.3.9: Monte Carlo Simulation

The simulation approach is used in the appraisal of property investments where the number of variables make other methods unwieldy or over simplistic. The method provides a single best estimate and also some measure of the probability of a range of values. Macleary (1988; 93) has used the following examples to illustrate the appropriateness of the method:
Projects A and B have the same best estimate of NPV and on one point, discounted cash-flow appraisal methods would rank them equally but an examination of their risk profile suggests Project B has a higher standard deviation and is, therefore, more risky. For Project B, there is a greater chance of achieving a high NPV/IRR than in Project A, but a lower probability of achieving the best estimate of NPV.

It would be more difficult to compare Projects C and D as Project C would be described as being less risky but also not achieving such a high best estimate of NPV or IRR as Project D. Depending on the investor’s attitude to risk and the investor’s overall portfolio, the investor will make a decision. However, one would expect Project A to be preferable to Project B.

There are two basic stages to the Monte Carlo Simulation:
The first stage involves estimating a range of values for each variable together with the likelihood or probability of each value occurring. In its most simple form, this could mean assuming that the values for each variable were normally distributed so that only the most likely value and the virtually certain range need to be estimated. However, this constraint need not apply and skewed distributions can be assumed if they are thought to be more appropriate.

The second stage involves undertaking an appraisal with randomly selected values for each variable. The process is repeated over and over again, each run producing an NPV or IRR. As some values for each variable have a greater probability of being achieved than others, random selection will mean that they appear more frequently in the numerous appraisals undertaken. Occasionally, different combinations of each variable will produce the same NPV/IRR, so that a pattern builds up of NPVs/IRRs and their chances of occurring.

Typically, the following information would be shown as a result of numerous runs; say a minimum of 100 runs:

- The best estimate of NPV/IRR, but this is not necessarily the same as calculating NPV/IRR using the best estimate of each variable.
- The standard deviation of NPV/IRR.
Ranges of NPV/IRR and their probability of being achieved.

The cumulate probability of achieving or not achieving a certain NPV/IRR.

This information is similar to that produced by the Hillier method.

The main advantage of the method is the greater amount of information provided to investors to enable them make a decision. The method also makes it possible to compare different possible investments on a range of criteria other than just the best estimate of NPV/IRR. The method is also straightforward and easy to explain and it provides a great deal of flexibility in the ways that it can be used. The models themselves can be constructed at various levels of detail and accuracy and the output can be evaluated and modified in a variety of ways. This is especially useful for those problems that have many levels of uncertainty and for those that have many possible outcomes. However, the method has difficulties firstly in estimating value ranges and probability factors for each variable. Secondly, there is the large number of appraisal runs or simulations that have to be undertaken to enable a probability distribution to be formulated for the NPV/IRR. The method also ignores the inter-dependency existing between the uncertain/risky variables. Such failure of the recognition of the inter-dependency of the variables can lead to a completely distorted picture of the expected behavior of the model. The method may be adjusted so that different ranges of values for certain variables are linked.
together, but the problem is not so much in adjusting the computer programme to accommodate this refinement but in accurately assessing the linkages. It is hard enough assessing an accurate range of possible values for each variable, harder still putting meaningful probability factors to each value within that range but even more difficult to link certain values of one variable with certain values of another variable.

3:4 Summary

An investor is mainly concerned with the future value of the proposed investment when deciding on the investment to undertake. Judgements have to be made by the appraiser concerning each investment alternative so as to determine its viability. In so doing, the appraiser has to take into consideration the risks involved in the investment, the future rental growth, depreciation etc. To facilitate this, several methods of appraisal are available and they include the discounted cash flow methods, non-discounted cash flow methods and probabilistic methods as presented in this chapter. However, the most important aspect in these methods concerns the drawbacks of each method. While the drawbacks make it difficult to select the best method to use, the probabilistic methods tend to give a deeper insight into the effects of those factors that influence the rewards from the commitment of capital in investment projects. Aspects of security, that is, the risk dimension of investment, are best viewed and judged in terms of probabilities. The methods have also been hailed as
providing a rational method of arriving at the most probable value whilst quantifying the chances of other outcomes (Byrne et al; 1984, MacFarlane; 1994).

The arguments against probabilistic approaches probably explain their limited adoption in the property market. Statements by Phyrr in 1973 explaining the state of affairs on the potential adoption of the Monte Carlo approach seem still as true today as they were at the time he argued for its adoption. In explaining why the adoption of probabilistic approaches will be limited, he stated that their use will:

"depend to a substantial extent on the industry's acceptance of the probabilistic models for planning and decision-making and on management's ability and willingness to forecast and estimate probability distributions for uncertain variables." (Phyrr; 1973, Quoted in MacLeary et al; 1988, 94)

There is little evidence today to suggest that much has changed in the property sector towards the acceptance of probabilistic models. While the adjustments to allow for uncertainties through the use of these methods may be challenged as nothing more than guesses, perhaps they are, but even so, they are guesses that must be made and will be made, either explicitly or implicitly. Failure to apply the probability adjustment does not
avoid the problem, it merely transfers the guess element in a disguised form to another stage of decision-making.

It is from this that one may deduce that in order to come up with a "perfect" appraisal, the use of a combination of the probabilistic methods may be recommended. This is in order that the shortcomings of one method are counteracted by the advantages of another method making the decision so made to be much more inherent than if a decision was made on the basis of one method of appraisal. Logical investment decisions should aim at maximising returns while at the same time minimising the inherent risks. The use of probabilistic techniques is consistent with this objective.
CHAPTER FOUR

AN OVERVIEW OF THE REAL ESTATE MARKET IN KENYA

4:1 Introduction

In order to fully appreciate the factors that influence the decision to invest in commercial real estate in Kenya, it is first necessary to give a brief overview of the real estate market in the country.

This chapter explains operations and the nature of the real estate market in Kenya, laying particular emphasis on what happens in the real estate market in the city of Nairobi which is the capital city of the country. It is also in Nairobi where most of the subject commercial properties are found. This chapter is set against a background profile of the country’s economic status and structure together with an assessment of the operational characteristics of the Kenyan real estate industry.

4:2 Economic Status and Structure

In the early years following independence in 1963, economic growth in Kenya exceeded the African continent's average of 4.8% standing at 7.2% (Knight Frank Report, 1998; 3). However, since the mid 1970s, economic growth has been more subdued. In the early part of the last decade, gross
domestic product (GDP) growth fell to as low as 0.2% in 1993. Since 1993, fortunately, GDP growth recovered well and in the year 1995 it was running at 4.9%. This was followed by a downward trend, for instance, the year 1998 was characterised by a slow down in economic growth of 1.8% (Economic Survey, 2000;15). By the year 1999, the Kenyan growth rate of 1.4% was well below the African average rate of 3.1%. Figure 4:1 shows the GDP levels for the period 1964 to 1999.

Figure 4.1: Trends in Gross Domestic Product Growth in Kenya:

1964-1999

Source: Author's construct from Government of Kenya Economic Survey Documents, May, 2000
Factors that have been associated with the low economic growth rate include:

- Uncertainty in the political, economic as well as the financial sectors. For example, in the year 1992, economic uncertainty due to ethnic clashes and political instability resulted in the fall of output levels in all sectors.

- Reduced budgetary allocations and donor funding.

- Low construction activities due to high inflation.

- Excessive growth in money supply and depreciation of the Kenya shilling as was the case in the year 1993.

- Withholding of foreign aid by donor countries causing a foreign exchange crisis.

- Prolonged drought in the country as was the case in 1984. Also the years 1997 and 1998 were affected by poor weather conditions which impacted negatively on the agricultural sector (Economic Survey Report, 2000).

One of the most significant challenges facing the Kenyan authorities has been the need to raise living standards against the back-drop of a rapidly expanding population. Indeed, while the economy has been expanding as a whole, economic growth per capita has until recently actually been running negatively. Throughout the 1970s, GDP per capita was increasing at around 2.5% per annum (Knight Frank Report, 1998; 4). By the end of
the 1980s, this had slowed to 0.4%. In the 1990s, average GDP growth per capita was running at around –0.3% per annum. On this measure, the Kenyan economy is actually contracting. Despite many years of independence, good comparative economic growth and relative political stability, the country clearly still faces a considerable challenge in meeting the social and economic aspirations of a large and growing section of the population. The population currently is estimated at 30 million with estimates on unemployment in the range of 20-30% and this forms a significant employment challenge. Also, approximately, 56% of the Kenyan population lives below the poverty line.

In general terms, the economic prospects for Kenya remain positive over the medium term but, in the short term, the outlook is clouded by concerns over the domestic debt. The total unfunded debt is Kenya pounds 16,273.16 million with an external debt of Kenya pounds 15,511.37 million and an internal debt of Kenya pounds 761.79 million. The total stock of outstanding external debt has maintained an upward trend for the last three years with an increase of 34.3% over the period 1998 to 1999 (Economic Survey Report, 2000; 91). Debt reduction would amongst other steps follow a necessary down sizing of the public sector work force. This commenced in the month of July, 2000 where a total of 25,000 civil service employees were retrenched.

In addition to the rapid population growth of 2.9% per annum (Economic
Survey Report, 2000), corruption at all levels is deep-seated, almost to the extent of being systematic and woven into accepted procedural norms. Policies and plans can be easily set aside by powerful political influences. According to a report by Transparency International, in the year 1999, Kenya was ranked as the tenth (10th) most corrupt country internationally up from the twelfth (12th) position in the year 1998. In the African continent, it takes the fourth (4th) position beating only Cameroon, Nigeria and Tanzania (East African Standard, 28.10.99). Corruption has been cited as the single largest contributor to the increasing poverty and deprivation in both direct and indirect terms.

Also, as is common with many other parts of the developing world, Kenya is experiencing the manifold problems associated with rapid urbanization. These include lack of and/or poor housing, lack of adequate provision of sanitation, water supply, garbage management and poor health care. Despite concerted efforts on the part of the authorities, rapid urbanization of 2.5-3.5% has far exceeded the ability of local infrastructure to provide basic services and amenities and generally keep pace with the rate of change. Unplanned, informal and poorly serviced fringe settlements around the major towns and cities, particularly Nairobi represent a growing challenge for the authorities. Lack of maintenance and improvement of the existing fabric, environmental deterioration and pollution are also cause for concern (UNEP Report, 1995; 49).
Until the early 1990s, Kenya's economy was strictly controlled and regulated by the state. Whilst such protectionist policies had hitherto served to dampen some of the worst excesses of African economic volatility, by the early 1990s it had become apparent that a variety of structures and controls were actually retarding the overall economy. Starting in 1993, a widespread program which was backed by the World Bank and other international donors was introduced which saw price controls lifted, import licensing relaxed, relaxation of foreign exchange controls and a variety of investment incentives and new enterprise packages introduced. This has resulted in a more outward facing international trade market.

The Nairobi real estate market has been a direct beneficiary as a result of the city's growing regional, perhaps wider dominance of a more freely trading environment. For instance, with the liberalization of the foreign exchange market, there is no limit on the amount of money that can be taken out by an individual in any one given calendar year. An investor can, therefore, expatriate all capital brought in the country together with the profit earned. Similarly, import restrictions on building materials or high import tariff rates can affect the real estate sector. Most African countries rely on imported building materials and energy used in construction. For instance, the import content in Kenya's construction industry is as high as 37% (Syagga, 1998; 84).
However, Kenya has a turbulent and highly varied inflation history. Inflation has been running at around 10% (Syagga, 1998; 10). Month-on-month measures and three-month rolling indexes can and frequently do show inflation running at anything up to 35% and above. Also the high interest rates of up to 30% have to a large extent dampened economic growth and also negatively impacted on the property market. With these high interest rates, it has meant that the returns on cash can exceed those on property by a substantial margin.

4:3 Investment in Real Estate and the Market Profile

Real estate is a dominant investment medium in Kenya with ownership an important collective and individual objective. There are various categories of investors of real estate who include the private and the public investors. The public investors are further divided into the central government and the local authorities. Although local authorities involve themselves in land assembly and infrastructure provision, they are the owners of substantial residential as well as commercial units especially in major towns in most developing countries. For example, in the case of the Nairobi City Council, the council owns several commercial and residential properties which include; the City Hall Building, City Hall Annex Building, Madaraka, Uhuru, Jericho, Jerusalem, Ziwani and Makadara Estates just to mention a few. The direct involvement of local authorities in real estate development enables them to exert greater control over the development process and to
benefit from the financial rewards of property development. Both the central and the local governments have compulsory land acquisition powers and this makes certain areas "no go" areas for the private investors. The private developers include; individuals, companies, financial institutions, insurance companies and pension schemes. The market is strongly influenced by major institutional interests, principally insurance companies and pension funds, whose property weightings are typically 40% but may go as high as 80% (Knight Frank report: 2000; 4).

Types of real estate investments include; commercial, residential, industrial and agricultural properties.

4.3.1: The Commercial Sector

According to McKenzie (1976;138), real estate is always changing. It is possible to note a stable commercial neighbourhood, a stagnant one and a rapidly improving one. These three main features may be noted in the commercial market in Kenya and in particular in the city of Nairobi. A stagnant commercial neighbourhood, for instance, is seen in the areas surrounding the city centre, such as, along River Road, Tom Mboya Street and the Machakos Bus Station area. Commercial buildings in these areas have been established for years and sales or tenant changes rarely occur. There is also generally low maintenance making the buildings worn out.
A stable condition is notable in the CBD where fairly adequate maintenance and re-modeling occurs. New buildings occasionally come up in addition to the existing ones. Examples of new buildings include; Times Towers, Afya Centre and Teleposta Towers. Rapid changes are seen in the areas outside the CBD, notably, the Westlands and Upper Hill areas. Westlands, a former residential suburb to the north west of the CBD and the Upper Hill area are now established prime office locations. The Nairobi CBD has, therefore, been declining as the commercial hub of the country. Other emerging decentralization areas are along Waiyaki Way, Kilimani area and along Ngong Road (See Map 4.1).

There is the tendency by many professional firms and big international organizations to re-locate to residential suburbs or decentralized areas for example, in the Kilimani area, along Ngong Road and Waiyaki Way. There are several reasons for the growth of suburban markets. One often quoted reason is the introduction of new telecommunication technology for instance electronic mail, mobile telephones, faxes etc., which means that close physical proximity to other companies is now less crucial than before. New technology has undoubtedly assisted but is probably more a catalyst than a prime driver. The opportunity to work in a more pleasant environment away from the city centre, free from pollution, congestion and social problems may be the main reason.
Map 4.1: The City's CBD and areas of Decentralization

Source: Prepared by the Author, 2000
A CBD enjoys comparative better provision of services, roads and other infrastructure. It also benefits from its centrality in location, in effect it may develop a clear dominance over the city. It tends to attract excessive market and investment eventually leading to high development densities. Congestion then ensues. A congested CBD manifests high land values and consequently, high business operation costs, increased inaccessibility, pollution, traffic jams, lack of parking space and an overloading of services and infrastructure. Such an eventuality may result in businesses opting to transfer to less constrained locations. This is what has been happening in the city of Nairobi.

A similar case is in the U.S.A. where Ashton (Sept;1998) reports that companies in the U.S.A. can actually reduce costs by moving to the suburbs. This is not so much as a result of lower rentals as in some cases suburban rentals can be higher than in the respective CBD, but that there is a trade-off between commuting time and wage levels. As cities spread, commuting into the city centres becomes more time consuming. The development of offices in easy reach of residential areas can reduce traveling time and it appears that in return, employees may be prepared to accept lower wage levels. Naturally, this is not applicable in all cases. Depending on respective housing and commercial property location patterns, it can sometimes be more difficult to travel to a decentralized place of work than to a CBD. This is starting to be experienced in the Westlands area with heavy traffic congestion especially during working
hours. The Upper Hill area is also being threatened with infrastructure overload especially narrow roads and lack of adequate parking space. However, in those cases where commuting is made easier, firms have a good opportunity to reduce wage costs. Despite all these changes, Nairobi's CBD still remains the focus of government and public sector occupation.

A further development has taken place in the CBD where sale bazaars have replaced many a shop. Inside the "shop", the area is undivided, but different retailers or sellers display their assorted wares on tables and some are hung on the walls. Most of the wares are imported which is a great pull to many Kenyans who feel that the imported items such as; clothes, shoes, kitchenware etc. are more superior in quality than local products. These developments are mainly to be found along Moi Avenue, Tom Mboya Street, Mfangano Street and along River Road. Indeed, now they are found almost everywhere in the CBD.

The office market in Nairobi has been quite active over the past ten years. In the current upward cycle, annual completion rates in Nairobi have risen from around 50,000 square metres in 1992 to over 100,000 square metres in 1997 and 1998 (Knight Frank Report, 1998; 2). The considerable amount of office space that has been completed in the city of Nairobi over the last twelve to eighteen months alone has caused vacancy rates to rise sharply and rental levels to reduce. At the same time, the economic
situation is causing many companies to reduce staff, shrinking the demand for space, with its inevitable negative effects on rents. For instance, between 1982 and 1992, approximately 148 new commercial buildings were constructed in the city of Nairobi, offering about 7.4 million square feet of space (Swazuri et al, 1992; 9). There has also been the rarity of sale transactions of commercial buildings. This could be due to unaffordable long-term finance that limits the number of purchasers for prime large scale properties.

Building quality varies significantly. While the aim of constructing new buildings immediately after independence was primarily to provide additional space, by the 1980's, the emphasis shifted from overall expansion towards provision of quality space. This has meant the growth of new prime office space particularly in the city centre, the Westlands area, Upper Hill and Kilimani areas. Decorative finishes such as marble tiles have replaced the usual cement screed floors and glass has replaced blocks in walling. Examples of such buildings include; View Park Towers, Barclays Plaza and Loita House all on Monrovia Street and Anniversary Towers along University Way.

High rise developments in the 10 to 30 floor range have a 30 year history of existence in Nairobi, but unreliable services, this includes water and electricity shortages, and high duties on imported items such as lifts are now creating disproportionate costs as owners are forced to install full
load, stand-by power and guaranteed water systems along with more sophisticated security measures.

Commercial leases are typically for periods greater than five years. The reason for this is to avoid the creation of controlled tenants under the Landlord and Tenant (Shops, Hotels and Catering Establishments) Act, Chapter 301 of the Laws of Kenya. A controlled tenancy under the Act is one that has not been reduced into writing or one that has been reduced into writing; but:

- Is for a period not exceeding 5 years;
- Contains provisions for termination other than the breach of covenant within 5 years from the commencement thereof;
- Relates to tenancies specified and gazetted by the Minister after making reference to the rent paid or to ratable values entered in the Valuation Roll under the Valuation for Rating Act, Chapter 266 of the Laws of Kenya.

The Act requires that all issues relating to a controlled tenancy be referred to and determined by the Business Premises Rent Tribunal. Dealing with controlled tenancies therefore ends being time wasting, costly and frustrating especially when legal technicalities are used to have outstanding issues deferred. The landlord who is faced with a controlled tenancy is no longer in full control of his property and the rents paid are
normally below prevailing market rent. As such, the Act militates very strongly against landlords (Chomba; 1990). This has led to calls for the review of the Act from property owners as well as other stakeholders in the real estate sector.

For commercial properties falling outside the Act, rent reviews are to open market rates or via pre-agreed escalation rates contained in the original lease. The latter approach tends to prevail for ease of enforcement.

4.3.2: The Residential Sector

Housing occupies an important position in the Kenyan psyche, along with the concept of home ownership. The provision of reasonable standard of housing for all sectors of the population remains a primary objective in the future plans of the country’s housing policies both in the urban and rural areas. In basic aggregate terms, the demand for housing is clearly high and is also rising. The National Development Plan indicates that over the period 1997-2001, new housing requirements per annum would rise to 123,200 units in the rural areas and to 255,500 units in the urban areas (Knight Frank Report, May, 1998; 12).

Residential investment attracts both institutional and corporate organizations, together with private individuals. However, prohibitive costs make it impossible for the majority of Kenyans to either own or rent
houses. For instance a two bedroomed house in a low income area like Umoja estate goes for as much as Kshs.1,500,000.00. Low income levels, high costs both of materials and land as well as high interest rates on bank loans have been cited as some of the reasons rendering home ownership so difficult for the average Kenyan. Ngugi (1998) argues that although housing finance companies lend money to people against the property being purchased or being constructed, their loans are beyond the reach of most people. Depending on where the money is borrowed, interest rates range from between 26% to 29%. To purchase say, a three million house, Ngugi estimates that the purchaser must have Kshs.852,264.00 in hand before approaching any mortgage company for a loan. This is in addition to other costs that a potential borrower must incur to qualify for a loan which include; stamp duty, valuation and legal fees as well as insurance costs on the property.

The availability of land as well as inadequate investment in or provision of infrastructure makes serviced land a rare and expensive commodity whilst a high interest rate environment makes mortgage finance comparatively expensive and beyond the means of many citizens. These factors effectively serve to undermine any viable market in low cost housing development and investment. In the National Housing Strategy for Kenya (1987-2000), prepared for the International Year for the Homeless, it was projected that by the year 2003, some 143,100 dwelling units would be required annually in Kenya’s urban centres (Construction Review, October,
1999 Vol. 10, No. 8;16). But currently the public and private sectors are hardly involved in any large urban housing projects for low income earners. The World Bank and other international agencies that were involved in the provision of low cost housing in the 1970's and 1980's are no longer involved. Non governmental organisations (NGO's) and community based organisations (CBO's) can hardly make an impact in shelter delivery for low income earners unless supported by both the central and local governments. Also, the site and service schemes and upgrading of slums and squatter settlements have not adequately solved the housing shortage as initially intended. The majority of residential units continue to be developed by the private sector. This continues to meet only part of the rising demand for housing as the urban population continues to grow rapidly at a rate of between 2.5% and 3.5% per annum.

