ASSESSMENT OF RISKS ON DIRECT COMMERCIAL REAL ESTATE INVESTMENT IN BENIN CITY, NIGERIA

PRESENTED BY:

OKOJIE PRECIOUS IDEMUDIA
ENV1905968

DEPARTMENT OF ESTATE MANAGEMENT,
FACULTY OF ENVIRONMENTAL SCIENCE,
UNIVERSITY OF BENIN,
BENIN CITY.

SUPERVISED BY

DR. M.O KOMOLAFE

FEBRUARY 2025.

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A PROJECT SUBMITTED TO THE DEPARTMENT OF ESTATE MANAGEMENT, FACULTY OF ENVIRONMENTAL SCIENCE, UNIVERSITY OF BENIN, BENIN CITY. IN PARTIAL REQUIREMENT FOR THE AWARD OF BSC IN ESTATE MANAGEMENT

SUPERVISED BY

DR. M.O KOMOLAFE

FEBRUARY 2025.

CERTIFICATION

This is to certify that this work was carried out by **OKOJIE PRECIOUS IDEMUDIA** with MAT NO ENV1905968 of the Department of Estate Management, University of Benin, Benin City, Edo State, in account with the rules and regulations of the University of Benin for the award of BSC in Estate Management.

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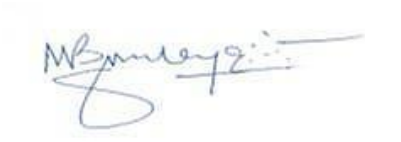

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DEDICATION

This project is dedicated to God Almighty who through His love has seen me through the periods of my life and this project, and to my parents, Mr. SUNDAY and MRS. REBECCA OKOJIE for their love and support towards my upbringing.

ACKNOWLEDGEMENT

My sincere appreciation and acknowledgement goes to Almighty God for his Mercies, Grace and Strength which enabled me to start and finish this journey well.

I appreciate the academic guidance and support of my Head of Department and supervisor in the person of Dr. Markson Opeyemi Komolafe for his invaluable guidance and contribution towards the completion of this thesis, thank you for your motivation sir.

My sincere gratitude goes to my lecturers Prof. P.S Ogendengbe, Dr. I. E. Chukujekwu, Dr. M. A. Olukujo, Dr. (Mrs.) Edionwe, Dr. Patience O. Iruobe(Mrs.), ESV Ernest Alohan, ESV Pius Chima, and other academic and non academic staff of the Department of Estate Management, too numerous to mention for their knowledge and collective inputs in me during the duration of my study, thanks for showing me the path.

I am also indebted to my lovely parents Mr. Sunday Okojie and Mrs. Rebecca Okojie for their love, prayers, financial support and sacrifice all to make sure that I get the best out of life. May God Almighty reward you, keep you in good health and strength to enjoy the fruits of this labor, and I also appreciate my siblings, Mr. Peace Okojie, Mr Constance Okojie, Miss Goodness Okojie and Miss Rejoice Okojie. May you all prosper in all that you do.

Special thanks to my noble colleagues for their love and support throughout the years and for making this journey worthwhile. To the entire students of Estate Management, University of Benin. I thank you all.

Special thanks to my paternal and maternal relatives for their generous support and encouragement throughout my degree program, God bless you all.

Finally to my pals, Goodhead “TopBoy” Boma, Jimmy Shakespen, Ajulo Praise, Bryan Peters, and all members of the Otaku Lounge, just to mention a few. Thank you all for your love and support all through the years . Arigato.

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ABSTRACT

This study assesses the risks associated with direct commercial real estate (CRE) investment in Benin City, Nigeria, focusing on Egor, Ikpoba Okha, and Oredo Local Government Areas. As the Nigerian real estate market matures, understanding the complexities and inherent risks in CRE becomes crucial for informed investment decisions. The research adopts a pragmatic philosophy, utilizing a mixed-methods approach that integrates qualitative and quantitative techniques. Data was collected through structured questionnaires, interviews, and document analysis, targeting key stakeholders including real estate investors, certified agents, property developers, financial analysts, and other built environment professionals.

Findings reveal that market risks—such as fluctuating demand and interest rates—are primary concerns, followed by economic risks (inflation, exchange rate fluctuations), environmental risks (flooding, erosion), legal risks (land disputes, zoning laws), social risks (tenant defaults, security concerns), and political risks. The study also identifies the prevalent risk assessment techniques applied by investors, including scenario analysis, brainstorming, Delphi techniques, decision tree analysis, and advanced methods like Monte Carlo simulations and Bayesian statistics.