Unless government intervention leads to a statutory direction of investment funds towards housing, there will be for a long time a large deficit between the demand for accommodation and that which is available. It is estimated for instance that, 40% of Nairobi's population live in slums and squatter settlements with inadequate infrastructural facilities and services (Syagga & Aligula, 1999; 36). It is increasingly being accepted that governments through innovative enabling policies can create leverage through which the private sector, the local governments, the non governmental organisations can actively participate in the supply of housing for both the middle and low income earners.
According to a World Bank policy paper on; "Enabling housing markets to work", there are six housing policy instruments which when put into place can greatly assist in reducing the housing shortage (Construction Review, October 1999, Vol. 10, No. 8). These policy instruments address the following issues:

- Developing property rights by ensuring that rights to own and freely exchange are established and enforced and that land programmes, like demarcation of land are properly administered and insecure land tenure regularised
- Developing healthy and competitive mortgage finance by fostering innovative arrangements for providing greater access to housing finance for the poor
- Rationalising subsidies by ensuring that subsidy programmes are appropriate and affordable, well targeted, measurable and transparent.
- Providing infrastructure
- Regularising land and housing development by balancing the cost and benefits of regulations that influence urban land and housing markets
- Organising the building industry to make it more competitive by removing constraints to development and use of local building materials and trade barriers that apply to housing inputs
In Kenya, although these policies are in place the institutional framework for managing the housing sector is lacking. There are many actors such as the National Housing Corporation, the Housing and Building Research Institute and the National Co-operative and Housing Union. What is conspicuously lacking is an institutional framework to make it possible for the government with its limited resources to manage the housing sector in a coordinated manner that provides adequate and affordable housing for all. Further, experts argue that, the existing legislation on rent restriction, the Rent Restriction Act, Chapter 296 of the laws of Kenya, is to blame for the decline in low income private rental investment. The Act protects anyone paying rent of less than Kshs.2,500.00 per month and a landlord can only increase rent through approval of the Rent Tribunal. This being a tiring and time consuming exercise, developers avoid it by not venturing into the low income market. Most developers in Nairobi are concentrating on houses for the middle and upper classes as they are free to decide on the rent level without interference from the government.

In recent years and in the foreseeable future, development and investment has and will continue to be concentrated into the upper end of the housing market, centred around dwellings for multi-national employees, expatriates and affluent locals. For example, for reasons of security, property management costs and land supply, rented apartments generally represent the most viable and active investment sector in Nairobi today.
with many developers reporting relatively good returns and/or responses to demand. These developments include; the St. Austin's Gardens in the Lavington area, the East African Building Society apartments in the South C area, Jade Valley in Westlands, Clanson Court in Muthaiga, the numerous developments in the Kileleshwa and Kilimani areas and the National Social Security Fund units in the Embakasi area.

Accessibility plays a major role in determining the location of residential estates. Almost all the estates that house the majority of the low and middle income population are along the main transportation routes. In the city of Nairobi, this includes areas along Outering Road, Jogoo Road and Juja Road. In these areas, the estates are many and are situated closely together making the areas very highly populated. Examples of these estates are Umoja, Jericho, Jerusalem, Maringo, Eastleigh, Kariobangi and Kayole estates (See Map 4.2).

On the other hand, the affluent of the society tend to locate in the quiet, cool and hilly areas, where public transport is almost non existent or at very low levels. These areas include Lavington, Kileleshwa, Kyuna, Runda, Gigiri and Muthaiga (See Map 4.2). These areas greatly differ from the areas previously mentioned in terms of neighbourhoods, services like road maintenance, garbage collection, population density, traffic jams, water scarcity and general appearance. Also, the prices of housing units as well as the rental levels in the two areas differ greatly.
Map 4.2: Distribution of Income Levels in the City of Nairobi

Source: Prepared by the Author from Nairobi City Council maps, 2000
There are also very marked differences between the residential sector in the urban as opposed to the rural Kenya. With the exception of certain residential enclaves in Mombasa, Kisumu and Nakuru, Nairobi offers a development and investment context that is wholly different from that of the rest of the country. The quality of the built residential stock in the central district of the city is far superior to that found in most other centres and a quantum shift away from that commonly found in rural areas. Whilst Nairobi has a necklace of informal shanty style dwellings and neighbourhoods, the formal city area contains an extensive stock of high quality housing and apartment blocks.

4.3.3: The Industrial Sector

Industrial buildings constitute one form of business real estate. In Kenya, their share of new construction is smaller as compared to both residential and commercial properties. The major influence in industrial real estate development has been location especially due to the location requirements imposed by the planning controls. Industrial activities often necessitate setting up of nuisance standards and land use controls. Industries may be classified as either service or goods industries. In Nairobi, the goods industries are mainly located on the eastern and southern peripheral areas (See Map 4.3). These are the main industrial area and the Ruaraka industrial area. Light industries are to be found along Kirinyaga Road, River Road and Mombasa Road. Service industries which include banks,
insurance companies and hotels are to be found in almost all the areas around the city and these include the CBD, Westlands area, along Thika Road etc. The factors given by both Von Thunen and Ricardo as influencing the location of industrial estates have also been the major determinants of the location of industrial estates in Kenya and their subsequent relocation to other areas (Keeble, 1988;57). The factors include:

- Accessibility to the market
- Quality, cost and availability of transport infrastructure
- Good communication and improved technology
- Agglomeration economies including both external and internal economies of scale
- Adequate supply of labour
- Government regional policy, planning and zoning regulations.

Due to improved technology, government planning and zoning regulations in many towns in the country and in particular Nairobi and Mombasa, many industries have relocated from the main industrial areas to other areas. These new areas of relocation include the newly opened Export Processing Zones (EPZ) and other suburbs of Nairobi like Dandora, Baba Dogo and Embakasi while in Mombasa it is Mikindani, Changamwe and Miritini.
Map 4.3: Distribution of Industrial Locations in the City of Nairobi

Source: Prepared by the Author from Nairobi City Council maps, 2000
Generally, many developers favour warehousing to factories because of the greater flexibility of use, the wider range of first class tenants such as airlines, import and export companies and the slower rate of physical deterioration. Factory buildings on the other hand are mainly owner-occupied, for example, the House of Manji, B.A.T., Timsales and Kuguru Food Complexes, where applications for industrial development are approved on the basis of the ability to provide the requisite infrastructure. There are, therefore, not many developers putting up factory buildings for rental purposes. This is also because, in most heavy industries, the design and installations suit only limited production activities. This necessitates that most heavy manufacturers put up their own industrial estates to suit their line of production. In most cases, among the heavy industries, it is only the go-downs or storage space which can be leased as these facilities are quite general in nature.

Except for the new relocations, most heavy industrial buildings are old and dilapidated partly due to the emissions produced in the production process and also due to old age. For service industries, the buildings are quite new and attractive in order to pull customers. Leases for industrial estates are usually limited to a minimum of ten years for heavy industries and light industries and a minimum of six years for service industries.
4.3.4: The Agricultural Sector

In Kenya, investment in agricultural land is carried out in the following ways:

-Leased land which in addition to rental income provides the possibility of a capital gain in the event that planning permission for re-development can be obtained.

-Vacant possession land to farm in, either by employing a manager or contractor or by entering a share farming agreement. The latter option has proved attractive to some investors who see it as a way of retaining more flexibility than is possible if the land is let, yet involving less risk than if a manager is employed and very little management involvement.

-A sale and lease back proposition where an owner-occupier sells the freehold and takes a large lease back on full repairing terms. This is normally done when the owner needs to raise capital and the terms of the deal may well not reflect current rental trends.

Agricultural land use is mainly dominant in the rural areas of Kenya, rather than in the urban areas. It is, therefore, referred to as rural land use.
Supply of food and other land products to towns is done largely from the local hinterland. There is increasing intensity of agricultural estates and agricultural activity with decreasing distance to the towns. This phenomenon has also been observed in many other cities of the world including cities in the U.K. and USA (Belding, 1981:42) and may be attributable to the high transportation costs.

In the Kenyan urban areas, agricultural estates are mainly found on the peri-urban areas. In the city of Nairobi, agricultural estates are found outside the CBD and over approximately 10km from the city centre. These areas include Karen, along Limuru Road and Kiambu Road (See Map 4.4).

Most agricultural areas are freehold in nature and in most cases they have come to the boundaries of the city through the expansion of the city boundaries. Mainly perishable products, namely, dairy products, fruits, vegetables etc. are produced in these areas. This is because the producers are able to take advantage of the minimized distance to the city centre, good transport system and other infrastructure in these areas. The perishable goods also enjoy the ready market among the city dwellers. Hence dairy farming, poultry and horticulture are some of the major uses that these agricultural estates are put into.
Map 4.4: Agricultural Areas within the City of Nairobi Boundaries

LEGEND

- City boundary
- Major road
- Agricultural area

Source: Prepared by the Author from Nairobi City Council maps, 2000
The market for agricultural estates in the urban areas and in particular Nairobi has been active. These estates, for example, along Kiambu Road, Kangemi, Githurai and Thome areas, are purchased to further the agricultural activities or for conversion to residential use, which is usually the intention of most purchasers. According to Mather (1986;131), an agricultural estate commands a lower value than all other urban estates including industrial and residential uses. In the urban areas, due to the high demand for land for these uses the supply is pushed up to include even the agricultural estates. This has pushed up the prices of agricultural estates around the towns leading to accelerated conversion of the estates to residential estates and reducing the size of agricultural estates drastically. A good example is areas along Kiambu Road in Nairobi where large tracks of coffee farms have been converted to residential use.

The quality of the agricultural estates is determined by soil fertility, amount of rainfall, location, improvements on the estate, topography, climate and the quality of infrastructure surrounding the estate (Mather, 1986; 77). However, fertility and the amount of rainfall have become insignificant in that most agricultural estates are irrigated and artificial fertilizers are used to improve the fertility of the soil. The weather effects have also been made insignificant to a lesser extent in that green houses are being put up to grow some crops like flowers and fruits.
4.4: The Planning System

Nairobi is essentially a colonial town from the point of view of its origin and growth. Ichoya, 1974; King'oria; 1980 and Maina, 1982; have identified a dual and segregated pattern of growth and settlement. The spatial organization of the city, particularly the residential areas show a marked duality. The Western residential areas are located on the higher grounds in terms of altitude, they are well drained in terms of the slope and the red soils found in the area. This is a low density area and has plenty of vegetation cover. With these attributes, it was the home of the Europeans in the colonial era and still remains the home of the remaining Western community, diplomats and the wealthy Asian and African groups. The Eastern part of the city is low lying land, poorly drained and with scanty vegetation cover. This Eastern area was zoned for African settlement and has today remained the home of the poorer classes of Nairobi. This duality persists today.

Urban planning and management has developed from a variety of traditions and schools of thought each emphasizing different aspects. In the 1960’s, urban areas in Kenya were seen as “centres of unproductive consumption” (Syagga & Aligula; 1999). The planning and management frameworks were therefore geared towards controlling their growth through various planning mechanisms. Accordingly, areas that were designated as unplanned were denied urban infrastructural services. Consequently,
many urban residents, mainly the poor went without services they deserved and needed. Presently, urban areas are seen as engines of economic growth in developing countries. Hence the move towards more facilitative and enabling planning and management frameworks.

The planning system in Kenya is similar to the UK model. However, whilst an established planning system with statutory development plans is in place, the city planning authorities often lack the capacity to enforce development control. Detailed zoning systems are in place but these can and do respond to commercial and/or political pressure. The resulting allocation of land in development plans ultimately reflects the priority given to competing claims that are normally determined by political objectives. In contrast, scanty or no regard is paid to the behavior of the market and to the allocation of construction/building land in accordance with market demand.

The current City Plan for Nairobi dates back to 1972 and, despite revisions, it now requires a complete overhaul to take account of profound changes in the commercial and social landscape. Of particular concern is the need to plan for a population growth rate now running at around 10% per annum (Knight & Frank Report, 1998; 7). The City Plan covers only a portion of the city. Large areas are unmapped and facilities undocumented. Expansive housing estates, schools and factories have replaced lush green areas in parts of the city and what were once green
River beds are now sprawling slums, yet the maps do not identify the new developments. With the commissioning of the review of the City Plan by the Kenyan Government, it is hoped that the economic, social and spatial issues dominating the city will be addressed with the aim of increasing urban productivity, reducing urban poverty and improving the urban ecological environment.

The approval to put up a structure, its planning, design and construction are governed by the building code (Republic of Kenya, 1987). For instance, By-law 3, section i, states that:

"A person who erects a building or develops land or changes the use of a building or land .... shall comply with the requirements of these by laws"

Difficulties in abiding by set down requirements has often been given by property developers as one reason causing them to undertake developments without approval (Musau, 1990). The developers complain of the cost and the time it takes for their plans to be approved. One has to follow up the applications, "paper chase", from one office to the next, including sometimes pervasive corruption, making the process costly. Consequently, there have been numerous cases of blatant disregard of planning regulations, resulting in the mushrooming of unplanned
settlements, misuse of road reserves, serious strain on services and infrastructure.

The enforcement powers of local authorities are, therefore, restricted with the planning authorities handling on average 30% of actual development in the city of Nairobi as shown in Figure 4.2:

**Figure 4.2: Level of Planning in Commercial Developments**

(000 square metres)

Source: Author's construct from the Nairobi City Council Documents, 2000

The above scenario has enabled large tracks of unplanned and unregulated developments to emerge around the major towns and cities, especially in Nairobi. A case in point is the Zimmerman estate and Githurai...
areas along Thika Road. Many occupants in these areas have been granted titles for their buildings via blanket approvals in order to bring them into the economic/political mainstream in order to create a tradable investment product and foster a vested interest in building maintenance and upkeep.

It is this state of affairs that resulted in the Architectural Association of Kenya condemning inefficiencies in all the councils in the country (Karirah, 1998; 102). The Association emphasized that the councils had contributed to the construction of unapproved buildings due to ineffective administration and infighting. Furthermore, the coordinating role of council's planning and development control within the city of Nairobi, is not well established and organised. Therefore, the role of the building inspectorate team is weak, meaning that the inspectors do not follow up on-site developments to ensure that the buildings are in accordance with the approved plans. Also, although the code requires the council to give a reply within 30 days of receipt of a duly completed application form and other particulars, studies have established that it takes over a year to have any communication from the council (Musau, 1990).

Due to these factors, developers go ahead and construct the buildings relying on the principle of "estoppel", which simply means that if Mr. A puts up a structure without the council stopping him, then Mr. B can go ahead and also build a similar structure. Relying on the same principle, individual
property owners have extended boundaries of their plots and encroached on public land especially road reserves. Examples include, areas along Lang'ata Road, Naivasha Road in Dagoretti Corner area, Tena Estate along Outering Road and in Zimmerman Estate along Thika Road.

Commercial development planning approvals and informal construction currently add up to around 130,000 square metres per annum (Knight Frank, 1998; 8). The purpose-built market in Kenya is limited, making the majority of construction speculative. Most occupiers will usually only commit themselves to a building as it nears practical completion or when it is finished. Tenants tend to be cynical about developers' time and quality statements and calculate that the threat of unoccupancy provides a bargaining lever as a scheme nears completion.

4.5: Commercial Buildings' Market Size

The delivery of new buildings in the country has risen steadily. In the city of Nairobi for instance, the increase has been from less than 50,000 square metres in 1992 to well over 100,000 square metres in 1997 as shown in Figure 4:3:
Overall, approximately 611,000 square metres of new space was developed in Nairobi between 1990 to 1997. Of this, about 45% (274,000 square metres) was completed in the CBD and 55% (337,000 square metres) in the decentralized market. Average annual completion levels in the CBD and the decentralized market for the same period 1990-1997 was around 34,250 square metres and 42,150 square metres respectively.

Again, there were approximately 112,775 square metres of new commercial space either under active construction or at the site preparation stage in the three principal Nairobi sub-markets (CBD, Westlands and The Hill) as at January, 1998. By sub-markets, some 51%
(57,350 sq. m.) of this space was within the CBD, 15% (17,325 sq. m.) in the Westlands area and 34% (38,100 sq. m.) in The Hill area.

In addition to the space under active development, in the year 1998, there was some 85,000-90,000 square metres of new space with planning consent across the three main markets. Active projects combined with planning permission produce a total potential supply level of approximately 200,000 square metres.

4.6: Commercial Buildings' Rental Patterns

Rental income varies with changes in occupancy rates. Rental properties rarely remain 100% occupied especially commercial buildings. In fixing the rental value of a property, one is largely influenced in practice by the evidence he can find of rents actually paid, not only for the particular property, but also for comparable properties in the same area.

The country exhibits a wide spectrum of commercial buildings' rents that vary in relation to both building quality and location. In the city of Nairobi for instance, modern CBD accommodation may be expected to quote at around Kshs.30-42 per square foot per month (323-452.00 per sq. m.), prime suburban accommodation Ksh.40-45 per sq. ft. (430-484.00 per sq. m.) and the very best new developments in the Westlands and the Upper Hill areas close to Kshs.50 per sq. ft. per month (538.00 per sq. m.). The
lower rents in the CBD may be attributed to the decrease in demand partly due to congestion, pollution and other social problems leading to the re-locating to other areas by several companies.

Ndunguh (1989) has outlined the factors that influence the rents for commercial properties in the city of Nairobi as follows:

- Forces of demand and supply
- Location
- Availability of services
- Parking facilities
- Age of the building
- Building layout and design

The amount of rent a tenant will be prepared to pay will also be influenced by the terms of the lease. If additional burdens are placed on the tenant, he will require relief in terms of the rent paid. For example, where a tenant is responsible for all outgoings, then the rent is likely to be lower than where the landlord meets part of the outgoings. Similarly, if a landlord seeks to limit the way in which the premises are used, the rent will be lower than where a range of uses are allowed.

The Kenyan commercial property rental market is further complicated by the issue of "key money". Most rents are quoted and recorded in the
absence of key money payments. These in effect are premium payments by the tenant to the landlord in respect of prime, rarely accessible sites and pitches. Key money payments can equate to as much as two or three years' rent payable on entry to the property. The negotiable nature of such payments means that key money transactions are rarely aired in the open market.

4.7: Summary

From the foregoing, it can be said that economic growth in Kenya has been quite subdued for the last seven (7) years while on the other hand the population has continued to increase. This has made it difficult for the government to raise the living standards of the people. Also affecting the economy are the problems of the domestic debt, corruption and the problems associated with rapid urbanisation. However, despite all these problems, investors continue to invest in commercial real estate. The question then arises as to what factors influence their decision to invest in these properties. This is covered in the next chapter under the determinants of invest decisions in commercial real estate.
CHAPTER FIVE

RESEARCH METHODOLOGY

5.1: Research Design

Research has been classified in different ways by various authors. For instance, Gay (1981) classified research by the method of data analysis and purpose of the research. Borg and Gall (1997) classified research mainly by the method of data collection. Mugenda and Mugenda (1999) made the classification based on all the three criteria and noted that these broad classifications are not mutually exclusive and a researcher could use more than one classification.

This study utilised survey, descriptive and statistical designs, techniques and measures. These methodologies were necessary in order to achieve the objectives of the study through the systematic collection, analysis and interpretation of data.

The output of the study includes:

1. A record of the factors that investors in commercial real estate investments consider in their decision to invest in this type of investment.
2. A record of the significant factors in the decision to invest in commercial real estate as well as their contribution.

3. A record of the influence the buildings' characteristics have on the rating of the identified significant factors.

4. A record of the influence of the significant factors with regard to their contribution to the decision to invest in these properties.

5. Proposed steps that may be followed in the decision to invest in commercial real estate in order to amongst other goals minimise disparities between the expected income and the realised/actual income.

The units of analysis in the study are:

- The commercial buildings
- The investors (property owners) and the property managers
- The professionals dealing with investment portfolios and in particular real estate investments
5.2: Population, Sample and Sampling Techniques

The details relating to the population, sample and sampling techniques are discussed separately for the commercial buildings and the professionals in the following two sections (5.2.1 and 5.2.2):

5.2.1: The Commercial Buildings

The target population in the study comprised of all commercial buildings in the city of Nairobi that are:

- Purely commercial and are not occupied for other purposes for example, residential or industrial uses;
- Not under construction or being renovated;
- Not of temporary construction;
- Not fully owner occupied and;
- Acquired or developed by the current owner(s) in the last fifteen (15) years.

A commercial building, which is the work place of an increasing number of people, has been defined in various ways, as:

- A structure in which services are provided in contrast to structures
in which products are manufactured or sold or people reside (Institute of Real Estate Management, 1981; 3)

-A place where information is processed and the basis for decisions is prepared (Institute of Real Estate Management, 1981; 3)

-A structure other than an industrial building used for the purposes of a trade, profession or vocation, but does not include any building in use as or as part of a dwelling house (Abbott, 1987; 152).

-A structure which is occupied for the purpose of carrying out a trade or a profession in the expectation of a profit (Concise Oxford English Dictionary, 1982; 188)

This study has adopted the above definitions whereby; a commercial building is taken as a structure other than an industrial building or any building in use as or part of a dwelling house which is occupied for the purpose of a trade, profession or vocation in the expectation of a profit.

The choice of commercial buildings as the main focus of the study is prompted by the fact that in Kenya, it is mostly in commercial buildings where real estate investment is undertaken purely as a business venture or in the expectation of a profit. In the case of residential and industrial properties, while some people construct/acquire them purely for investment purposes, the investment is normally undertaken for the provision of a home/shelter, or to meet the specific production requirements of the individual or firm. However, although the emphasis is
on commercial buildings, many of the aspects the researcher has brought out in the study, do not only apply to commercial buildings but also to other properties be they residential or industrial.

The population of commercial buildings is within the geographical boundaries of Nairobi. The choice of Nairobi is based on the fact that it is the capital city of Kenya and compared to other urban centres in the country, it has the highest concentration of commercial buildings. As such it forms a good representative of the other urban areas in the country. The period of fifteen (15) years was been decided upon to enable the researcher obtain the necessary information on the various activities and performance of the chosen buildings. It is considered that information for buildings older than or acquired more than fifteen (15) years ago may not be easily available or may be too old to be of much use today.

The sampling of the buildings was carried out using stratified random sampling. All the commercial buildings within the city boundaries were placed into groups (strata) according to the zones. Stratification is necessary because of the non-homogeneity of the building population by zones. Stratification is recommended in situations where there is non-homogeneous data (Lapin, 1982; 88-89). To facilitate the sampling, both the Nairobi City Council city plans as well as the street patterns were used. Also the administrative boundary maps were used to map out the entire city's boundaries. From the City plan, out of the total twenty (20) zones in
the city, only eleven (11) areas zoned for commercial use together with the mixed development areas were considered as shown in Table 5.1 and Map 5.1.

**Table 5.1: Commercial and Mixed use Development areas in the City of Nairobi**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Area covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>The City Centre and part of the Nairobi Hill area.</td>
</tr>
<tr>
<td>1B</td>
<td>The whole of the Upper Hill area.</td>
</tr>
<tr>
<td>2</td>
<td>Pangani, Eastleigh, Pumwani, Ngara and Juja Road Estates.</td>
</tr>
<tr>
<td>3</td>
<td>Parklands and Westlands areas.</td>
</tr>
<tr>
<td>4</td>
<td>Kilimani, Kileleshwa, Thompson Estate and Woodley areas.</td>
</tr>
<tr>
<td>5</td>
<td>Lavington, Spring Valley and Kabete.</td>
</tr>
<tr>
<td>6</td>
<td>Muthaiga area.</td>
</tr>
<tr>
<td>7</td>
<td>Mathare, Kariobangi, Huruma and Thika Road areas.</td>
</tr>
<tr>
<td>8</td>
<td>Shauri Moyo, Bahati, Kaloleni, Buru-Buru, Uhuru and Jericho areas.</td>
</tr>
<tr>
<td>10</td>
<td>Nairobi West, South B, South C, Langata, and Golf Course Estates.</td>
</tr>
<tr>
<td>15</td>
<td>The semi-rural; Dagoretti areas that include Riruta Satelite, Waithaka, Kawangware, Dagoreti Corner and Mutu-ini areas.</td>
</tr>
</tbody>
</table>

Source: Author’s construct from the Nairobi City Council City Plan, 2000
Each area zoned for commercial development or mixed use development within the city of Nairobi was considered as a stratum because buildings located in the same area have similar locational characteristics such as accessibility, cost of land, environmental quality etc. A physical count of all the commercial buildings in each zone was done and the total number of commercial buildings in the city of Nairobi was established as one thousand five hundred (1,500). Out of this number, the commercial buildings that met the set requirements; that is, of the nature described in the population definition, were three hundred and seventy eight (378) buildings. Stratified random sampling was then used to select the buildings to be studied. Stratified sampling is carried out by placing all members into groups (strata) according to some characteristic that is common among them. Then the specified number of units is chosen from each of the groups by random means.

Using the names of the buildings, 50% of the buildings identified in each zone were taken as case studies through the random sampling technique. That is, a total of one hundred and eighty nine (189) buildings out of the three hundred and seventy eight (378) buildings. In determining the sample size required, the rule of thumb should be to obtain as big a sample as possible (Mugenda and Mugenda; 1999). However, resources and time tend to be major constraints in deciding on the sample size to use. Gay (1981) points out that the sample size depends on factors such as the number of variables in
the study, the type of research design, the method of data analysis and the size of the accessible population. Gay (1981) goes further and suggests that for correlational research, 30 cases or more are required, for descriptive studies, 10% of the accessible population is enough and for experimental studies, at least 30 cases are required per group. Alreck and Settle (1985) have proposed that a sample size of 100 cases is adequate. Fisher et al (Quoted in Mugenda and Mugenda; 1999) has recommended that if there is no estimate available of the proportion of the target population assumed to have the characteristics of interest, 50% should be used. Based on the above, it was felt that 50% of the buildings identified in each zone would be large enough to represent the salient characteristics of the target population.

The percentage of 50% gives a proportionate stratified sample whereby the number chosen in each stratum is proportionate to its share of the total population. With the sample of each stratum being proportionate to its portion of the whole population, the risk of under or over-sampling the strata is avoided. This markedly reduces the potential sampling error (Luck & Rubin, 1992; 244).

A proportionate stratified sample of one hundred and eighty nine (189) buildings was obtained. This number was then reduced to one hundred and fifty (150) buildings. Some of the reasons responsible for the attrition were:
- Lack of information needed in the research because such information had not been kept.
- Non response from property owners/managers for purely uncooperative reasons
- Decline to participate for fear that the solicited information was too sensitivity

The attrition occurred for reasons beyond the control of the researcher. The attrition problem is however not a cause for concern as the 150 buildings form forty percent (40%) of the 378 buildings and each of the eleven zones was adequately represented. Also, ordinarily, a sample size of less than about 30 cases provides too little certainty to be practical and usually experienced researchers regard about 100 cases as the minimum sample size when the population is large (Alreck & Settle, 1985; 88). Mugenda and Mugenda (1991) are of the opinion that a response rate of 50% is adequate for analysis and reporting. A response rate of 60% is good and one of 70% and over is very good. The authors have however stated that all means available ought to be used to increase the response rate in order to have a representative sample for meaningful generalizations. They have also indicated that there should be concern when 30% or more respondents do not return the questionnaires. The study had a response rate of 79% and the non respondents formed only 21% of the sample.
In the case of non-response, a researcher should be concerned because this could affect the results of the study especially if the non-respondents are similar in characteristics that are critical to the study. Similarly, results could be affected if the non-respondents are significantly different from those who have responded. In the case of the study, the non-respondents were not found to be different and it was assumed that the sample of those who responded was representative enough. Mugenda and Mugenda (1999) and Gall et al (1996) have proposed that unless the response rate is very low (below 50%), it is usually safe to assume that the sample is representative enough. A sample size of 150 buildings was, therefore, considered to be large enough to give valid and reliable results.

5.2.2: The Professionals

Included in the study also were professionals dealing with investment portfolios and in particular real estate investments. Such professionals included Valuers, Property Managers, Architects, Quantity Surveyors, Stock Brokers and Accountants. As the people charged with the responsibility of advising investors in general and investors in real estate in particular on the suitability of their investments, it was felt necessary to obtain information relating to: the form and level of training received as it relates to real estate appraisals, experience attained in real estate appraisals and in particular commercial real estate, methods of investment appraisal used, number of
appraisals undertaken etc. To ensure that the individuals involved in the study were professionals in their respective fields, the selection was done from the six professional bodies that deal with investment appraisals. These bodies are:

- The Institution of Surveyors of Kenya (ISK)
- The Institute of Certified Accountants of Kenya
- The Architectural Association of Kenya (AAK)
- The Institution of Quantity Surveyors
- The Institution of Engineers of Kenya
- Member firms and investment advisors of the Nairobi Stock Exchange

Having identified the professional bodies, the target population comprised of all those professionals who:

- Had registered offices within the City of Nairobi;
- Were members of the identified professional bodies;
- Were registered and licensed to practice in Kenya and;
- Had undertaken an appraisal(s) of commercial real estate in the last 15 years.

Again, as with the commercial buildings, the choice of Nairobi was based on
the fact that it is the capital city of Kenya and compared to other urban centres in the country, it has the highest concentration of professionals and not only in the investment field, but other fields as well. It was also envisaged that more professionals will continue to be based within the city due to its position as the economic, financial and political centre of the country. As such it forms a good representative of the other urban areas in the country. The period of fifteen (15) years was been decided upon to enable the researcher obtain the necessary information. It was considered that information going beyond the 15 years may not be easily available.

The total number of professionals who met the above criteria and; also after having taken into account dual or more memberships, was 201. Stratified random sampling was then used to select the professionals. Stratified sampling was carried out by placing all the professionals into groups (strata) according to their respective professional bodies.

Using the names, 50% of the professionals in each professional body were selected through the random sampling technique. That is, a total of one hundred (100) professionals out of the two hundred and one (201) professionals. Of the 100 professionals, responses were obtained from all of them.
5.3: Data Collection

The data was collected from the owners/managers of the chosen one hundred and fifty (150) buildings as well as the one hundred (100) professionals using questionnaires and oral interviews. Information relating to the buildings for instance, the construction cost, purchase price and the income is usually sensitive. It was, therefore, necessary to assure the respondents that the information given was to be treated with confidentiality.

As the interviews were being conducted, a physical survey of the chosen buildings was also conducted with the aim of observing and recording the actual condition of the buildings. Observation is a very fruitful method of data collection because it reduces the chances of incorrect data being recorded by respondents (Harper, 1994; 26).

Five (5) research assistants were engaged to collect the data. The data collected consisted of information such as; the motivating factors in the decision to invest in commercial real estate, the methods used in the viability study of the investments, rental levels, the predicted and actual cash flows, occupancy levels, sources and cost of finance, the level of out-goings etc.
5.4: Variables in the Study

From the review of literature related to investments in general and real estate investments in particular, various variables that influence the decision to invest in commercial real estate were conceptualised. The literature was obtained from magazines, journals and studies both published and unpublished by other scholars in related fields on Kenya and other countries. More variables were identified through unstructured interviews with valuers, estate managers, architects, economists and quantity surveyors. The interviews aimed at identifying these factors based on the experience of these professionals.

5.4.1: Factors considered in the Decision to Invest in Commercial Real Estate Investments

The initial exercise involved obtaining the factors that influence the decision to invest in commercial real estate. That is, the factors that investors consider before investing in commercial real estate investments and the relative importance of the factors.

These factors which were all considered in the analysis and, separately include:
1. Expected Income from the Investment

This is the amount the investor expects to receive from the property. In Kenya, there are active markets for both property sales and lettings particularly in the residential market. The commercial property market is, however, largely a rental market. The expected income is given in Kenya shillings per annum.

2. Expected Rate of Return

The expected rate of return is another factor that influences the decision to invest in commercial real estate. Mayo (1988; 19) gives the rate of return as the returns or benefits earned by the investment relative to its cost. The expected return is the incentive for the investor in accepting risk, and it is given as the net annual income expressed as a percentage of the investment cost.

3. Cost of Finance

Before an investor undertakes an investment, he will consider his financial position as well as the availability and cost of finance. Since large sums of money are involved in real estate investments, very few investors are able to supply all the required funds and hence the need to borrow.
In Kenya, approximately, 52 financial institutions (both banking and non-banking) provide either bridging finance on short term basis (3-5 years) and/or end finance on long term basis (10-20 years) (Syagga, 1998; 85). If the interest rates are high as compared to the market rate of return, the borrowers will find it costly to undertake an investment due to a reduction in the income receivable. The cost of finance is given as the average lending rate per annum.

4. Payback Period

The payback period considers how long, in years, it will take to recoup the invested capital. Investors prefer to recover capital within the shortest possible period. So the shorter the payback period, the more favorable the investment.

5. Size of the Building

This relates to the size of the investment (building). Whether it is a single storey or a multi-storey building. The size has been given in square metres. Size determines the extent of use of a property and to some extent reflects the income envisaged from it. All other variables held constant, the larger the property, the higher the expected income.
6. Inflation Level

Johnson (1978; 448) states that protection against inflation is a constant concern for investors. The loss of purchasing power is of major concern to those who depend upon income generating investments as a source of income. If the prices of goods and services in the economy increase, the real purchasing power of the investors’ assets and the income generated by them is reduced. Lumby (1991; 122) further states that investors are attracted to investments that have the possibility of providing a reasonable hedge against inflation.

7. Property Taxation

Real estate investments are subject to taxation as opposed to some investments that have tax exemptions. In Kenya, real estate is affected by various taxes and these include: income tax on profits, V.A.T. on construction and management costs, stamp duties on transfer or lease transaction and land rates.

Investors who are liable to high rates of income tax may consider very carefully the various options available to reduce or defer the tax burden on their incomes. Investors will tend to avoid the highly taxed investments or properties.
8. Distance

This relates to the distance, in kilometres, from the Central Business District. According to Von Thunen, rents and land use intensity decline with distance from the city centre (Quoted in Kariuki, 1988;150). It has also been found out that land use patterns tend to resemble a series of roughly concentric circles based on land values, with the highest land values being for the Central Business District.

9. Cost of Management

Investments differ in degrees of management. They vary in the amount of inconvenience and cost of collecting or obtaining the income. An investor would require minimum inconvenience and expense in management as it significantly impacts on the level of income. Investments in banks and other financial institutions may be easily and cheaply converted into cash, whereas conversion of an investment in real estate will prove to be more costly and time consuming.

10. Economic Climate

The prevailing economic climate of a region will affect the decision to invest. Otiende (1990; 40) points out that factors such as the rate of interest, inflation
rate, taxes, commercial and industrial trends, employment trends, wage levels, money demand and supply all reflect the current economic situation, and affect the returns on an investment.

11. Legislative Controls

Legislative controls also affect investment in real estate especially those controls that concern land use and which restrict the investor's freedom to use his land as he wishes. They include zoning regulations, lease covenants and building codes.

The government plays a big role in enhancing or reducing the demand through its fiscal and monetary policies by determining the volume of money circulating in the economy (Agutu, 1991;12). The rate at which this money changes hands will determine the level of consumption and hence the level of investment in the economy. The monetary policy can also be used to control the level of inflation in the economy. The tools used by the Central Bank to this end include open market operation, bank rates and the discount rates. The open market operation increases the money supply when the government buys treasury bonds from the public thus increasing the money supply. By selling the treasury bonds to the public, the Central Bank (hence the government) withdraws money from the public. The other tools used by the Central Bank have the same effect although largely they do not affect the
public directly but they affect banks and financial institutions with regard to the lending that can be made available to the public.

12. Location

Chan (1989; 530) defines location as the situation of a property in relation to other properties and to the facilities that serve the property such as roads, public transport and other complementary uses. In any given region, there are some specific areas that are more desirable, popular or exclusively famed because of various factors. These factors include the history of the area, the unique locality, the facilities and services available, the general cleanliness of the surroundings, the nature of the neighbourhood, natural attractiveness, distance from the Central Business District or any other centre of gravity etc. (Swazuri, 1996; 216-219). Some locations are suitable for development, because they have all these features combined in a remarkable way.

13. Demand for Commercial Space

The demand for commercial property is a derived demand determined by the interplay of economic factors and activities carried out in the area in question. A high demand means that investors are called upon to increase commercial space for these will be readily taken up and paid for by tenants/users. A low demand means that properties remain vacant or partly occupied for
sometime, thereby leading to losses to the owners as well as lower returns. Demand is a function of several factors, such as the type of use, the location, the appearance of the property, the type and level of finishes, services and facilities available etc.

14. Supply of Commercial Space

The supply of commercial space is a direct reflection of the activities of the construction industry. The construction industry on the other hand is governed by the general level of economic activities in the economy.

Government policies are quite cardinal in this respect as they relate to social services and capital investments. The cost of construction materials and labour also affect supply. This is because, if they are high, the profit margin will be quite low. Therefore, supply is determined by the existing stock of buildings, cost of construction, interest rates, plan approvals etc. With a high supply of commercial space, the rents are likely to be lower and hence the income received will also be low.

15. Opportunity Cost of the Investment

This is the cost of forgone alternatives. The investor will consider the relative advantages of his alternative investment outlets. In a period of fluctuating
values, soaring inflation, escalating costs and high interest rates, the principal fact determining the investment decision can be summarised as being the individual investor’s concept of how much worth he considers the subject investment to possess vis-à-vis the available alternatives.

16. Political Climate

This refers to the prevailing political climate. The most extreme form of political change is revolution. A good example is Eastern Europe where the revolution against communist rule around the turn of the last decade led to the emergence of democratic governments and burgeoning real estate markets. It has been estimated that around 60% of countries worldwide are now under a form of democratic rule, compared with 41% eight years ago (Ashton, 1998; 21). These processes of internal democratisation and liberalisation offer enormous opportunities for the real estate industry.

Globally, countries are increasingly forming economic and even political blocs with their neighbours to permit them compete more effectively. An example is the East African Regional Co-operation between Kenya, Uganda and Tanzania and the European Union that currently combines 25 nations.
17. Nature of Property Ownership

A number of property regimes exist; notably, private property ownership, communal ownership, state ownership and open access (Syagga, 1998;84). Private property ownership promotes private investment in property. Communal ownership may allow for private investment, but is less attractive due to the large numbers enjoined in the ownership. State ownership may not confer ownership to its citizens but only right to use on some specified parcels of land, while open access does not provide any specific parcels to individual users as the use is not individualised.

While market economies like Kenya opted for private ownership, former socialist countries like Tanzania, Ethiopia and Zambia opted for state ownership and open access. In Kenya, urban land is privately owned either on leases (mainly of 99 and 45 years) or on freehold title. There is no restriction on land dealings except for development control under the Town Planning Act and the Local Government Act. Land is, therefore, freely traded without restriction on ownership. In other countries, foreigners may not be allowed to own land or as in Botswana, ownership by foreigners is limited to 50 year lease terms. These are matters that influence the decision to invest in commercial real estate.
18. Size of the Land

Size determines the extent of the level of development that can take place. All other variables held constant, the larger the piece of land, the higher the expected development and the higher the expected returns.

19. Cost of Land

In relation to real estate, one major expensive item is the land. For example, in high class residential areas of the city of Nairobi, such as Muthaiga, Lavington and Gigiri with a minimum land sub-division of one acre (0.4 Ha), the average price of land is Kshs.10 million per acre. In areas further out of town which are not on sewer such as Lang'ata, the average price reduces to Kshs.4 million per acre. The price of land for commercial use is between Kshs.70 and 100 million per acre. Investors are, therefore, concerned about the cost of land.

20. Cost of Construction

Besides the high land prices, the construction costs average between Kshs.10,000 and 15,000 per square metre in the city of Nairobi. Odeny (1990; 18) argues that where construction projects are implemented especially in the less developed countries, the construction costs are often higher than
anticipated and this presents financial constraints on the successful completion of an investment. Investors are concerned about the costs of construction, which are quite high. These costs include the cost of materials, transportation costs, labour and managerial costs.

21. Security of Capital

Security of capital means protecting the original investment and protecting the purchasing power of the capital, as total loss of capital may be difficult to replace. The protection of the money value of the investment is of prime importance to investors. The principal of any investment may be recovered through resale only if the investment is readily marketable and enjoys price stability. For example, securities such as treasury bills or bonds enjoy price stability because they mature at a fixed date and eventually recovery of the initial capital at maturity is expected.

22. Security and Regularity of Income

Investors are also concerned about the security and regularity of the income receivable from the investment. Stability of income allows the investor to plan his total investment programme more accurately and logically. An investor who requires an assured income will, therefore, base his decision on an investment that provides the level of income that he desires. For instance, if
an investor wishes to invest in residential properties which are to be let on completion, he will have to consider whether the income he anticipates from this kind of investment will be regular. Also, whether the type of tenants he is bound to get are likely to default in rent payment, thus making his income insecure. If the latter is the case, then the investor will reconsider his decision.

23. Marketability and Liquidity of Capital

Marketability and liquidity of capital is in relation to ease of withdrawal. The investor may at some future date, need to transfer his investment back into cash at short notice. The investment must be easy to sell at short notice or converted to cash at any particular time without losing the initial capital.

Real estate investments are not very liquid because to obtain cash takes both time and some expenses. However, real estate investments do offer three methods of raising cash; one may either, sell the property, let it or borrow money using the property as security. All these methods in most cases demand a lot of time and expenses.

24. Psychological Satisfaction Expected from the Investment

To some individuals, the mere ownership of real estate can be regarded as an end to itself; it is perceived to give personal satisfaction, security and value
25. Likelihood of the Investment Enhancing the Investor's Image in the Community

For long periods of history, right up to the present time, a person's position in society is determined by the extent of his real estate ownership. Although there are many other ways in which a person may hold his wealth, landed property still retains much of its former cachet. Status has always been accorded to real estate, quite apart from any financial advantage that it may impart.

26. Independence

This refers to the freedom from worry, harassment and security that real estate ownership ensures and is probably no less important than the economic rewards. The desire for economic independence afforded by owning real estate is very deeply set within human nature.

27. Level of Security

The role of security is gaining more and more importance today. As a result of
rising crime, violence and terrorism, investors have become more security conscious. Investors must consider not only safeguarding the physical property but also the reputation of the property in the leasing market. No property can afford a reputation as an unsafe place to work or live in.

28. Investors' Willingness to bear Risks

Johnson (1978; 443) asserts that, an investor's emotional make-up and financial position dictates his ability to assume risks in an investment. In investments, there are various risks, for example; commodity price fluctuations, inflation etc. The investor in undertaking the investment must be willing to accept the risks involved.

29. Adequacy of Services and infrastructure

These include; water and electricity supply, waste disposal and sanitation, transportation and associated land uses, for example shops, schools and sporting facilities etc. Robin (1989; 187) states that the provision of infrastructure and related services is an essential pre-requisite to the land and property development process. Land development or investment often requires prior arrangements to be made for the provision of Supporting services before it can proceed. The construction that brings into operation an
industrial or commercial unit for example, may require upgrading of the road network, if the traffic generated by the units constructed is to be safely accommodated (Grover, 1989; 188). He further points out that if an investor undertakes the development of a residential estate, he will need to take into account an increase in the capacity of the sewage works, the laying out of open space, the provision of schools, shopping centres etc. Therefore, as Grover (1989; 188) put it, the adequacy of existing infrastructure and the ease with which it may be extended are necessary and highly persuasive factors in the release of land for development.

30. Quality of the Physical Environment

The environment may be defined as the aggregate of external circumstances that affect the existence and development of an area or social unit (Collison, 1984; 42). The gradual decline towards almost total environmental decay is a common phenomenon of many cities of the world. Congestion, an over crowded living environment, general deterioration and lack of basic amenities together with pollution is present in many countries and an investor will consider the environmental quality in undertaking his investment.
Respondents were asked to state the factors they considered in their decision to invest and also to rate them. To rate the importance of each factor, the horizontal numeric scale was used. The horizontal numeric scale is an advisable scale to use in judging items on a single dimension or continuum (Alreck & Settle, 1985; 146).

To facilitate the devising of the scale, a review of literature on the rating of research variables was carried out as well as interviews with randomly selected key participants in the real estate sector. The participants included: three commercial property owners, three valuers, three property managers, three architects and three quantity surveyors. On the basis of their views and the information obtained from the review of literature, a scale defining the two extreme positions was developed.

The scale has its extremes labeled as shown below:

Extremely unimportant  1 2 3 4 5  Extremely important

Using the scale, percentages and descriptive phrases were further developed for easier interpretation by the respondents as follows:
<table>
<thead>
<tr>
<th>Scale</th>
<th>Percentage</th>
<th>Descriptive Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>≤ 20%</td>
<td>Not significant</td>
</tr>
<tr>
<td>2</td>
<td>≤ 40%</td>
<td>Marginally significant</td>
</tr>
<tr>
<td>3</td>
<td>≤ 60%</td>
<td>Fairly significant</td>
</tr>
<tr>
<td>4</td>
<td>≤ 80%</td>
<td>Significant</td>
</tr>
<tr>
<td>5</td>
<td>≤ 100%</td>
<td>Very significant</td>
</tr>
</tbody>
</table>

This scale was shown to a different group of three commercial property owners, three valuers, three property managers, three architects and three quantity surveyors who were also randomly selected to corroborate the opinions of the first group. The general observation from the respondents was that the scale was adequate enough to capture the possible factors that influenced the decision to invest in commercial real estate.

Using the scale, the respondents' views of the importance of the factors were tapped and compared. The scale provides both absolute measures of importance and also relative measures (rankings) if responses among various factors are to be compared. The distance between the numbers is conceptualised to be equal and, therefore, the rating scale is an interval scale representing a continuum between the two extremes.
In devising a horizontal numeric scale, Talukhaba (1999) had consulted 2 Architects, 2 Quantity Surveyor and 2 Clerks of works who were randomly selected. The scale developed by these 6 participants in the construction industry was further corroborated by a further 6 participants thereby giving a total of 12 participants. It was therefore felt that the total of 30 participants in the real estate sector would come up with a scale that was adequate enough to enable the identification and rating of the factors that influence the decision to invest in commercial real estate.

5.6: Data Analysis

The data was analysed using the Statistical Package for Social Sciences – SPSS for windows Release 9.0. The basic assumption was that the variable score distribution in the sample reflected what would be expected from the population distribution. Hence the statistics calculated from the sample, such as the mean variable score, were estimates of the variable parameters in the population of commercial buildings.

Descriptive statistics were used to observe some properties of the sample and its strata. These are the mean, frequency, the standard deviation and the standard error of the estimate. These were generated by the SPSS version 9.0 of the computer programme. The mean was used for calculating the average score of the factors considered in the decision to invest and was
used to rank the factors in order of their importance. The frequency was useful in showing the rate at which the factors occurred. The standard deviation and the standard error of estimate were used in calculating the critical values.

5.6.1: Hypothesis Testing of the Factors using the Population Mean Score

Having identified and ranked the factors that influence the decision to invest in commercial real estate using the mean ratings, the next step was to isolate the significant factors. This was done using the population mean which provided a way of setting a decision point. That is, a point at which to accept or reject the null hypothesis. Since the reviewed literature showed that the decision to invest in commercial real estate is based on the thirty (30) factors considered in the study, at various places, times and circumstances, it was assumed that the rating of the importance of each of the factors would exhibit a normal probability distribution in the population of commercial buildings in the world. With the assumption that the population was normally distributed, the five possible scores on the decision scale had an equal chance of occurring and, therefore, the mean, mode and median were equal. The horizontal scale used in this study has a minimum value of 1 and a maximum value of 5. The median (3) in the horizontal numerical scale used in the study was, therefore, considered to be the population mean rating of importance for
each factor. This is the point indicating that the factor is fairly significant on the decision scale and forms the decision point (See section 5:5).

All the factors had two hypotheses. The null hypothesis (Ho) was that the factors were not significant in influencing the decision to invest in commercial real estate. The alternative hypothesis (Hₐ) was that the factors were significant. The rejection of the null hypothesis meant accepting the alternative hypothesis.

5.6.2: Hypothesis Testing of the Factors using the Critical Z-Values

The results from the data analysis on the significant factors using the population mean needed further analysis. This was done through the hypotheses testing of the identified significant factors using the critical Z-values. The exercise involved the use of the one-tail lower limit test to set the lower limit of the sample mean at which the factor could be classified as significant. This is because any score above the mean (3) was already significant.

Again, all the factors had two hypotheses. The null hypothesis (Ho) was that the factors were not significant in influencing the decision to invest in
commercial real estate. The alternative hypothesis ($H_A$) was that the factors were significant.

The decision rule was evaluated by establishing the probability of committing a Type 1 error, that is, concluding that a variable is significant when it is not. Harper (1994) argues that Type 1 error can be avoided by setting a lower confidence level at 95%. In this situation, committing Type 1 error was viewed to be less harmful than committing Type 11 error. Type 11 error is committed when it is concluded that a variable is not significant when it is. Owing to the fact that various factors are put into consideration in the decision to invest, it was felt more important to avoid committing Type 11 error. Harper (1994) argues further that Type 11 error can be avoided by setting a higher confidence level. The confidence level of 99% was, therefore, set. This means that any variable that scored a sample mean within three standard deviations from the asserted population mean at the lower tail of the distribution was regarded as significant. The upper tail limit was not necessary because a score above the critical value was already significant.

5.6.3: Analysis of Variance (ANOVA)

In the previous analysis, although the tests isolated the significant factors in the decision to invest, it was not apparent whether these factors were
influenced by different buildings’ characteristics. It was therefore necessary to subject the data to other tests in order to bring out this important fact.

The analysis of variance also referred to by the acronym (ANOVA) was found suitable for this exercise. When the independent variable is categorical (in this case type of ownership and the zoning) and the dependant variable is continuous (in this case the rating of importance), the appropriate technique to measure the relationship between the two is analysis of variance (Alreck & Settle, 1985; 311). The objective of the analysis is to determine whether the mean values of rating differ significantly among different categories of each grouped variable. The null hypothesis in the ANOVA is that, the factor occurrence was independent of differences in the buildings’ characteristics. That is, the mean ratings for each factor are the same for each group of the independent variables in question. For example, the effect of type of ownership on the rating of the expected income would have a null hypothesis specified as follows:

\[ H_0 = \mu_{\text{Private-individual}} = \mu_{\text{Private-company}} = \mu_{\text{Parastatal}} = \mu_{\text{Public}} = \mu_{\text{Others}} \]

5.6.4: Discriminant Analysis

The final step involved ascertaining the contribution of each of the significant factors in the decision to invest in commercial real estate. To facilitate this,
the researcher utilised discriminant analysis. When the independent variable is continuous and the dependant variable is categorical, the appropriate statistical method to measure the relationship is discriminant analysis (Alreck & Settle, 1985;320). The technical term for the procedure is “analysis of the linear, discriminant function”, or “discriminatory analysis” and it is sometimes simply called “discrimination” (Alreck & Settle, 1985; 320-322).

The objectives of discriminant analysis are to measure the degree and direction of influence the independent variables have on the dependant variable, and; to obtain an equation that would permit the researcher to predict the category of a future dependant variable when it is not known, based on the known value of the independent variables. Assuming that a linear relationship exists between the decision to invest and each of the independent variables \((x_1, x_2, \ldots, x_n)\), the discriminant equation takes the following form:

\[
D(x) = a + b_1 x_1 + b_2 x_2 + \ldots + b_n x_n
\]

where:

- \(D(x)\) = The sample discriminant function which helps in the classification
- \(a\) = Intercept or constant
- \(b_1, \ldots, b_n\) = Coefficients for each of the
The discriminant equation is based on the principle of linear relationships. The term 'a' represents the value of the dependant variable when the independent variables are in each case zero. The coefficients indicate the effect on the dependant variable by each respective independent variable when all other independent variables are held constant. However, in some discriminant analysis procedures, the constant "a" is not computed separately, but it is incorporated into the coefficients of the independent variables.

Discriminant analysis is similar in many respects to regression analysis. Both generate an equation that can be used to predict values of the dependant variable for new cases if the values of the independent variables are known. With regression analysis, the prediction is in terms of a numeric value for the dependant variable because the variable is continuous. With discriminant analysis, however, the value of the prediction is a category or group because the dependant variable is a categorical variable rather than a continuous, numeric one.
Discriminant analysis also provides the coefficient of the linear, a discriminant function somewhat similar to a regression equation as well as a "critical value". Using the sample means of the independent variables for each of the two groups, the critical value to be used for the classifications is computed. Then, to predict the group membership from the known values of the independent variables, the values are multiplied by the coefficients and then the constant is added. If the value resulting from this process is less than the "critical value", the case is predicted to fall in the first group; that is, the factor is less significant. If it is greater than the "critical value", the case is predicted to fall in the second group; that is, the factor is more significant.
CHAPTER SIX

DETERMINANTS OF INVESTMENT DECISIONS IN COMMERCIAL BUILDINGS

6.1: Introduction

This chapter forms the analysis of the data obtained from the 150 commercial buildings studied in the city of Nairobi as well as data obtained from professionals dealing with investment portfolios.

The first section of the chapter describes eight basic characteristics of the commercial buildings studied, namely:-

- The distribution of the sampled commercial buildings;
- Nature of property ownership/type of property ownership;
- Size of the buildings;
- Respondents' reason(s) for choice of the particular location;
- Source of the invested funds;
- Occupancy level in the buildings;
- Level of returns from the buildings; and
- Methods used in the viability appraisal of the investments.
In the second part of the chapter the factors that influence the decision to invest in commercial real estate are identified, ranked and the significant ones isolated. The discussion highlights the circumstances that could influence factor significance and the results of hypotheses testing using the mean score, population mean and the critical z-value ratings.

6.1.1: The Distribution of the Sampled Buildings

The city of Nairobi has a total of approximately 1,500 commercial buildings within its boundaries. This was established through a physical count of all the commercial buildings in each of the areas in the city zoned for commercial or mixed use development. Out of this number, 378 buildings met the set requirements. The requirements were that the chosen buildings ought to be:

- Purely commercial and not occupied for other purposes for example, residential or industrial uses;
- Not under construction or being renovated;
- Not of temporary construction;
- Not fully owner occupied; and
- Acquired or developed by the current owner(s) in the last fifteen (15) years.

Fifty percent of these buildings (189 buildings) were selected as the study sample. However, responses were only available from 150 buildings and the
distribution of these buildings in terms of their location (zones) is as shown in
Table 6.1:

Table 6.1: Distribution of the Sampled Commercial Buildings

<table>
<thead>
<tr>
<th>Zone</th>
<th>Total number of comm. buildings</th>
<th>Total number that met the set requirements</th>
<th>Number of sampled buildings</th>
<th>Number of responses</th>
<th>Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>638</td>
<td>90</td>
<td>45</td>
<td>39</td>
<td>26%</td>
</tr>
<tr>
<td>1B</td>
<td>84</td>
<td>18</td>
<td>9</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>2</td>
<td>201</td>
<td>44</td>
<td>22</td>
<td>18</td>
<td>12%</td>
</tr>
<tr>
<td>3</td>
<td>102</td>
<td>34</td>
<td>17</td>
<td>12</td>
<td>8%</td>
</tr>
<tr>
<td>4</td>
<td>54</td>
<td>24</td>
<td>12</td>
<td>10</td>
<td>6.7%</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>2.7%</td>
</tr>
<tr>
<td>7</td>
<td>51</td>
<td>18</td>
<td>9</td>
<td>7</td>
<td>4.7%</td>
</tr>
<tr>
<td>8</td>
<td>121</td>
<td>42</td>
<td>21</td>
<td>18</td>
<td>12%</td>
</tr>
<tr>
<td>10</td>
<td>109</td>
<td>48</td>
<td>24</td>
<td>17</td>
<td>11.3%</td>
</tr>
<tr>
<td>15</td>
<td>112</td>
<td>46</td>
<td>23</td>
<td>17</td>
<td>11.3%</td>
</tr>
<tr>
<td>Total</td>
<td>1500</td>
<td>378</td>
<td>189</td>
<td>150</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000

The Central Business District (CBD) which is in Zone 1A has the highest concentration of commercial buildings within the city of Nairobi with a total of 638 buildings. This concentration diminishes as one moves from the central part
of the city towards the outer rings. This observation applies to both the population as well as the sampled buildings.

The Muthaiga and Lavington areas (Zones 6 and 5 respectively) have the lowest concentration of commercial buildings. This may be explained by the fact that they are quiet, low density residential areas predominantly occupied by the affluent of the society with only a few enclaves being converted from residential to commercial use in line with the rezoning of the areas.

6.1.2: Type of Ownership of the Commercial Buildings

Out of the total number of commercial buildings studied, 89.4% are privately owned, with 56.7% belonging to individuals and 32.7% belonging to private companies as shown in Table 6.2.

Table 6.2: Type of Ownership of the Commercial Buildings

<table>
<thead>
<tr>
<th>Current Owner</th>
<th>Number of Buildings</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private (individual)</td>
<td>85</td>
<td>56.7%</td>
</tr>
<tr>
<td>Private (company)</td>
<td>49</td>
<td>32.7%</td>
</tr>
<tr>
<td>Parastatal</td>
<td>10</td>
<td>6.6%</td>
</tr>
<tr>
<td>Public</td>
<td>4</td>
<td>2.7%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000
Public and parastatal owned buildings constitute 9.3% of the sample. One may, therefore, rightfully conclude that this study is on privately owned commercial buildings within the city of Nairobi.

From the reviewed literature, it was observed that the nature of property ownership affects the decision to invest and it is on this premise that the ownership of the various properties had first to be established to enable the researcher determine the factor's effect (if any) on the decision to invest in commercial buildings.

6.1.3: **Size of the Buildings**

The buildings ranged in size from single-storey to multi-storey buildings. The plinth area was a preferred measure of the size of the buildings to the number of storeys as the storeys of a building might be misleading. For instance, it might be felt that a six storeyed building is twice as big as a three storeyed building yet this may not be the case. The three storeyed building might even be larger than the six storeyed one in terms of the actual floor area. The plinth area also gave an indication of the economic potential of a building in terms of the area that may be let.

The distribution of the buildings' sizes using their plinth area is as shown in Table 6.3.
Table 6.3: Size of the Buildings

<table>
<thead>
<tr>
<th>Plinth Area (sq. m.)</th>
<th>No. of Buildings</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 1 &lt; 500</td>
<td>11</td>
<td>7.3%</td>
</tr>
<tr>
<td>≥ 500 &lt; 1000</td>
<td>19</td>
<td>12.7%</td>
</tr>
<tr>
<td>≥ 1000 &lt; 1500</td>
<td>10</td>
<td>6.7%</td>
</tr>
<tr>
<td>≥ 1500 &lt; 2000</td>
<td>15</td>
<td>10%</td>
</tr>
<tr>
<td>≥ 2000 &lt; 2500</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>≥ 2500 &lt; 3000</td>
<td>33</td>
<td>22%</td>
</tr>
<tr>
<td>≥ 3000 &lt; 3500</td>
<td>24</td>
<td>16%</td>
</tr>
<tr>
<td>≥ 3500 &lt; 4000</td>
<td>5</td>
<td>3.3%</td>
</tr>
<tr>
<td>≥ 4000 &lt; 4500</td>
<td>4</td>
<td>2.7%</td>
</tr>
<tr>
<td>≥ 4500 &lt; 5000</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>≥ 5000</td>
<td>20</td>
<td>13.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000

Over 13.3% of the buildings had a plinth area of over 5,000 sq. m. with the majority of the buildings (38%) having an area of between 2,500 to 3,500 sq. m.

6.1.4: Respondents’ Reason(s) for Choice of the Particular Location

On the choice of the location of the commercial buildings, the respondents were requested to give the main three (3) reasons for their choice of the particular location. Table 6:4 gives a summary of all the reasons given by the respondents for the choice of a particular location.
Table 6.4: Reason(s) for Choice of the Particular Location

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number of Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Connected to the CBD by good roads</td>
<td>119</td>
<td>26.4%</td>
</tr>
<tr>
<td>2. Secure for business operations</td>
<td>101</td>
<td>22.4%</td>
</tr>
<tr>
<td>3. Well served by services; water, power, sewer etc.</td>
<td>73</td>
<td>16.2%</td>
</tr>
<tr>
<td>4. Near the CBD</td>
<td>60</td>
<td>13.3%</td>
</tr>
<tr>
<td>5. Favourable and flexible planning regulations</td>
<td>23</td>
<td>5.1%</td>
</tr>
<tr>
<td>6. Quiet locality</td>
<td>20</td>
<td>4.4%</td>
</tr>
<tr>
<td>7. Attractive land values in the locality</td>
<td>18</td>
<td>4%</td>
</tr>
<tr>
<td>8. Clean surroundings</td>
<td>13</td>
<td>2.9%</td>
</tr>
<tr>
<td>9. Lack of an alternative site</td>
<td>12</td>
<td>2.7%</td>
</tr>
<tr>
<td>10. Locality has a long history of high reputation and prestige</td>
<td>7</td>
<td>1.7%</td>
</tr>
<tr>
<td>11. Locality has natural beauty from the surrounding vegetation, physical features etc.</td>
<td>4</td>
<td>0.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>450</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000

From the responses, the connection of the area to the Central Business District (CBD) by good roads was given as the main reason for choice of the particular location. From the survey, 26.4% of the respondents based their choice of the location on this factor. This implies that the quality of the road network connecting the city centre and its various districts/estates is the main
determinant factor influencing the "betterness" of one locality in comparison to another.

This may be explained by the fact that, the CBD enjoys comparative better provision of services and infrastructure. It also benefits from its centrality in location and may in effect depict a clear dominance over the city. It therefore, forms a major attraction with ensuing high land values, high development densities, congestion, increased inaccessibility and the general overload of the services and infrastructure. This may lead to the desire to re-locate to less constrained locations, but because of the dominance of the CBD, there is the need to be close to it either physically or in terms of the time and ease with which it takes to get there.

The other prevalent reasons for choice of a particular location were the need for a secure location for business operations and a locality that is well served by essential services. Indeed access to and from the CBD, the security of an area and the availability of services and infrastructure increases the anticipation of higher profits to the owner. Some locations are very attractive for commercial developments simply because of the combined economies of scale, for example in the CBD.

However, due to the scarcity of such favourable sites as well as their high
prices, some aggressive developers have turned once docile areas into thriving commercial areas. These areas include; the Nairobi Upper Hill area and areas along Waiyaki Way and Ngong Road. Despite some obvious physical weaknesses in these sites such as the poor terrain and the distance from the centre of commercial activity, these areas have become increasingly popular.

6.1.5 **Source of Invested Funds**

The main source of funds invested in the commercial buildings, either for development or purchase was borrowed funds as shown in Table 6.5.

**Table 6.5: Source of Invested Funds**

<table>
<thead>
<tr>
<th>Source</th>
<th>Number of buildings</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-sponsored</td>
<td>33</td>
<td>22%</td>
</tr>
<tr>
<td>Borrowed</td>
<td>105</td>
<td>70%</td>
</tr>
<tr>
<td>Building inherited</td>
<td>10</td>
<td>6.7%</td>
</tr>
<tr>
<td>Building received as a gift</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>150</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Complied by the author from collected data, 2000
From the survey, 70% of the respondents had borrowed the required funds. 22% were able to raise all the required funds on their own and only 8% either inherited the buildings or received them as gifts.

The government liberalized interest rates in the early 1990s. Interest rates are now determined to a large extent by the interactions of demand and supply, lender perception of the relative risks associated with borrowed funds and government policies and regulations. The high interest rates charged ranging from 26% to 30% render borrowed funds very expensive. The position is made worse by the pre-mortgage costs that include; valuation fees, legal fees, transfer costs etc. that may at times account to as much as 30% of the borrowed sum. With the cost of the studied buildings ranging from Kshs.12,000,000.00 to Kshs.230,000,000.00, the invested sums are colossal and in addition to this, in the majority of cases, competitive interest rates are charged.

6.1.6: Occupancy Level in the Buildings

The occupancy level in the buildings is as shown in Table 6.6. In the majority of the buildings (61.3%), the occupancy rate was in the category ≤ 80%, implying that most of the buildings had an occupancy rate of between 60% to 80%. Only 30 out of the 150 buildings studied or 20% of the buildings had an occupancy rate of over 80%. The most unfortunate scenario is that out of the 150 buildings
studied, only 18 buildings had a 100% occupancy level. 3 buildings had an occupancy level of ≤ 20%.

Table 6.6: Occupancy Level in the Buildings

<table>
<thead>
<tr>
<th>Occupancy rate</th>
<th>Number of buildings</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 20%</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>≤ 40%</td>
<td>10</td>
<td>6.7%</td>
</tr>
<tr>
<td>≤ 60%</td>
<td>15</td>
<td>10%</td>
</tr>
<tr>
<td>≤ 80%</td>
<td>92</td>
<td>61.3%</td>
</tr>
<tr>
<td>≤ 100%</td>
<td>30</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000

The low occupancy rate in the commercial buildings in the city of Nairobi may be attributed to amongst other things; the performance of the national economy. Commercial buildings by their nature provide space to tenants whose survival and ability to meet their financial obligations under the lease depend on the performance of the national economy. As pointed out earlier in Section 4.2 of the study, the Kenyan economic growth has been quite subdued since the mid 1970s registering a growth rate of 1.8% and 1.4% in 1998 and 1999 respectively. This was followed by a drop of -0.2% in 2000 (Economic Survey; 2001). Another cause of the high vacancy rate
may be the oversupply of commercial space as pointed out by Syagga and Aligula (1999). With a projected supply of 2,152,000 sq. ft. of office space against an annual take-up of only 645,600 sq. ft., vacancies are bound to be experienced within the city.

This low occupancy coupled with the high cost of borrowing the invested funds, clearly implies that it is least probable that the investors will either meet their obligations in terms of servicing any outstanding mortgages or maximize their returns. One of the conditions necessary for a commercial real estate owner to maximize returns from the property is full occupancy. Others include prompt and full rent collection, minimal irrecoverable costs amongst others.

Given the above position, it is therefore not surprising that the recorded returns average 4.2% as shown in Table 6.7.

6.1.7: Level of Returns from the Buildings

The level of returns from the buildings, are as shown in Table 6.7.

The returns observed in the buildings range from -4.3% to 7.8%. The majority of the buildings (31 buildings or 20.7% of the buildings) were in the category ≤ 4%. 13 buildings or 8.7% of the buildings, recorded returns in the category ≤ 8%. 8 buildings (5.3%) recorded a negative return, while
a total of 54 buildings (36%) fell in the category ≤ 3%. All in all, the studied buildings recorded an average return of approximately 4.2%.

Table 6.7: Level of Returns from the Buildings

<table>
<thead>
<tr>
<th>Return</th>
<th>Number of Buildings</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 0%</td>
<td>8</td>
<td>5.3%</td>
</tr>
<tr>
<td>≤ 1%</td>
<td>12</td>
<td>8%</td>
</tr>
<tr>
<td>≤ 2%</td>
<td>18</td>
<td>12%</td>
</tr>
<tr>
<td>≤ 3%</td>
<td>16</td>
<td>10.7%</td>
</tr>
<tr>
<td>≤ 4%</td>
<td>31</td>
<td>20.7%</td>
</tr>
<tr>
<td>≤ 5%</td>
<td>22</td>
<td>14.7%</td>
</tr>
<tr>
<td>≤ 6%</td>
<td>19</td>
<td>12.6%</td>
</tr>
<tr>
<td>≤ 7%</td>
<td>11</td>
<td>7.3%</td>
</tr>
<tr>
<td>≤ 8%</td>
<td>13</td>
<td>8.7%</td>
</tr>
<tr>
<td>≤ 9%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>≤ 10%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Complied by the author from the collected data, 2000

Coupled with the problem of low returns is the disparity between the expected and actual incomes. In 95% of the studied buildings, negative
disparities were observed. This is whereby, the actual incomes fell short of the expected incomes. None of the buildings recorded a higher actual income than that expected.

6.1.8: Methods used in the Appraisal of the Investments

On the appraisal of the investments, the payback method had been used in most of the buildings. It was applied in 26% of the buildings as shown in Table 6.8.

Table 6.8: Methods of Investment Appraisal used in the Buildings

<table>
<thead>
<tr>
<th>Method of Appraisal</th>
<th>Instances where the method was used</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Payback Method</td>
<td>39</td>
<td>26%</td>
</tr>
<tr>
<td>2. Simple Rate of Return</td>
<td>28</td>
<td>18.7%</td>
</tr>
<tr>
<td>3. Internal Rate of Return (IRR)</td>
<td>16</td>
<td>10.7%</td>
</tr>
<tr>
<td>4. Net Present Value (NPV)</td>
<td>12</td>
<td>8%</td>
</tr>
<tr>
<td>5. Break-Even Analysis</td>
<td>7</td>
<td>4.6%</td>
</tr>
<tr>
<td>6. Cost-Benefit Analysis</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>7. Sensitivity Analysis</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>8. Probability Analysis</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>9. Monte Carlo Simulation</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>10. None</td>
<td>45</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000
The simple rate of return method that came second was found to have been used in 18.7% cases. In some cases, more than one appraisal method was used as shown in Table 6.9.

Table 6.9: Summary of the Appraisal Methods Used

<table>
<thead>
<tr>
<th>Number of methods used</th>
<th>Instances where used</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45</td>
<td>30%</td>
</tr>
<tr>
<td>1</td>
<td>64</td>
<td>42.7%</td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>19.3%</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>8%</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000

In the majority of cases (42.7%), only one method was used. Three methods were used only in 8% cases and there was no instance where four or more methods were used.

The professionals dealing with investment portfolios were requested to indicate the main method they used in the appraisal of commercial real estate. The results are as shown in Table 6.10.
Table 6.10: Methods of Investment Appraisal used by the Professionals

<table>
<thead>
<tr>
<th>Method of Appraisal</th>
<th>Number of Professionals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Payback Method</td>
<td>33</td>
<td>33%</td>
</tr>
<tr>
<td>2. Simple Rate of Return</td>
<td>26</td>
<td>26%</td>
</tr>
<tr>
<td>3. Net Present Value (NPV)</td>
<td>19</td>
<td>19%</td>
</tr>
<tr>
<td>4. Internal Rate of Return (IRR)</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>5. Break-Even Analysis</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>6. Cost-Benefit Analysis</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>7. Sensitivity Analysis</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>8. Probability Analysis</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>9. Monte Carlo Simulation</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000

From the interviews with the professionals, again the payback method came out as the most commonly used with a rating of 33%. The simple rate of return method followed with 26%. The reasons given by the professionals for the preference of the two methods, the payback method and the simple rate of return method, were that, they are:

- Easy to calculate;
- Quick to calculate, and;
- Easy to understand.
This is in spite of the professionals' vast experience with the interviews revealing that most of these professionals (59%) had on average twelve (12) years professional experience. None of the respondents gave Sensitivity Analysis, Probability Analysis or Monte Carlo Simulation as the main method employed yet from the interviews, it was observed that some training had been received in these methods as shown in Table 6.11.

Table 6.11: Methods of Investment Appraisal the Professionals were trained in

<table>
<thead>
<tr>
<th>Number of methods trained in</th>
<th>Number of professionals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
<td>36%</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>27%</td>
</tr>
<tr>
<td>7</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from collected data, 2000
A relatively high percentage of the professionals (80%) had received training in at least five appraisal techniques again as shown in Table 6:11, a clear indication that they were not exploiting their skills fully.

These observations, therefore, indicate that the payback method is the most popular method of investment appraisal in commercial properties in Kenya, followed by the simple rate of return method. A more unfortunate scenario is that in 30% of the buildings, no appraisal had been carried out at all.

However, even with their stated advantages, the payback and simple rate of return methods, have several shortcomings and have been recommended as supplementary tools/preliminary means in the decision-making process. The information output from the two methods and; which is used in making investment decisions, is limited. For instance, there is a fundamental drawback of failing to allow for the time value of money. The essence of discounting in that “a bird in hand is worth two in the bush” is disregarded. The methods do not provide suitable comparisons for two different projects. There is also the additional problem as to the definition of the start of the payback period or what constitutes the total investment cost. When a technique designed as a decision-making aid is open to ambiguity in interpretation, as is the case with the two methods, it is likely to be manipulated so as to lend backing for the desired decision rather than the right decision.
6.2: Factors that influence the Decision to Invest in Commercial Buildings

From the reviewed literature, the factors normally considered by commercial real estate investors prior to committing their capital in these investments were conceptualized as thirty (30) factors (See Section 5.4.1). The respondents were then requested to rate the importance of the factors on a 5 point horizontal numeric scale (1-5). The means of the ratings were computed for each factor in order to rank the factors according to their importance as shown in Table 6.12.

From the analysis, expected income has the highest mean rating (4.309) implying that it is the most important factor that investors consider as they make their decision as to whether to invest in commercial real estate or not. That is, the higher the level of the expected income, the more one is compelled to invest in commercial real estate. That is how much one will receive from the property either on a monthly or on an annual basis. While the factor has the highest rating, in the earlier analysis, it was established that in 95% of the buildings studied, negative disparities were observed between the expected and actual incomes. It was only in 5% of the buildings where the expected income was realized. Therefore, even with the top ranking of the factor, it appears that the investors' major concern was far from being addressed.
### Table 6.12: Mean Rating of the Factors Considered in the Decision to Invest in Commercial Buildings

<table>
<thead>
<tr>
<th>Factor Considered</th>
<th>Mean Rating of importance (on a 5 point scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expected Income</td>
<td>4.309</td>
</tr>
<tr>
<td>2. Payback Period</td>
<td>3.557</td>
</tr>
<tr>
<td>3. Cost of Finance</td>
<td>3.503</td>
</tr>
<tr>
<td>4. Demand for Commercial Space</td>
<td>3.390</td>
</tr>
<tr>
<td>5. Expected Rate of Return</td>
<td>3.383</td>
</tr>
<tr>
<td>6. Size of Land</td>
<td>3.374</td>
</tr>
<tr>
<td>7. Cost of Land</td>
<td>3.286</td>
</tr>
<tr>
<td>8. Cost of Construction</td>
<td>3.187</td>
</tr>
<tr>
<td>9. Psychological Satisfaction expected from the Investment</td>
<td>3.177</td>
</tr>
<tr>
<td>10. Adequacy of Services and Infrastructure</td>
<td>3.160</td>
</tr>
<tr>
<td>11. Level of Security</td>
<td>3.140</td>
</tr>
<tr>
<td>12. Distance from the City Centre</td>
<td>3.093</td>
</tr>
<tr>
<td>13. Economic Climate</td>
<td>3.075</td>
</tr>
<tr>
<td>15. Security of Capital</td>
<td>2.930</td>
</tr>
<tr>
<td>16. Supply of Commercial Space</td>
<td>2.823</td>
</tr>
<tr>
<td>17. Location of Site</td>
<td>2.720</td>
</tr>
<tr>
<td>18. Size of the Building</td>
<td>2.677</td>
</tr>
<tr>
<td>19. Independence (freedom from worry, harassment etc.) expected from the Investment</td>
<td>2.627</td>
</tr>
<tr>
<td>20. Marketability and Liquidity of Capital</td>
<td>2.587</td>
</tr>
<tr>
<td>21. Political Climate</td>
<td>2.493</td>
</tr>
<tr>
<td>22. Cost of Managing the Property</td>
<td>2.480</td>
</tr>
<tr>
<td>23. Level of Inflation</td>
<td>2.380</td>
</tr>
<tr>
<td>24. Nature of Property Ownership</td>
<td>2.366</td>
</tr>
<tr>
<td>25. Level of Taxation in the Property Market</td>
<td>2.280</td>
</tr>
<tr>
<td>26. Likelihood of the Investment enhancing the Investor’s image in the Community</td>
<td>2.197</td>
</tr>
<tr>
<td>27. Legislative Controls</td>
<td>2.160</td>
</tr>
<tr>
<td>28. Investor’s willingness to bear Risks</td>
<td>2.123</td>
</tr>
<tr>
<td>29. Quality of the Physical Environment</td>
<td>2.107</td>
</tr>
<tr>
<td>30. Opportunity Cost of Capital</td>
<td>1.067</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001
Literature and everyday experiences are, full of examples wherein large sums of money are committed in massive projects that eventually result in yielding less income than what was expected at inception or no income at all. This takes place when the investor concentrates only on the expected income ignoring the other factors that influence the income receiveable from the investment and in essence failing to pay attention to the rate of return. By undertaking investments in commercial buildings, it is rightfully perceived that the investors are interested in long-term wealth. This being the case, their focus should be on the returns. Not just the returns on the income, but the total return. The total return is made up of two components; the return on income and the growth in capital value. On top of the rate of return, the regularity as well as the duration of the income needs to be taken into account. Where the income is irregular or its flow will be for a short duration, the investor will need to be compensated for taking on the extra risk. This is in agreement with Keyne’s theory that when an investor buys an investment or a capital asset, he purchases the right to a series of prospective returns, which he expects to obtain from selling its output (space) after deducting the running expenses of obtaining that output during the life of an asset. However, this is not the case as from the analysis, the expected rate of return is ranked 5th with a rating of 3.383. Worse still, the security and regularity of income is ranked even lower at the 14th place with a rating of 3.020.
The payback period which to a large extent is based on the expected income was ranked 2\textsuperscript{nd} with a rating of 3.557. Investors prefer to recover capital within the shortest possible time. Therefore, other things being held constant, the higher the expected income and the shorter the payback period, the more favorable the investment. This may explain the close ranking of these two factors.

The cost of finance which was ranked 3\textsuperscript{rd} also highly influenced the decision to invest in commercial real estate. From earlier analysis, it was observed that the major source of the invested funds was borrowed funds. 70\% of the respondents had used borrowed funds to invest in the buildings. With the high cost of borrowing, that is, with the interest rates going as high as 30\%, the investors are bound to be concerned about the cost of finance. The cost of finance together with other costs incurred in the running of the building will influence the available income as well as the payback period.

Demand for commercial space which was ranked 4\textsuperscript{th} also influenced the decision to invest. This is because, the higher the demand for space, the higher will be the expected income as well as the expected rate of return. The supply and demand forces determine the market price which when mathematically transformed will yield the market rate of return for the property. Hence the demand and supply mechanism shifts and movements up and down are of great importance. Although the supply of
commercial space was ranked slightly lower than the demand for commercial space, they both ranked relatively high in influencing the decision to invest. This may be explained by the Keynesian aggregate income function. That is, an increased level of investment yields increased demand for all kinds of goods and services which in turn yields an increased demand for space wherein to locate the firms that would manufacture and monitor the increased quantities of goods and services.

Land has been judged in terms of the size, cost, adequacy of services and infrastructural facilities, location of the site and distance from the city centre. These factors were found to be relatively important with their means ranging from between 3.374 to 2.720. The size of the land had the highest mean (3.374). This could be attributed to the fact that the size of the building is highly dependant on the size of the land. The bigger the size of the land, the bigger the building one will be able to put up on it, other factors being held constant. Land size also determines the cost of the project. The other factors, namely; adequacy of services and infrastructure, location of site and distance from the city centre will influence the demand for the space provided, the level of rents receivable and in essence the expected income from the building.

The security of capital as well as the security and regularity of income were also ranked highly. The building owners were interested in protecting the original investment as well as the purchasing power of the capital that
would ensure the continuity of the investment. The stability of the income allows the investor to plan his total investment programme more accurately and logically.

On seeking the views of the professionals on the factors they considered to influence the commercial real estate investors in their decision to invest in these properties, the ranking differed, but mainly in the first 15 factors with minimal changes in the other 15. The ranking of the first 15 factors was as follows:

1. Payback Period
2. Cost of Finance
3. Cost of Land
4. Cost of Construction
5. Expected Income
6. Expected Rate of Return
7. Demand for Commercial Space
8. Economic Climate
9. Distance from the City Centre
10. Adequacy of Services and Infrastructure
11. Level of Security
12. Psychological Satisfaction expected from the Investment
13. Location of Site
14. Political Climate and
15. Likelihood of the Investment enhancing the Investor's image in the Community

The professionals were of the opinion that while the expected rate of return ought to be the main factor influencing the decision to invest in commercial real estate, this was not the case. They felt that the payback period was the main factor influencing the decision to invest in commercial real estate. Probably this was an unconscious effort to defend their extensive use of the payback period method in the investment appraisals, but there was the general indication that the "speed of return" of the invested funds was the major concern.

The cost of finance was ranked second and understandably so given the high cost of finance and the extent of borrowing involved in these properties. In the third position was the cost of land. Again, in commercial real estate investments, the one major expensive item is land with prices for commercial land being as high as 70 to 100 million per acre in the prime areas.

The psychological factors, namely; psychological satisfaction expected from the investment and the likelihood of the investment enhancing the investor's image in the community, were also ranked highly at the 12th and 15th positions respectively. This may be based on the fact that for long periods in history, a person's position is determined by the extent of his
land/property ownership. In many societies, this happens to be the case even today although there are many other ways in which a person may hold wealth. This goes to confirm that real estate remains one of the means by which investors claim some sense of security both financial and psychic.

However, although the expected income is ranked by the commercial real estate investors as the most important factor in the investment decision, none of the other 28 factors (2 to 29) can be considered unimportant. They scored a ranking above 2.00, which is statistically greater than the lower extreme of the horizontal numeric scale 1, which implies insignificance. Based on this observation and having identified the factors that influence the decision to invest in commercial real estate, the next step was to isolate the significant factors as objectively as possible. This was done using the population mean score and the critical z-value tests. These two tests are carried out in the following two sections (6:2:1 and 6:2:2).

6.2.1: Hypotheses Testing of the Factors using the Population Mean Score

Having ranked the factors that influence the decision to invest in commercial buildings using the mean score ratings, it became necessary to set the decision point. This is a point at which to reject or fail to reject the null hypothesis based on the population mean score. Since the
reviewed literature shows that the decision to invest in commercial real estate is based on each of the thirty (30) factors considered in the study, at various places, times and circumstances, it was assumed that the rating of the importance of each of the factors would exhibit a normal probability distribution in the population of commercial buildings in the world. With the assumption that the population was normally distributed, the five possible scores on the scale had an equal chance of occurring and therefore, the mean, mode and median were equal. The horizontal scale used in this study has a minimum value of 1 and a maximum value of 5. The median (3.0) in the horizontal numerical scale used in the study was, therefore, considered to be the population mean rating of importance for each factor. This is a point indicating that the factor is fairly significant on the horizontal decision scale and forms the decision point (See Section 5:4).

All the variables had two hypotheses. The null hypothesis \((H_0)\) was that the factor was not significant in influencing the decision to invest in commercial real estate and the alternative hypothesis \((H_A)\) was that the factor was significant. A one-tail test of the null hypothesis \((H_0: \mu < 3.0)\) for each factor shows that fourteen (14) of the factors have their means greater than the population mean (3.0), as shown in Table 6:12. The factors are: expected income, payback period, cost of finance, demand for commercial space, expected rate of return, size of land, cost of land, cost of construction, psychological satisfaction expected from the investment,
adequacy of services and infrastructure, level of security, distance from the city centre, economic climate and security and regularity of income.

From Table 6:12, ten (10) factors starting with political climate to the opportunity cost of capital have their mean ratings significantly less than 3.0. The mean ratings of the other six (6) factors starting with the security of capital to the marketability and liquidity of capital are statistically equal to the population mean (3.0).

On the basis of this analysis, the 30 factors may be categorised into three major groups:

1. **Factors of major importance**

These are factors whose mean ratings are greater than the population mean (3.0), namely: expected income, payback period, cost of finance, demand for commercial space, expected rate of return, size of land, cost of land, cost of construction, psychological satisfaction expected from the investment, adequacy of services and infrastructure, level of security, distance from the city centre, economic climate and security and regularity of income.
2. Factors of average importance

These are factors whose mean ratings are statistically equal to the population mean (3.0), namely: security of capital, supply of commercial space, location of site, size of the building, independence (freedom from worry, harassment etc.) expected from the investment and marketability and liquidity of capital.

3. Factors of minor importance

These are factors whose mean ratings are statistically less than the population mean (3.0), namely: political climate, cost of managing the property, level of inflation, nature of property ownership, level of taxation in the property market, likelihood of the investment enhancing the investor's image in the community, legislative controls, investor's willingness to bear risks, quality of the physical environment and opportunity cost of capital.

These observations suggest that a person intending to invest in commercial real estate must evaluate, however intuitively, at least all the 20 factors in groups 1 and 2.

To conclusively isolate the significant factors, the critical z-test was carried out as shown in Section 6.2.2.
Hypotheses Testing of the Factors using the Critical Z-Values

The results from the data analysis on the significant factors using the population mean needed further analysis to conclusively isolate the significant factors. This was done through the hypotheses testing of the identified twenty (20) significant factors using the critical Z-values. These are the factors of major and average importance. The exercise involved the use of the one-tail lower limit test to set the lower limit of the sample mean at which the factor could be classified as significant. This is because any score above the mean (3.0) was already significant.

The decision rule was evaluated by establishing the probability of committing type 1 error, that is, concluding that a factor is significant when it is not. Harper (1994) argues that type 1 error can be avoided by setting a lower confidence level at 95%. In this situation, committing type 1 error was viewed to be less harmful than committing type 11 error. Type 11 error is committed when it is concluded that a factor is not significant when it is. Owing to the fact that various factors are put into consideration in the decision to invest, it was felt more important to avoid committing type 11 error. Harper (1994) argues further that type 11 error can be avoided by setting a higher confidence level. The confidence level was, therefore, set at 99%. The results are as shown in Table 6:13.
Table 6.13: A Comparison of the Z-Values with the Mean Scores

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean Ranking of the factors</th>
<th>z-Values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expected Income</td>
<td>4.309</td>
<td>23.170</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>2. Payback Period</td>
<td>3.557</td>
<td>9.953</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>3. Cost of Finance</td>
<td>3.503</td>
<td>9.541</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>4. Demand for Commercial Space</td>
<td>3.390</td>
<td>7.708</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>5. Expected Rate of Return</td>
<td>3.383</td>
<td>7.843</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>6. Size of Land</td>
<td>3.374</td>
<td>7.759</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>7. Cost of Land</td>
<td>3.286</td>
<td>7.229</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>8. Cost of Construction</td>
<td>3.187</td>
<td>6.148</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>9. Psychological Satisfaction expected from the Investment</td>
<td>3.177</td>
<td>5.805</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>10. Adequacy of Services and Infrastructure</td>
<td>3.160</td>
<td>5.532</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>11. Level of Security</td>
<td>3.140</td>
<td>6.150</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>12. Distance from the City Centre</td>
<td>3.093</td>
<td>4.778</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>13. Economic Climate</td>
<td>3.075</td>
<td>5.003</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>14. Security and Regularity of Income</td>
<td>3.020</td>
<td>4.573</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>15. Security of Capital</td>
<td>2.930</td>
<td>3.686</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>16. Supply of Commercial Space</td>
<td>2.823</td>
<td>2.806</td>
<td>Reject $H_0$</td>
</tr>
<tr>
<td>17. Location of Site</td>
<td>2.720</td>
<td>1.911</td>
<td>Fail to Reject $H_0$</td>
</tr>
<tr>
<td>18. Size of the Building</td>
<td>2.677</td>
<td>1.146</td>
<td>Fail to Reject $H_0$</td>
</tr>
<tr>
<td>19. Independence (freedom from worry, harassment etc.) expected from the Investment</td>
<td>2.627</td>
<td>1.132</td>
<td>Fail to Reject $H_0$</td>
</tr>
<tr>
<td>20. Marketability and Liquidity of Capital</td>
<td>2.587</td>
<td>0.753</td>
<td>Fail to Reject $H_0$</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001
From the analysis, the z-values for: expected income, payback period, cost of finance, demand for commercial space, expected rate of return, size of land, cost of land, cost of construction, psychological satisfaction expected from the investment, adequacy of services and infrastructure, level of security, distance from the city centre, economic climate, security and regularity of income, security of capital and supply of commercial space are greater than the critical z-value in the sample which is 2.33. Consequently, the null hypotheses that these factors do not influence the decision to invest in commercial real estate are rejected. This confirms that these factors are significant in the decision to invest in commercial real estate.

The null hypotheses for: location of site, size of the building, independence (freedom from worry, harassment etc.) expected from the investment and marketability and liquidity of capital are not rejected, meaning that these factors are not significant in influencing the decision to invest.

6.3: Influence of the Buildings' Characteristics on the Rating of the Significant Factors

In the previous section (6.2), the factors that influence the decision to invest in commercial real estate in Kenya were identified and using the mean rating of the factors, the population mean score and the critical z-test, sixteen (16) factors were identified as the significant factors
influencing the decision to invest in commercial real estate. These sixteen factors are: expected income, payback period, cost of finance, demand for commercial space, expected rate of return, size of land, cost of land, cost of construction, psychological satisfaction expected from the investment, adequacy of services and infrastructure, level of security, distance from the city centre, economic climate, security and regularity of income, security of capital and supply of commercial space.

However, although the tests isolated the significant factors, it was no apparent whether the significant factors were influenced by the different buildings' characteristics. The characteristics considered are: the age of the investor at the time they undertook the investment, the amount of wealth held by the investor prior to investing in the commercial building, type of ownership and the different zones in which these buildings were to be found in within the city of Nairobi. Unfortunately, the investors were unwilling to provide information relating to their age as well as the wealth they held at the time they undertook the investment fearing in most cases that the information was too confidential while in some instances they were just uncooperative. Due to the above reasons, it was only possible to establish the relationship between the significant factors and the remaining two characteristics, namely; type of ownership and the zonal layout in the city of Nairobi.

The owners were differentiated as private (individual), private (company),
parastatal, public and others. There is a marked difference in the internal organizational structure of these five strata in terms of styles of management and the procedures involved in undertaking any investment. Elements of ownership characteristics which affect their approach in real estate investments, are for instance, the procedures used for funding, appraisals, identification and implementation. For instance, the public owner is known to be plagued with bureaucracy that hinders faster and effective implementation in decision making. There is always need for many signatories for approvals to be made by the public organizations, which is partly due to the need to satisfy public accountability. Public investments are subjected to Parliamentary/Public scrutiny and auditing by both the Public Accounts Committee (PAC) and the Public Investments Committee (PIC). Due to these requirements, public investments usually utilise competitive methods in undertaking any investments, but the monetary element may in many cases be overridden by the social need.

Private owners on the other hand are highly motivated by profits as they are business oriented. They are likely to be more efficient in their dealings. They have less bureaucracy because of the narrow spans of management control in their organizational structures which improves on their decision making process. The staff are highly motivated because of better pay and better working conditions. Still under the private owners' category, differences are expected between individual owners and corporate or institutional owners. In the case of an individual owner, it is usually a one-
person decision while in the case of a company, several members’ input is required before a decision is made be they board members or shareholders.

Also, the needs of an individual investor will be substantially different from those of a corporate or institutional investor. The individual investor's needs are partly financial and partly psychological. Usually, individuals invest to provide for retirement, educate their children etc. simply hoping to increase their wealth through investing. The psychological approach of individuals to money matters particularly bearing risks varies greatly. Some have the attitude that since they only hazard a small amount of money when investing in risky ventures, the risk aspects of investments are insignificant. Other individuals would regard the loss of their small investment as a major disaster (Hargitay, 1993; 16). The institutional investor usually invests to make adequate provisions to cover his future liabilities. These liabilities must be met as and when they arise. Since it is usually impossible to produce returns that would be equal to and coincident with liabilities, the institutional investor needs returns that accommodate a surplus over the expected future liabilities. The corporate investor's needs are different again. The corporate investor is particularly concerned about the efficient management of current assets particularly cash (Hargitay, 1993; 17). A healthy cash flow is a pre-requisite of success in business. As the opportunity cost of holding cash rises with the rising of the rates of return on securities, it is prudent to invest any surplus cash in
other investments. Therefore, the differences in these categories are likely to manifest themselves in the occurrence of the significant factors.

The zonal layout of the buildings was also considered. The zones influence the cost of land, services and infrastructure, distance from the city centre, level of security and the quality of the environment. Property owners in the study area believe that there are some areas within the city which are more desirable, popular and exclusively famed because of many factors. These factors include the history of the area, the unique locality as far as the CBD is concerned, the facilities and services available and the generally clean surroundings. All these factors combine to make an area or locality more favorable than another. For instance, in looking at the cost of land, Locke (1987; 538) considered the zone factor and found out that there is a difference in estimated values between properties in a sub-locality and those within an entire region.

The differences in the discussed characteristics could be responsible for the occurrence of some of the significant factors or could influence differences that affect some of the significant factors. Hence the question; are the influences of the buildings' characteristics (type of ownership and zoning) on the rating of the factors that influence the decision to invest in commercial buildings statistically significant? The analysis of variance also referred to by the acronym (ANOVA) was found suitable for this exercise. When the independent variable is categorical (in this case type
of ownership and zoning) and the dependant variable is continuous (in this case the rating of importance), the appropriate technique to measure the relationship between the two is analysis of variance (Alreck & Settle, 1985; 311). The objective of the analysis is to determine whether the mean values of rating differ significantly among different categories of each grouped variable.

The null hypothesis in the ANOVA is that, the factor occurrence was independent of differences in the buildings' characteristics. That is, the mean ratings for each factor are the same for each group of the independent variables in question. For example, the effect of type of ownership on the rating of the expected income would have a null hypothesis specified as follows:

\[ H_0 : \mu_{Private\text{-}individual} = \mu_{Private\text{-}company} = \mu_{Parastatal} = \mu_{Public} = \mu_{Others} \]

Implying that, there is no difference between the ratings for the various ownership categories. The alternative hypothesis was:

\[ H_A : \mu_{Private\text{-}individual} \neq \mu_{Private\text{-}company} \neq \mu_{Parastatal} \neq \mu_{Public} \neq \mu_{Others} \]

Implying that, there is a difference between the ratings for the various ownership categories. The results of the ANOVA procedure are as shown in Table 6.14.
### Table 6.14: Influence of the Buildings’ characteristics on the Rating of the Significant Factors

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>TYPE OF OWNERSHIP</th>
<th>ZONING</th>
<th></th>
<th>TYPE OF OWNERSHIP</th>
<th>ZONING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F Statistic</td>
<td>P-Value</td>
<td>Decision</td>
<td>F Statistic</td>
<td>P-Value</td>
<td>Decision</td>
</tr>
<tr>
<td>Expected income</td>
<td>0.458</td>
<td>0.766</td>
<td>Fail to Reject H0</td>
<td>1.529</td>
<td>0.135</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Payback period</td>
<td>2.250</td>
<td>0.007</td>
<td>Fail to Reject H0</td>
<td>1.427</td>
<td>0.174</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Cost of finance</td>
<td>0.393</td>
<td>0.813</td>
<td>Fail to Reject H0</td>
<td>1.472</td>
<td>0.156</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Demand for commercial space</td>
<td>2.717</td>
<td>0.032</td>
<td>Fail to Reject H0</td>
<td>3.785</td>
<td>0.000</td>
<td>Reject H0</td>
</tr>
<tr>
<td>Expected rate of return</td>
<td>3.318</td>
<td>0.012</td>
<td>Fail to Reject H0</td>
<td>2.440</td>
<td>0.010</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Size of the land</td>
<td>1.552</td>
<td>0.190</td>
<td>Fail to Reject H0</td>
<td>1.853</td>
<td>0.053</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Cost of the land</td>
<td>1.170</td>
<td>0.326</td>
<td>Fail to Reject H0</td>
<td>0.454</td>
<td>0.917</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Cost of construction</td>
<td>2.197</td>
<td>0.072</td>
<td>Fail to Reject H0</td>
<td>1.387</td>
<td>0.192</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Psychological satisfaction expected from the investment</td>
<td>5.239</td>
<td>0.001</td>
<td>Reject H0</td>
<td>2.379</td>
<td>0.012</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Adequacy of services and infrastructure</td>
<td>1.115</td>
<td>0.352</td>
<td>Fail to Reject H0</td>
<td>3.044</td>
<td>0.002</td>
<td>Reject H0</td>
</tr>
<tr>
<td>Level of security</td>
<td>2.302</td>
<td>0.061</td>
<td>Fail to Reject H0</td>
<td>0.940</td>
<td>0.499</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Distance from the city centre</td>
<td>2.596</td>
<td>0.039</td>
<td>Fail to Reject H0</td>
<td>2.140</td>
<td>0.025</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Economic climate</td>
<td>8.301</td>
<td>0.000</td>
<td>Reject H0</td>
<td>2.300</td>
<td>0.016</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Security and regularity of income</td>
<td>3.590</td>
<td>0.008</td>
<td>Reject H0</td>
<td>1.946</td>
<td>0.044</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Security of capital</td>
<td>4.417</td>
<td>0.002</td>
<td>Reject H0</td>
<td>1.735</td>
<td>0.079</td>
<td>Fail to Reject H0</td>
</tr>
<tr>
<td>Supply of commercial space</td>
<td>0.635</td>
<td>0.638</td>
<td>Fail to Reject H0</td>
<td>1.186</td>
<td>0.306</td>
<td>Fail to Reject H0</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001

- The F statistic is used to test the significance of the influence of a categorical variable on a continuous variable i.e. the variability in the continuous (dependant) variable explained by the categorical variable.
- At 99% confidence level, the influence of a categorical variable is considered statistically significant if the p-value of the F statistic is less than 0.01.
The results of the ANOVA procedure show that type of ownership significantly influences four factors, namely; psychological satisfaction expected from the investment, economic climate, security and regularity of income and supply of commercial space. The influence of type of ownership is not statistically significant on the other twelve factors. The zone in which a building is situated influences the rating of only two factors, namely; the demand for commercial space and the adequacy of services and infrastructure.

Therefore, expected income, payback period, cost of finance, expected rate of return, size of land, cost of land, cost of construction, level of security, distance from the city centre, and security of capital are not influenced by the two building characteristics. The findings, therefore, indicate that irrespective of the type of ownership or the zone in which the building is to be found, these factors remain significant in influencing the decision to invest in commercial real estate.

In the case of expected income, the finding is however surprising as from literature, the type of ownership is expected to have some influence on the expected income as a factor influencing the decision to invest in commercial real estate. Private owners are highly motivated by profits while in the case of public and parastatal owners, this factor may be masked by the social need. The same case also applies to the expected rate of return. However, the influence of the type of ownership on the expected income may be expressed
through the characteristic's influence on the economic climate as well as the security and regularity of income.

In relation to the demand for commercial space and adequacy of services and infrastructure, the null hypotheses are not rejected indicating that the factors are influenced in their occurrence or significance in the decision to invest by zoning. Some zones are more favorable than others and investors in the less favourable locations will be expected to be more concerned as to whether the space will be taken up, when and how much they are likely to get in terms of income. Some areas are also better served by various services and facilities making them more desirable and properties in the areas more marketable.

On the size and cost of land, the null hypotheses for type of ownership and zoning are not rejected indicating that the attributes have got no influence on the two factors in the decision to invest in commercial real estate. One would perhaps expect that the type of ownership would have some influence on the factors. This is on account that land is expensive and the more land an investor takes up, the higher the cost of the investment. For instance, with the private owners' main aim being geared towards maximising profits, it would be expected that they would be very concerned about the size and cost of land. This is because, their aim would to be utilize the land intensely in the quest to maximise returns and in the same line minimise costs. The influence on the two factors by type of ownership, may however be expressed through
the characteristic's influence on the supply of commercial space. This is because, size and cost of land have a bearing on the amount of commercial space that will be supplied.

6.4: Summary

Therefore, using the mean ranking of the factors, the population mean score and the critical z-test, one may conclude that the factors that influence the decision to invest in commercial real estate are: expected income, payback period, cost of finance, demand for commercial space, expected rate of return, size of land, cost of land, cost of construction, psychological satisfaction expected from the investment, adequacy of services and infrastructure, level of security, distance from the city centre, economic climate, security and regularity of income, security of capital and supply of commercial space.

The results of the ANOVA procedure applied to the data show that type of ownership significantly influences the rating of only four (4) factors, namely psychological satisfaction expected from the investment, economic climate, security and regularity of income and supply of commercial space. The influence of type of ownership is not statistically significant on the other twelve factors. The zone in which a building is situated influences the rating of only
two factors, namely, the demand for commercial space and the adequacy of
services and infrastructure.

Therefore, expected income, payback period, cost of finance, expected rate
of return, size of land, cost of land, cost of construction, level of security,
distance from the city centre, and security of capital are not influenced by the
two building characteristics. The findings, therefore, indicate that irrespective
of the type of ownership or the zone in which the building is to be found, these
factors remain significant in influencing the decision to invest in commercial
real estate.

These observations, therefore, imply that the sixteen (16) factors identified as
significant factors are generally rated to be of major importance in the
decision to invest in commercial real estate irrespective of the type of
ownership and the zones in which the buildings are to be found within the city
of Nairobi. The reason for this is because it was observed that the two
buildings' characteristics influenced the actual score of importance of the
factors and not the ranking. This observation suggests that a person intending
to make a decision to invest in commercial real estate, must evaluate as
wisely and as explicitly as possible at least all the above sixteen factors.
CHAPTER SEVEN

SIGNIFICANT FACTOR CONTRIBUTION TO THE DECISION TO INVEST IN COMMERCIAL REAL ESTATE

7.1: Introduction

In the previous chapter, Chapter Six, the factors that influence the decision to invest in commercial real estate were identified and ranked. Significant factors in the decision to invest in these properties were thereby identified as sixteen (16) factors out of the initial number of thirty (30) factors. In the same chapter, the influence of the building characteristics, namely; type of ownership and zoning, on these factors was established.

It however became necessary to establish the contribution of these identified significant factors in the decision to invest in commercial real estate with the aim of coming up with a function that may be used to classify future investment decisions. This was done by using the data obtained from the buildings to come up with a function that may be used to predict the category a future investment decision will fall into where the independent variables are known. That is whether a future investment decision will be a yes/wise or a no/unwise. To determine the category in which a future investment decision will fall into, discriminant analysis was used to come up with a prediction
equation. On top of the classification, the equation helps assess the relative importance of the independent variables in classifying the dependant variable. It is possible in future investment decisions to accurately predict the values of the independent variables.

7.2: Identification of the Classifying Factors

The identified sixteen (16) significant factors are:

- Expected income
- Payback period
- Cost of finance
- Demand for commercial space
- Expected rate of return
- Size of the land
- Cost of the land
- Cost of construction
- Psychological satisfaction expected from the investment
- Adequacy of services and infrastructure
- Level of security
- Distance from the city centre
- Economic climate
-Security and regularity of income
-Security of capital
-Supply of commercial space

The contribution of each of these sixteen factors of major importance in the decision to invest has been indicated by:

-The statistical significance of the difference between means of each of the factors in the two groups, yes/wise and no/unwise. The F-ratio is used to test the difference of mean values in the two groups. The greater the F-ratio, that is, the smaller the p-value of the mean value of a factor, the greater is the contribution of the factor in influencing the decision to invest. A factor exhibiting a more significant difference between means in the two groups has a greater classifying power than a factor exhibiting a less significant difference.

-The contribution was also indicated by the coefficient of the factor in a linear classification function formulated using the factors of major importance. The coefficient of a factor indicates the sensitivity of the function to a unit change in the value of the factor.
The two indicators of the contribution of the factors to the investment decision are shown using discriminant analysis. A decision rule for classifying an investment decision as either yes/wise or no/unwise was formulated using seven of the factors of major importance, namely:

- Net annual income; in Kenya Shillings per year
- Payback period; in number of years
- Return on invested capital; net annual income expressed as a percentage of the initial investment cost
- Size of land; in acres
- Cost of land; in Kenya Shillings
- Cost of construction; in Kenya Shillings
- The distance from the Central Business District, the Kenyatta International Conference Centre (KICC); in kilometres.

Nine factors of major importance, namely; cost of finance, economic climate, adequacy of services and infrastructure, level of security, demand for commercial space, supply of commercial space, security of capital, security and regularity of income and psychological satisfaction expected from the investment, were not included in the formulation of the linear discriminant function for the following reasons:
Cost of finance and the economic climate are not likely to vary from one case to another in the study. The cost of finance in particular normally depends on the prevailing interest rates in the financial market, which would be basically the same in Nairobi at a given time of the year. At the time the data was collected, the lending (base) rate was about 26% in most of the commercial banks in Kenya.

Demand for and supply of commercial space are unlikely to vary significantly from one case/building to another in the population targeted in this study. All the cases are situated in Nairobi, majority of them in the Central Business District, where the demand and supply may be considered to be constant for all the cases. Their influence is also reflected in the net income, rate of return as well as the cost of land.

Security of capital, security and regularity of income and the psychological satisfaction expected from the investment are also unlikely to vary from one case to another because the type of investment considered (commercial real estate) offers almost the same level of security of capital, security and regularity of income as well as psychological satisfaction in all the cases investigated in the study.
-The influence of the adequacy of services and infrastructure and the level of security have been considered together under the cost of land because the factor reflects the relative "betterness" or "poorness" of a location and is influenced by, interalia, the quality of services and infrastructure in a locality or on a site as well as the general reputation of an area amongst other factors.

7.3: Test of Equality of Group Means

The test of equality of group means (yes/wise and no/unwise) was carried out to show if the group means differ on each variable. The results of the test of the difference of mean values of each of the significant seven factors in the two groups (yes/wise and no/unwise) are as shown in Table 7:1. The following are the hypotheses applied in respect of each of the seven factors in testing the significance of the difference between the means:

Research hypothesis: The mean value of the variable for the cases in the category "yes/wise" is not equal to the mean value of the variable for the cases in the category "no/unwise".

$$H_A: \mu_{yes/wise} \neq \mu_{no/unwise}$$
Implying that, the factor has a contribution in classifying the categorical dependant variable, in this case the investment decision. The alternative hypothesis was:

Null hypothesis: The mean value of the variable for the cases in the category "yes/wise" is equal to the mean value of the variable for the cases in the category "no/unwise".

\[ H_0: \mu_{yes/wise} = \mu_{no/unwise} \]

Implying that, the factor does not have a contribution in classifying the categorical dependant variable, in this case the investment decision.

At 99% confidence level, the null hypothesis in this case will be rejected if the p-value (area in the tails of the F-distribution) is less than 0.01, meaning that the difference in the means is statistically significant. This p-value corresponds to the F-value of about 6.896. If the F-value observed in a factor is greater than 6.896, the difference between the means of the variable in the two groups (yes/wise and no/unwise) is statistically significant.
Table 7.1: Results on the Test of Equality of Group Means

<table>
<thead>
<tr>
<th>Factor</th>
<th>F Statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on the invested capital</td>
<td>18.335</td>
<td>0.000</td>
</tr>
<tr>
<td>Net annual income</td>
<td>14.257</td>
<td>0.000</td>
</tr>
<tr>
<td>Cost of land</td>
<td>9.982</td>
<td>0.002</td>
</tr>
<tr>
<td>Cost of construction</td>
<td>8.878</td>
<td>0.003</td>
</tr>
<tr>
<td>Size of land</td>
<td>6.896</td>
<td>0.010</td>
</tr>
<tr>
<td>Payback period</td>
<td>2.223</td>
<td>0.138</td>
</tr>
<tr>
<td>Distance from KICC</td>
<td>1.928</td>
<td>0.167</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001

Table 7.1: shows that, the difference of mean values of the factors are statistically significant at 99% confidence level in five of the factors, namely:

- Return on the invested capital
- Net annual income
- Cost of land
- Cost of construction
- Size of land

The other two factors, namely; payback period and the distance from the KICC do not exhibit a statistically significant difference between the two groups. The significance of the five factors implies that the five are the ones
that give the main contribution to the investment decision, while the other two
give but a relatively minor contribution to the decision.

The return on invested capital has the greatest F-statistic followed by the
expected net income. This implies that, the decision to invest in commercial
real estate is highly influenced by the factors. The payback period and the
distance from KICC have the largest p-values, meaning that, they have the
smallest differences between their means in the two categories of the
investment decision. This also means that, they have the smallest
explanatory power (contribution) in the decision to invest.

The test of equality of means, F-statistic, shows the contribution of a factor
when it is considered alone, in explaining the categorical dependant variable,
in this case the investment decision. In order to show the magnitude of the
contribution of each factor while considering the effect of the other factors, a
linear discriminant function combining all of the seven factors was formulated.

7.4: The Linear Discriminant Function

The linear discriminant function combines all of the seven factors and shows
the contribution of each factor while considering the effect of the other factors.
The function may also be used to predict the class in which a future
investment decision is likely to fall in given the value of the variables. That is, whether an investment decision is wise or unwise.

In the study, the primary aim of the function is to predict the group membership from the predictor variables. The group differences are not examined as information is only available from one group. That is, the group that invested in commercial real estate.

All the factors were considered in the function irrespective of the significance of the difference in the means shown in Table 7.1. This is in order to show the sensitivity of the discriminant function to each of the factors, since all of them were observed to be of major importance as described in section 7.1.

A basic assumption that must be satisfied in order that the results of a discriminant analysis are valid is that the independent variable(s) is normally distributed in each of the two categories of the dependant variable (Lachenbruch, 1975; 40). Examining the skewness and the kurtosis of the seven independent variables reveals that the probability distributions of most of them are far from normal. Table 7.2 shows that most of the distributions are skewed and leptokurtic, that is, kurtosis is greater than zero (0).
Table 7.2: Skewness and Kurtosis of the Independent Variables in the Data

<table>
<thead>
<tr>
<th>Factor</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net annual income</td>
<td>2.290</td>
<td>6.742</td>
</tr>
<tr>
<td>Return on invested capital</td>
<td>2.306</td>
<td>5.495</td>
</tr>
<tr>
<td>Payback period</td>
<td>1.902</td>
<td>4.770</td>
</tr>
<tr>
<td>Size of land</td>
<td>3.866</td>
<td>24.098</td>
</tr>
<tr>
<td>Cost of land</td>
<td>5.312</td>
<td>32.069</td>
</tr>
<tr>
<td>Cost of construction</td>
<td>5.019</td>
<td>28.053</td>
</tr>
<tr>
<td>Distance from KICC</td>
<td>0.847</td>
<td>0.615</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001

A logarithmic transformation was, therefore, applied on independent variables which exhibited the largest skewness and range on their scale of measurement, in order to "stabilize" them and satisfy the earlier mentioned assumption. Table 7.3 gives the skewness and the kurtosis of the transformed data and shows that the values of skewness and kurtosis are significantly reduced in the transformed data making the transformed data closer to a normal distribution (whose skewness and kurtosis are both equal to zero) than the raw data.
Table 7.3: Skewness and Kurtosis of the Independent Variables in the Transformed Data

<table>
<thead>
<tr>
<th>Factor</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net annual income</td>
<td>-0.247</td>
<td>-0.231</td>
</tr>
<tr>
<td>Return on invested capital</td>
<td>-0.309</td>
<td>0.752</td>
</tr>
<tr>
<td>Payback period</td>
<td>0.090</td>
<td>-0.409</td>
</tr>
<tr>
<td>Size of land</td>
<td>-0.374</td>
<td>1.886</td>
</tr>
<tr>
<td>Cost of land</td>
<td>0.185</td>
<td>-0.576</td>
</tr>
<tr>
<td>Cost of construction</td>
<td>0.377</td>
<td>0.804</td>
</tr>
<tr>
<td>Distance from KICC **</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001

Logarithmic transformation was not applied in the case of the distance variable because its kurtosis and the skewness were relatively small. This means that, the data very closely approximated the normal distribution and there was no need to "stabilize" it by a transformation.

The test of equality or the difference of the means in the transformed data shows that the transformation does not alter the significance of the difference in the means. The factors exhibiting statistically significant differences in means (return on the invested capital, net annual income, cost of land, cost of construction and size of land), are the same in both the raw and the transformed data as shown in Table 7.4.
Table 7.4: Tests of Equality of Group Means using the Transformed Data

<table>
<thead>
<tr>
<th>Factor</th>
<th>F Statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Net annual income</td>
<td>14.257</td>
<td>0.000</td>
</tr>
<tr>
<td>Log Return on invested capital</td>
<td>18.335</td>
<td>0.000</td>
</tr>
<tr>
<td>Log Payback period</td>
<td>2.223</td>
<td>0.138</td>
</tr>
<tr>
<td>Log Size of land</td>
<td>6.896</td>
<td>0.010</td>
</tr>
<tr>
<td>Log Cost of land</td>
<td>9.982</td>
<td>0.002</td>
</tr>
<tr>
<td>Log Cost of construction</td>
<td>8.878</td>
<td>0.003</td>
</tr>
<tr>
<td>Distance from KICC</td>
<td>1.928</td>
<td>0.167</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001

The logarithmic transformation does not, therefore, alter the order of the data values in the original data (Dowdy, 1991; 352). Conclusions made on the basis of the transformed data are true for the original data. The results of the discriminant analysis of the transformed data are shown in Table 7.5.

All the factors were considered in the function irrespective of the significance of the difference in the means shown in Table 7.1 in order to show the sensitivity of the discriminant function (investment decision) to each of the factors since all of them were observed to be of major importance as described in section 7.1.
Table 7.5: Discriminant Function Coefficients Based on the Transformed Data

<table>
<thead>
<tr>
<th>Factors</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-3.193</td>
</tr>
<tr>
<td>Log Net annual income (I)</td>
<td>-5.037</td>
</tr>
<tr>
<td>Log Return on invested capital(R)</td>
<td>- 6.091</td>
</tr>
<tr>
<td>Log Payback period (P)</td>
<td>2.670</td>
</tr>
<tr>
<td>Log Size of the land (SL)</td>
<td>-0.633</td>
</tr>
<tr>
<td>Log Cost of the land (CL)</td>
<td>0.201</td>
</tr>
<tr>
<td>Log Cost of construction (CC)</td>
<td>3.768</td>
</tr>
<tr>
<td>Distance from KICC (D)</td>
<td>0.050</td>
</tr>
</tbody>
</table>

Source: Data Analysis, 2001

The p-value of the chi-square test of the discriminant function is 0.001, and shows that the function is statistically significant at 99% confidence level. This means that in the linear function, the independent variables explain a statistically significant proportion of the variability in the dependant variable (decision to invest). From Table 7.5, the discriminant function \( D(x) \) can be expressed as follows:

\[
D(x) = -3.193 - 5.037 \log I - 6.091 \log R + 2.670 \log P - 0.633 \log SL + 0.201 \log CL + 3.768 \log CC + 0.050 D
\]
Where:

Log (I) - Log Net Annual Income
Log(R) - Log Returns on Invested Capital
Log (P) - Log Payback Period
Log (SL) - Log Size of the Land
Log (CL) - Log Cost of the Land
Log (CC) - Log Cost of Construction
(D) - Distance from the City Centre

The dividing point between the two groups is midway between values of the discriminant function evaluated by substituting the group means of the independent variables in the above equation. The values of the function at the group means are -0.468 and 0.474 for "yes/wise" and "no/unwise" respectively. The dividing point is 0.003; and it means that if D(x) is less than 0.003, the decision is wise and if D(x) is greater than 0.003, the decision is unwise.

The constant value -3.193 shows the value of the D(x) when the values of all the independent variables in the equation are equal to zero. Because the scope of the discriminant model does not cover any case in which all the independent variables are equal to zero, the constant does not have any particular meaning as a separate term in the discriminant function. The coefficient of each of the independent variables shows the magnitude and the
direction of change in the discriminant function for a unit change in the variable, holding the other variables in the equation constant.

Increasing the values of the independent variables whose coefficients are positive in the above expression tends to increase the $D(x)$, and hence increasing the likelihood that an investment decision is unwise. On the other hand, increasing the values of the independent variables whose coefficients are negative in the above expression tends to decrease the $D(x)$, and hence increasing the likelihood that an investment decision is wise. The coefficients of the expected income, expected rate of return and the size of land are negative in this function, meaning that the greater the value of these variables, the less the $D(x)$ value and the wiser the investment decision is likely to be. The coefficients of the payback period, cost of land, cost of construction and the distance from the city centre are positive implying that the greater the value of these variables, the greater the $D(x)$ and the more unwise the decision to invest is likely to be.

The size of the coefficients gives an indication of the sensitivity of the $D(x)$, and thus the investment decision, to the factor. The greater the value of the coefficient, the more important the factor is to the investment decision. On the basis of the size of the coefficients, the seven factors can be ranked in terms of their sensitivity to the $D(x)$, (importance to the investment decision) as follows:
-Expected returns
-Expected income
-Cost of construction
-Payback period
-Size of land
-Cost of land and;
-Distance from KICC

This function is likely to perform fairly well in classifying future samples. It was tested on the sampled buildings and found to be accurate in predicting the category of the investment decision. That is, whether to invest or not based on the factors that influence the decision to invest in commercial real estate as well as the performance of the studied buildings.

7.5: Summary

The following are the factors that may be considered in modeling the investment decision, namely; returns on invested capital, net annual income, cost of construction, payback period, size of the land, cost of the land and distance from the city centre. The contribution of a factor to the investment decision is exhibited by the significance of the difference between the mean values of the factor of the categories, yes/wise and no/unwise, of the
investment decision, and the magnitude of the coefficient of the factor in the linear discriminant function formulated using the sample data collected.

The data failed to satisfy a basic assumption of discriminant analysis, that the data should be normally distributed, and therefore, a logarithmic transformation was applied on the data before the discriminant function was formulated. The discriminant function, \( D(x) \), may therefore be formulated as follows:

\[
D(x) = -3.193 - 5.037 \log I - 6.091 \log R + 2.670 \log P - 0.633 \log SL + 0.201 \log CL + 3.768 \log CC + 0.050 \text{D}
\]

Where:
- \( \log (I) \) - Log Net Annual Income
- \( \log (R) \) - Log Returns on Invested Capital
- \( \log (P) \) - Log Payback Period
- \( \log (SL) \) - Log Size of the Land
- \( \log (CL) \) - Log Cost of the Land
- \( \log (CC) \) - Log Cost of Construction
- \( \text{D} \) - Distance from the City Centre

This function is likely to perform well in classifying future samples.
8.1: Introduction

In this chapter, the main findings of the study are discussed. The implications of the findings are described in relation to the factors that influence the decision to invest in commercial real estate in Kenya. It is on the basis of this that some recommendations and areas of further study are proposed.

This study developed from a statement of the problem that commercial real estate investments in Kenya reveal the following problems:

- A shrinking occupation demand;
- Disparities between expected and actual incomes;
- Declining rental values;
- Difficulties in meeting debt servicing obligations;
- Difficulties in completing construction projects within the specified cost and time frames and;
- Uncertainty in the investment.

However, in spite of these problems, new, large and very expensive buildings
continue to be put up in the city of Nairobi and also in other urban centres in the country. There appears to be some unexplained reasons that compel investors to continue investing in this type of property and it was against this background that the researcher undertook to investigate the motivating factors in the decision to invest in commercial real estate.

The objectives of the study were to:

i. To identify and rank the factors that influence the decision to invest in commercial real estate.

ii. To establish the influence (if any) the buildings' characteristics have on the rating of the significant factors in the decision to invest in commercial real estate.

iii. To determine the influence of the significant factors with respect to their contribution to the decision to invest in these properties.

iv. Propose steps to be followed by investors in the decision to invest in commercial real estate investments in order to, amongst other goals, minimise disparities between the expected income and the realised/actual income.
8.2: Conclusions

The objectives of the study were achieved and the main findings of the study are as follows:

-The investments in commercial real estate involved the committing of huge capital outlays. With the cost of the studied buildings ranging from Kshs.12,000,000.00 to Kshs.230,000,000.00, the invested sums are colossal and in addition to this, in the majority of cases, competitive interest rates are charged. From the survey, 70% of the investors had borrowed the required funds. 22% were able to raise all the required funds on their own and only 8% had either inherited the buildings or received them as gifts. The government liberalized interest rates in the early 1990s. Interest rates are now determined to a large extent by the interactions of demand and supply, lender perception of the relative risks associated borrowed funds and government policies and regulations. The high interest rates charged ranging from 26% to 30% renders borrowed funds very expensive. The position is made worse by the pre-mortgage costs that include valuation fees, legal fees, transfer costs etc. that may at times account to as much as 30% of the borrowed sum.

-In the majority of the buildings (61.3%), the occupancy rate was in the category ≤ 80%, implying that most of the buildings had an occupancy rate of between 60% to 80%. Only 20% of the buildings had an occupancy rate of
over 80%. The most unfortunate scenario is that out of the 150 buildings studied, only 18 buildings had a 100% occupancy level. 3 buildings had an occupancy level of ≤ 20%.

The high occupancy rate in the commercial buildings in the city of Nairobi may be attributed to amongst other things the performance of the national economy. Commercial buildings by their nature provide space to tenants whose survival and ability to meet their financial obligations under the lease depend on the performance of the national economy. As pointed out earlier in Section 4.2 of the study, the Kenyan economic growth has been quite subdued since the mid 1970s registering a growth rate of 1.8% and 1.4% in 1998 and 1999 respectively. This was followed by a drop of -0.2% in 2000. Another cause of the high vacancy rate may be the oversupply of commercial space. With a projected supply of 2,152,000 sq. ft. of office space against an annual take-up of only 645,600 sq. ft., vacancies are bound to be experienced within the city.

This low occupancy coupled with the high cost of borrowing the invested funds, clearly implies that it is least probable that the investors will either meet their obligations in terms of servicing any outstanding mortgages or maximize their returns. One of the conditions necessary for a commercial real estate owner to maximize returns from the property is full occupancy. Others include prompt and full rent collection, minimal irrecoverable costs amongst others.
-Given the high cost of borrowed funds and the high vacancy rates, it is therefore, not surprising that the recorded returns average 4.2%. The returns observed in the buildings range from -4.3% to 7.8%. The majority of the buildings (31 buildings or 20.7% of the buildings) were in the category ≤ 4%. 13 buildings or 8.7% of the buildings recorded the highest return in the category ≤ 8%. 8 buildings (5.3%) recorded a negative return, while a total of 54 buildings (36%) fell in the category ≤ 3%. All in all, the studied buildings recorded an average return of approximately 4.2%.

-Disparities in the expected and the actual incomes were observed in 95% of the studied buildings. This is whereby, the actual incomes fell short of the expected incomes. Non of the buildings recorded a higher actual income than that expected. With expected income as the main motivating factor in the decision to invest in commercial real estate, the question as to why there were disparities between the expected income and the actual income in these investments then arose.

The disparity in incomes may be explained by, the significant factors that influence the decision to invest in commercial real estate and the factors that influence the level of income. From the reviewed literature, the factors that influence the level of income in commercial real estate investments were conceptualized in terms of twenty two (22) factors, namely: rental level, size of the building, occupancy level, cost of finance, inflation level, property
taxation, cost of management, distance from the CBD, location, economic climate, cost of land, cost of construction, demand for commercial space, supply of commercial space, political climate, nature of property ownership, legislative controls, adequacy of services and infrastructure, quality of the neighborhood, age of the building, building design and nature of the lease.

The level of income is, therefore, implicitly or explicitly influenced by eight (8) of the sixteen (16) significant factors that influence the decision to invest in commercial real estate. These are: cost of finance, distance from the CBD, economic climate, cost of land, cost of construction, demand for commercial space, supply of commercial space and adequacy of services and infrastructure. The disparities may, therefore, be explained by the other fourteen (14) factors that influence the level of income, namely; size of the building, rental level, occupancy level, inflation level, property taxation, cost of management, economic climate, political climate, nature of property ownership, legislative controls, quality of the neighborhood, age of the building, building design and nature of the lease.

What comes out quite clearly is that, the majority of these 14 factors affect the inherent costs in an investment and it becomes apparent that investors in commercial real estate base their decision to invest on the income they expect paying little attention to the environment around them and the effect it may have on their investment. For example, the magnitude of a number of
factors that affect the level of income may be easily changed by the investor's decision, like the size of the building and the cost of construction. However, the level of rent as well as the occupancy level in the building, are likely to be influenced by more complicated factors such as political climate, economic climate and the quality of the neighbourhood. Therefore, while the expected income is a significant factor in influencing the decision to invest, it ought not be the main motivating factor as it does not take into account the inherent costs that are involved in an investment. By undertaking investments in commercial buildings, it is rightfully perceived that the investors are interested in long-term wealth. This being the case, the focus should be the returns. The expected rate of return would, therefore, be a more logical main motivating factor in the decision to invest in commercial real estate.

A further explanation of the disparity between the actual and the expected income may be given by the uncertainty ingrained in the relatively inaccurate investment appraisal techniques (payback method and simple rate of return method) commonly used in Kenya today. These methods do not sufficiently include a future risk variable in their income predictions. The higher the uncertainty and risk in the income prediction the greater the income disparity is likely to be. Therefore, perhaps the investment appraisals done hitherto, have been giving a too optimistic and erroneous picture of the expected rental incomes.
On the appraisal of the investments, the payback method had been used in most of the buildings. It was applied in 26% of the buildings. The simple rate of return method that came second was found to have been used in 18.7% cases. In some cases, more than one appraisal method was used but, in the majority of cases (42.7%), only one method was used. Three methods were used only in 8% of the cases and there was no instance where four or more methods were used.

From interviews with the professionals, again the payback method came out as the most commonly used method with a rating of 33%. The simple rate of return method followed with 26%. A relatively high percentage of the professionals (80%) had received training in at least five appraisal techniques a clear indication that they were not exploiting their skills fully.

The reasons given by the professionals for the preference of the two methods, the payback and the simple rate of return methods, were that, they are:

- Easy to calculate;
- Quick to calculate, and;
- Easy to understand.

This is in spite of the professionals' vast experience with the interviews revealing that most of these professionals (59%) had on average twelve (12)
years professional experience. None of the respondents gave sensitivity
analysis, probability analysis or monte carlo simulation as the main method
employed yet from the interviews, it was observed that some training had
been received in these methods. These observations, therefore, indicate that
the payback method is the most common method of investment appraisal in
commercial properties in Kenya, followed by the simple rate of return Method.
A more unfortunate scenario is that in 30% of the buildings, no appraisal had
been carried out at all.

However, even with their earlier stated advantages, the payback and simple
rate of return methods have several shortcomings and have been
recommended as supplementary tools/preliminary means in the decision-
making process. The information output from the two methods and; which is
used in making investment decisions is limited. For instance, there is a
fundamental drawback of failing to allow for the time value of money. The
methods do not provide suitable comparisons for two different projects. There
is also the additional problem as to the definition of the start of the payback
period or what constitutes the total investment cost. When a technique
designed as a decision-making aid is open to ambiguity in interpretation, it is
likely to be manipulated so as to lend backing for the desired decision rather
than the right decision. This indicates that the appraisals carried out are not
likely to be very reliable as these two methods have a lot of shortcomings as
appraisal methods.
Also from the interviews with professionals in the real estate sector, it was observed that many of them tended to use certain investment appraisal methods basically on personal judgement, in most cases without any scientific or objective backing. The field of investment appraisal is one that entails personal study by the individual. However, as much as it may be argued that it is completely difficult to eliminate subjectivity in investment appraisal, it can be reduced and adequately managed by the use of objective criteria.

Therefore, contrary to systematic decision-making, it was found out that commercial real estate investors do not know how they make decisions, since no formal decision rules or procedures are followed, leaving the process essentially an intuitive one.

- On the factors that influence the decision to invest in commercial real estate, from the reviewed literature, the factors normally considered by commercial real estate investors prior to committing their capital in these investments were conceptualized as thirty (30) factors. The respondents were then requested to rate the importance of the factors on a 5 point horizontal numeric scale (1-5). The means of the ratings were computed for each factor in order to rank the factors according to their importance.

From the analysis, expected income had the highest mean rating (4.309)
implying that it is the most important factor that investors consider as they make their decision as to whether to invest in commercial real estate or not. That is, the higher the level of the expected income, the more one is compelled to invest in commercial real estate. While the factor has the highest rating, in the earlier analysis, it was established that in 95% of the buildings studied negative disparities were observed between the expected and actual incomes. It was only in 5% of the buildings where the expected income was realized. Thereby, even with the top ranking of the factor, it appears that the investors' major concern was far from being addressed.

Literature and everyday experiences are, however, full of examples wherein large sums of money are committed in massive projects that eventually result in yielding less income than what was expected at inception or no income at all. This takes place when the investor concentrates only on the expected income ignoring the other factors that influence the income receivable from the investment and in essence failing to pay attention to the rate of return. On top of the rate of return, the regularity as well as the duration of the income needs to be taken into account. Where the income is irregular or its flow will be for a short duration, the investor will need to be compensated for taking on the extra risk. This is in agreement with Keyne's theory that when an investor buys an investment or a capital asset, he purchases the right to a series of prospective returns, which he expects to obtain from selling its output (space) after deducting the running expenses of obtaining that output during the life of
an asset. However, this is not the case as from the analysis, the expected rate of return is ranked 5th with a rating of 3.383. Worse still, the security and regularity of income is ranked even lower at the 14th place with a rating of 3.020.

The payback period which to a large extent is based on the expected income was ranked 2nd with a rating of 3.557. The cost of finance which was ranked 3rd also highly influenced the decision to invest in commercial real estate. From earlier analysis, it was observed that the major source of the invested funds was borrowed funds. 70% of the respondents had used borrowed funds to invest in the buildings. With the high cost of borrowing, that is, with the interest rates going as high as 30%, the investors are bound to be concerned about the cost of finance. The cost of finance together with other costs incurred in the running of the building will influence the available income as well as the payback period.

On seeking the views of the professionals on the factors they considered to influence the commercial real estate investors in their decision to invest in these properties, the ranking differed, but mainly in the first 15 factors with minimal changes in the other 15.

The professionals were of the opinion that while the expected rate of return ought to be the main factor influencing the decision to invest in commercial
real estate, this was not the case as they felt the payback period was the
main factor. Probably this was an unconscious effort to defend their extensive
use of the payback period method in the investment appraisal, but there was
the general indication that the “speed of return” of the invested funds was the
major concern. The cost of finance was ranked second and understandably
so given the high cost of finance and the extent of borrowing involved in these
properties. In the third position was the cost of land. Again, in commercial real
estate investments, the one major expensive item is land with prices for
commercial land being as high as 70 to 100 million per acre in the prime
areas. The psychological factors, namely; psychological satisfaction expected
from the investment and the likelihood of the investment enhancing the
investor’s image in the community, were also ranked highly at the 12th and
15th positions respectively. This may be based on the fact that for long
periods in history, a person’s position is determined by the extent of his
land/property ownership. In many societies, this happens to be the case even
today although there are many other ways in which a person may hold
wealth.

However, although the expected income is ranked by the commercial real
Estate investors as the most important factor in the investment decision, none
of the other 28 factors (2 to 29) can be considered unimportant. They scored
a ranking above 2.00, which is statistically greater than the lower extreme of
the horizontal numeric scale 1, which implies insignificance.
After the factors that influence the decision to invest in commercial real estate in Kenya were identified, using the population mean score and the critical z-test, the significant factors were identified. There are sixteen major factors considered in the decision to invest in commercial real estate in Kenya, namely (in descending order of importance):

- Expected income
- Payback period
- Cost of finance
- Demand for commercial space
- Expected rate of return
- Size of the land
- Cost of the land
- Cost of construction
- Psychological satisfaction expected from the investment
- Adequacy of services and infrastructure
- Level of security
- Distance from the city centre
- Economic climate
- Security of capital Security and regularity of income
- Security of capital
- Supply of commercial space
-However, although the tests isolated the significant factors, it was not apparent whether the significant factors were influenced by the different buildings' characteristics. The characteristics considered are: the age of the investor at the time they undertook the investment, the amount of wealth held by the investor prior to investing in the commercial building, type of ownership and the different zones in which these buildings were to be found in within the city of Nairobi. Unfortunately, the investors were unwilling to provide information relating to their age as well as the wealth they held at the time they undertook the investment fearing in most cases that the information was too confidential while in some instances they were just uncooperative. Due to the above reasons, it was only possible to establish the relationship between the significant factors and the remaining two characteristics, namely; type of ownership and the zonal layout in the city of Nairobi.

The results of the ANOVA procedure showed that type of ownership significantly influenced four factors, namely; psychological satisfaction expected from the investment, economic climate, security and regularity of income and supply of commercial space. The influence of type of ownership is not statistically significant on the other twelve factors. The zone in which a building is situated influences the rating of only two factors, namely; the demand for commercial space and the adequacy of services and infrastructure.
Therefore, expected income, payback period, cost of finance, expected rate of return, size of land, cost of land, cost of construction, level of security, distance from the city centre, and security of capital are not influenced by the two building characteristics. The findings, therefore, indicate that irrespective of the type of ownership or the zone in which the building is to be found, these factors remain significant in influencing the decision to invest in commercial real estate.

These observations, therefore, imply that the sixteen (16) factors identified as significant factors are generally rated to be of major importance in the decision to invest in commercial real estate irrespective of the type of ownership and the zones in which the buildings are to be found within the city of Nairobi. The reason for this is because it was observed that the two buildings' characteristics influenced the actual score of importance of the factors and not the ranking. This observation suggests that a person intending to make a decision to invest in commercial real estate, must evaluate as wisely and as explicitly as possible at least all the above sixteen factors.

-To assist in the classification of future investment decisions in commercial real estate, a statistical model for classifying a proposed investment decision as yes/wise or no/unwise has been developed in the study. The model is a
linear discriminant function \((D(x))\) and may be expressed as follows:

\[
D(x) = -3.193 - 5.037\log I - 6.091\log R + 2.670\log P - 0.633\log SL + 0.201\log CL + 3.768\log CC + 0.050\ D
\]

Where:

- \(\log (I)\) - Log Net Annual Income
- \(\log (R)\) - Log Returns on Invested Capital
- \(\log (P)\) - Log Payback Period
- \(\log (SL)\) - Log Size of the Land
- \(\log (CL)\) - Log Cost of the Land
- \(\log (CC)\) - Log Cost of Construction
- \((D)\) - Distance from the City Centre

Not all the sixteen (16) factors that are significant in the decision to invest in commercial real estate influence the classification of an investment decision as yes/wise or no/unwise. Only seven of the sixteen factors show a statistically significant influence on the wisdom of the decision to invest. The factors are: expected returns, expected net annual income, cost of construction, payback period, size of the land, cost of land and distance from the city centre.

The dividing point of the function is 0.003; and it means that if \(D(x)\) is less than 0.003, the decision is wise and if \(D(x)\) is greater than 0.003, the decision
is unwise. The constant value -3.193 shows the value of the D(x) when the values of all the independent variables in the equation are equal to zero. Because the scope of the discriminant model does not cover any case in which all the independent variables are equal to zero, the constant does not have any particular meaning as a separate term in the discriminant function.

Increasing the value of the independent variables whose coefficients are positive in the above expression tends to increase the D(x), and hence increasing the likelihood that an investment decision is unwise. On the other hand, increasing the value of the independent variables whose coefficients are negative in the above expression tends to decrease the D(x), and hence increasing the likelihood that an investment decision is wise. The coefficients of the expected income, expected rate of return and the size of land are negative in this function, meaning that the greater the value of these variables, the less the D(x) value and the wiser the investment decision is likely to be. The coefficients of the payback period, cost of land, cost of construction and the distance from the city centre are positive implying that the greater the value of these variables, the greater the D(x) and the more unwise the decision to invest is likely to be.

The coefficient of each of the independent variables shows the magnitude and the direction of change in the discriminant function for a unit change in the variable, holding the other variables in the equation constant. On the
basis of the size of the coefficients, the seven factors can be ranked in terms of their sensitivity to the $D(x)$, (importance to the investment decision) as follows:

- Expected returns
- Expected income
- Cost of construction
- Payback period
- Size of land
- Cost of land and
- Distance from KICC

This function is likely to perform fairly well in classifying future samples. It was tested on the sampled buildings and found to be accurate in predicting the category of the investment decision.

-The study hypothesis stated as: "Returns on invested capital are not the main motivating factor in the decision to invest in commercial real estate"; was not rejected. This led to the rejection of the alternative hypothesis stated as; "Returns on the invested capital are the main motivating factor in the decision to invest in commercial real estate". Expected income was found to be the most important factor influencing the decision to invest in commercial real estate.
8.3 Recommendations

-The decision to invest in commercial real estate ought to be undertaken in a systematic manner. Effective decision-making occurs rarely by chance, but involves a logical, sequential and ordered approach to solving problems as proposed in Figure 8.1.

Investment in commercial real estate is a problem of decision making in the presence of uncertainty and risk. Uncertainty inevitably affects all future events and confronting it is not easy. We naturally try to avoid it, sometimes we even pretend it does not exist. Our ancestors sought to avoid it by consulting soothsayers who would "reveal" the uncertain future. The methods have changed, astrology and the reading of sheep entrails are somewhat out of fashion today, but predictions of the future still abound. While many will argue that the problem of uncertainty can never be resolved completely as nobody will ever have a complete knowledge of the future, uncertainty can be managed as the consequences of the actions taken in the past, present and in the future are not completely random. This may be done by handling decision making appropriately and adequately as proposed in Figure 8.1.
Figure 8.1: Proposed Decision-Making Approach in Commercial Real Estate Investments

Start

Problem identification → Problem analysis (Economic, physical, political, legal, locational, psychological and environmental attributes)

→ Specification of alternatives

→ Collect pertinent data

→ Is the data satisfactory?

Yes

Evaluation of alternatives (Utilise mathematical models)

Review & adjust for special factors; Apply alternative methods as check; Ensure all crucial issues are addressed)

→ Determine solution acceptability

Unacceptable → Acceptable

Decision

Investment Zone

No

Source: Author’s construct, 2001
In commercial real estate appraisal, the appraiser should make explicit allowance for risk and the principle variables affecting future returns, particularly the prospects for rental growth and obsolescence. This leads us to objective and not subjective methods of evaluating alternatives. Mathematical methods by their nature are the most accurate, objective and result in the best evaluation of the alternatives. With this recommendation, the rule of thumb, simple judgment and expert opinion methods of appraisal are not fully disregarded. They come in handy but, to support the mathematical methods as previous experiences help in dealing with current and to some extent future experiences.

The mathematical methods of appraisal include the discounted cash flow methods, non discounted cash flow methods and probabilistic methods. However, the most important aspect of these methods concerns the drawbacks of each method. For instance, the payback method which was found to have been used in the appraisal of 26% of the buildings, although quick and simple to calculate and also readily understood it has several shortcomings. While the drawbacks of the various appraisal methods make it difficult to select the best method to use, probabilistic methods tend to give a deeper insight into the effects of those factors that influence the rewards from the commitment of capital in investment projects. Aspects of security, that is the risk dimensions of investments are best viewed and judged in terms of probabilities. The methods have also been hailed as providing a rational
method of arriving at the most probable value whilst quantifying the chances of other outcomes.

While the adjustments to allow for uncertainties through the use of these methods may be challenged as nothing more than guesses, perhaps they are, but even so, they are guesses that must be made and will be made, either explicitly or implicitly. Failure to apply the probability adjustment does not avoid the problem, it merely transfers the guess element in a disguised form to another stage of decision-making. It is from this that one may deduce that in order to come up with a "perfect" appraisal, the use of a combination of probabilistic methods and the discounted cash flow and/or non discounted cash flow methods is recommended. This is in order that the shortcomings of one method are counteracted by the advantages of another method making the decision so made to be much more reliable than if a decision was made on the basis of one method of appraisal.

-In the appraisal of commercial real estate, a checklist of the sixteen factors of major importance should always be made and each of the factors carefully examined and objectively assessed before the decision is made. These sixteen factors are:

-Expected income
-Payback period
-Cost of finance
- Demand for commercial space
- Expected rate of return
- Size of the land
- Cost of the land
- Cost of construction
- Psychological satisfaction expected from the investment
- Adequacy of services and infrastructure
- Level of security
- Distance from the city centre
- Economic climate
- Security of capital
- Security and regularity of income
- Supply of commercial space

While the expected income is a significant factor in influencing the decision to invest, it ought not be the main motivating factor as it does not take into account the inherent costs that are involved in an investment. By undertaking investments in commercial buildings, it is rightfully perceived that the investors are interested in long-term wealth. This being the case and also taking into account the colossal sums tied up in these investments, the focus should be the returns. The rate of return would therefore, be a more logical main motivating factor in the decision to invest in real estate.
-A proposed investment decision should always be tested using the discriminant function developed in the study. All the independent variables in the function can be practically measured with reasonable accuracy before the investment is undertaken.

-The researcher is of the opinion that a standard "school of appraisal" should be developed and introduced in Kenya that would enhance exchange of information between specialists, so as to avoid the diverse values currently being experienced in the appraisal profession.

-Continuous professional development programmes should also be instituted and strongly emphasized in Kenya to educate appraisers of real estate and in particular commercial real estate investments on the current probabilistic methods of investment appraisal and also encourage their use.

-The restoration of macroeconomic stability (low inflation and interest rates, stable exchange rate) in the Kenyan economy. The prerequisite for effectively pursuing these themes is restructuring of government, including completing public enterprise reforms and revitalising the public sector to focus on core business, achieve greater value for money and enhance responsiveness to community needs. The government on its part should defer any unnecessary expenditure, trim the military and civil service and resist claims for any unbudgeted payments or subsidies. Parastatals should similarly tighten their
budgetary control and privatisation should be accelerated. With political
determination and adequate rains, a short term recovery is possible given the
resilience the economy has shown through the hard times.

Economic performance both at the national and local levels directly influences
the process of investment in real estate as well as the profits. Economic
growth in Kenya has been subdued for the last seven years while on the other
hand the population has continued to increase. This has made it difficult for
the government to raise the living standard of the people. Also affecting the
economy are the problems of the domestic debt, corruption and the problems
associated with rapid urbanisation. As the pace of globalisation and
intergration gain momentum, the economy faces greater challenges in trying
to address the economic and social problems affecting the greater part of the
population. The major challenge in the medium term, therefore, is to steer the
economy towards sustainable growth and employment in the long term. Job
creation remains the life blood of commercial real estate. When jobs are
plentiful, office buildings and residential properties enjoy healthy occupancy
rates and shopping centres benefit from the strong consumer spending.

There is a strong need for the public sector to improve its capacity. In
attempting to achieve this objective, the government must recognise the limits
on its ability to influence development and instead concentrate on key
functions that only it can perform, notably increasing its own efficiency and complementing and supporting private sector efforts.

What then can we expect of a general theory for decision making in commercial real estate investments? It should provide a framework in which all available information is used to deduce which of the decision alternatives is "best" according to the decision-maker's preferences. But choosing an alternative that is consistent with these preferences and present knowledge does not guarantee that we will choose the alternative that by hindsight turns out to be the most profitable. A distinction needs, therefore, to be made between a good decision and a good outcome. We are familiar with situations in which careful management and extensive planning produced poor results while a disorganised and badly managed competitor achieved spectacular success. However, the best protection that we have against a bad outcome is a good decision based on all the available information.

8.4: Areas of Further Study

Although this study was mainly concerned with the factors that influence the decision to invest in commercial real estate in Nairobi, Kenya, it became apparent in the course of the study that there are areas that need further
discussion. The areas evident from the study that should be explored include among others:

- Portfolio selection with the aim of diversification across a number of different investment opportunities.

- Best portfolio for any given level of risk.

- An evaluation of the alternative forms of investment in Kenya
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APPENDIX A

SAMPLING FORM FOR THE COMMERCIAL BUILDINGS

1. ZONE: __________________  2. AREA: __________________

3. AVENUE/STREET/ROAD/LANE: __________________

4. NAME OF THE BUILDING: __________________

5. DATE THE BUILDING WAS ACQUIRED OR CONSTRUCTED BY THE CURRENT OWNER: __________________

6. IS THE BUILDING:
   
   - PURELY COMMERCIAL AND NOT OCCUPIED FOR OTHER PURPOSES FOR EXAMPLE, RESIDENTIAL OR INDUSTRIAL USES? YES NO

   - UNDER CONSTRUCTION OR BEING RENOVATED? YES NO

   - OF TEMPORARY CONSTRUCTION? YES NO

   - FULLY OWNER OCCUPIED? YES NO

7. OWNERSHIP OF THE BUILDING? (PLEASE TICK)
   
   - PUBLIC - GOVERNMENT & LOCAL AUTHORITIES

295
-SEMI-PUBLIC - PARASTATALS (GOVERNMENT & PRIVATE INSTITUTIONS)

-PRIVATE - COMPANIES/PRIVATE INSTITUTIONS & CO-OPERATIVES

-PRIVATE - INDIVIDUALLY OWNED

NAME OF THE RESPONDENT: ____________________________

OWNER/PROPERTY MANAGER: __________________________

SIGNATURE: ________________ , DATE: ________________
APPENDIX B

QUESTIONNAIRE FOR THE INVESTOR

BUILDING PARTICULARS:

(a) Name of the building: ________________________________

(b) Location:
   i. Zone: ________________________________
   ii. Area: ________________________________
   iii. Distance from KICC: _________________ (km)

(c) Current Owner:
   i. Private (individual)
   ii. Private (company)
   iii. Parastatal
   iv. Public
   v. Other
      (specify): ________________________________

(d) Size:
   i. Size of Land: ___________________________ (acres)
   ii. No. of storeys: ___________ (including ground floor)
   iii. Floor area (Plinth Area): _____________ (sq. m.)
   iv. Floor area (Lettable Area): ___________ (sq. m.)
   v. Percentage of let area: _______________ (sq. m.)
   vi. Percentage of owner-occupied area: ___________ (sq. m.)
vii. No. of car-parks provided: ________________
viii. Percentage of let car-parks: ________________
ix. Percentage of owner-occupied car-parks: ______

(e) Development costs:

i. Date of construction: _______________________

ii. Cost of construction (Kshs): _____________________
   (at that time)

iii. Cost of land (Kshs): _________________________
   (at that time)

iv. Any other costs incurred
during the construction: _______________________
   (at that time)

v. Total development cost (Kshs): __________________
   (as at the date the construction was completed)

(f) If the property was acquired with the existing developments, please indicate:-

i. Date the property was acquired
   by current owner: _________________________

ii. Purchase Price (Kshs.): _______________________

iii. Any other costs incurred
    in acquiring the property
    (Taxes, Legal fees etc) (Kshs.): ________________

iv. Total cost (Kshs.): _________________________
(g) Reason(s) for choice of the particular location:

- Near the CBD
- Connected to the CBD by good roads
- Well served by services such as mains water, electricity, telephones, waste disposal systems
- Secure for business operations
- Favorable and flexible planning regulations
- Quiet locality
- Has natural beauty from the surrounding vegetation, physical features or any other aspect of scenery
- Clean surroundings
- Has a long history of high reputation and prestige
- Has attractive land values
- Did not have an alternative site
- Others
  (specify): ________________________________

(h) Source of funds for development or purchase:

Self sponsored
Borrowed
Building was inherited
Buildings was given as a gift
Other sources
(specify): ________________________________
(i) Average rent per square m. per month: ______________________

(j) Average service charge per square m. per month: ______________________

(k) Average rate per car-park per month: ______________________

(l) The rent charged as well as other charges are based on:

- The initial investment appraisal
- Type of user
- A rental assessment valuation
- Open market forces
- Amount of space occupied
- Recovery of the invested amount
- Location
- The length of the lease
- Situation of the tenant in the building
- Ensuring that the building is self supporting taking into account all its expenses
- Others
  (specify): ______________________
(m) Out-goings:

(i) Items falling under out-goings:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Land Rent</td>
<td>Rates</td>
</tr>
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<td></td>
<td>Manag. Fees</td>
</tr>
<tr>
<td>Water</td>
<td>Insurance</td>
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<tr>
<td></td>
<td>Maint. &amp; Repairs</td>
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<tr>
<td>Electricity</td>
<td>Telephone</td>
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<td></td>
<td>Security</td>
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<tr>
<td>Others (specify):</td>
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</tbody>
</table>

(ii) Average level of out-goings per month as a percentage of the gross monthly income:

(n) Please indicate the gross monthly income (Kshs.):

i. Estimated at time the investment was undertaken:

ii. Achieved today:
PERFORMANCE OF THE COMMERCIAL PROPERTY IN THE LAST FIFTEEN (15) YEARS

Kindly give details on the performance of the investment in the last fifteen (15) years by completing the table below:

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<tr>
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<tr>
<td>Average Rent in Kshs./sq.m</td>
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<td>Average occupancy level (%) of lettable area</td>
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<td>Annual gross income</td>
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<td>Maintenance costs (%) of gross income</td>
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<tr>
<td>Manag. Costs (%) of gross income</td>
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<td>Taxes (rates, income tax etc) (%) of gross income</td>
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<td>Insurance costs (%) of gross income</td>
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<td>Other costs (%) of gross income</td>
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<tr>
<td>Total outgoings (%) of gross income</td>
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</table>
THE DECISION TO INVEST

(a) Which of the following methods of viability appraisal did you (your consultants) use in justifying the development/acquisition of this property:-

1. Payback method
2. Simple Rate of Return/Return on capital Employed/
   Accounting Rate of Return
3. Breakeven analysis
4. Net present Value Method (NPV)
5. Internal Rate of Return (IRR)
6. Sensitivity analysis
7. Probability analysis
8. Monte Carlo Simulation
9. Cost-Benefit Analysis
10. None
11. Others
   (specify): ________________________________

(b) From the scale below rate the following factors, to indicate how important you considered them at the time you made the decision to invest in this property.

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Extremely important</th>
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</thead>
<tbody>
<tr>
<td>Extremely unimportant</td>
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<tr>
<td>Scale</td>
<td>Percentage</td>
<td>Descriptive Phrase</td>
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<tr>
<td>1</td>
<td>≤ 20%</td>
<td>Not significant</td>
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<td>2</td>
<td>≤ 40%</td>
<td>Marginally significant</td>
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<tr>
<td>3</td>
<td>≤ 60%</td>
<td>Fairly significant</td>
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<tr>
<td>4</td>
<td>≤ 80%</td>
<td>Significant</td>
<td></td>
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<tr>
<td>5</td>
<td>≤ 100%</td>
<td>Very significant</td>
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</tbody>
</table>

1. Expected Rate of Return  
2. Expected Income  
3. Cost of Finance  
4. Payback Period  
5. Size of Land  
6. Cost of Land  
7. Size of the Building  
8. Cost of Construction  
9. Level of Inflation  
10. Level of Taxation in the Property Market  
11. Cost of Managing the Property  
12. Distance from the Nairobi City Centre  
13. Location of the Building  
14. Security of Capital  
15. Security and Regularity of Income  
16. Marketability & Liquidity of Capital  
17. Demand for Commercial Space  
18. Supply of Commercial Space  
19. Opportunity Cost of invested Capital  
20. Economic Climate
21. Political Climate
22. Legislative Controls
23. Nature of Property Ownership
24. Level of Security
25. Adequacy of Services & Infrastructure
26. Psychological Satisfaction expected from the Investment
27. Likelihood of the Investment Enhancing one’s Image in the Community
28. Independence (freedom from worry, harassment etc.) expected from the Investment
29. Your willingness to bear Risks
30. Quality of the Physical Environment
31. Others
   (specify):

(c) Do you consider the income received for the building fair in comparison to the amount invested?

   Yes  No

Briefly give reasons for your answer:

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
(d) If your plot were vacant (undeveloped) today, would you consider it a wise decision to construct a building similar to the one already existing on the plot?

Yes  No

Briefly explain your answer:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

(e) If you had resources, would you today still consider purchasing a similar building?

Yes  No

Briefly explain your answer:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Thank you very much for your assistance