Risk management strategies commonly employed include diversification of investment portfolios, engaging legal and financial experts, conducting due diligence, purchasing insurance policies, and adopting flexible lease agreements. The study further highlights challenges such as inconsistent government policies, lack of reliable data, and infrastructural deficits that hinder effective risk management.

Despite these limitations, the study recommends adopting advanced risk assessment tools, improving legal frameworks, fostering public-private partnerships, and leveraging technology

such as machine learning and blockchain to enhance transparency and risk prediction. These measures aim to create a more resilient commercial real estate market in Benin City, ultimately attracting local and foreign investors while promoting sustainable urban development.

This research contributes to the growing body of knowledge on CRE investment risks in emerging markets and offers valuable insights for policymakers, investors, and industry professionals seeking to navigate the complex landscape of Nigeria's real estate sector.

CHAPTER ONE

1.1 BACKGROUND OF THE STUDY

In recent years, commercial real estate (CRE) has developed greatly as Nigeria's real estate market has become increasingly mature and open and the diverse market environment for commercial real estate has been formed gradually. Compared with traditional real estate, CRE, with higher performance and risk, has some special characteristics, such as high integration, high correlation, large amount of investment and long development cycle. There is a large amount of risk factors in the process of commercial real estate development, such as changes in supply and demand, consumer preferences, adjustments of relevant policy, price fluctuation, and changes in exchange rates and interest rates, which all influence the return of investment in commercial real estate directly or indirectly. Emerging markets real estate performance is nowadays heavily affected by lack of investor confidence, risk perceptions, increasing cost of finance and market fundamentals. In turn, banks have looked away from real estate as their balance sheets are loaded with non-performing commercial real estate loans. Every commercial real estate whether direct or indirect investment carries risks, from macroeconomic trends to property quality. Property investors are usually interested in ascertaining the performance of prospective investment before taking investment decisions. They need information on returns and risk of different assets to take decisions on whether the assets have positive return potentials, risk reduction potentials, diversification potentials, risk adjusted returns, inflation – hedging potentials and other types of investment indicators. Generally, investment decisions are guided by risk characteristics and return characteristics (Akinsola, 2012).

The trick to maximizing the chance for a positive return in commercial real estate isn't to avoid risk, but to assess risk prior to making a purchase and proactively implementing real estate risk management strategies. A risk is that probable event that could lead to depreciation of the value of property or outright loss of investment (Clayton, 2007). The existence of such factors should not discourage an investor from investing but rather use the knowledge of commercial real estate risk analyst. However, Thilini & Wickramaarachchi (2019) viewed risk as the chance of an investment's actual return to be differed from the expected return. The primary risk in real estate investment in Nigeria is the possibility of falling into the hands of fraudsters. Fraudsters sometimes attempt to sell a property that does not belong to them. This is another source of issues for investors but could be eliminated by engaging the services of professionals to help investigate the title to the property that is being sought for purchase and to ensure that all the documents needed from the seller are prepared, signed and collected (Fisher, 2005). Another possible commercial real estate risk investors may face as a real estate investor in Nigeria is government or political risk. Because of the wide-ranging power of the executive arm of government and fluidity of functions, the government could acquire private land, but the land so acquired must be for public purposes. Unfortunately, there are several instances where government has acquired private land for "public purposes" and "development control" only to turn around and allocate to other individuals to use for their own private projects. Some have experienced their Certificate of Occupancy revoked by a new government because the owner does not belong to the same political party. This kind of policy inconsistency is a major discouragement to investors. However, whenever investors are planning to purchase a land in an area, engage professionals (such as certified Estate Surveyors and Valuers) to confirm whether the land is under acquisition by government or could or could not be sold (Black, 1986). At other

times, after government has acquired family lands and compensated the appropriate families, some of the traditional landowners still go ahead to sell portions of those lands to the unsuspecting public. Many people purchase such lands and begin to build without government building approvals. The implication of this, as many have painfully learnt, is that when government decides to take possession and pull down the structures on such lands, such a purchaser will not be compensated by government. It is also important to note that some areas have already been acquired or building developments in such areas already restricted (Syz, 2008). The Nigeria real estate sector lacks transparency and there is limited research and robust data on the performance drivers of underlying commercial real estate asset in investment portfolios as opposed to the residential and listed property sectors in the Nigeria context. It is important for investors in the industry to understand the factors that affect the sector's performance to be able to plan, review investment strategies, allocate resources efficiently, understand past trends and manage future risks.

Despite its inherent risks, CRE presents a compelling opportunity for investors. Not only does the sector provide many long-term investment benefits, including healthy income returns and a hedge against inflation, but fundamental factors such as the improvement of the risk/return characteristics of the overall mixed asset portfolio. The case for investing in commercial real estate looks particularly attractive when viewed in the context of the current market environment, although it is not without risk. Perhaps the most obvious reasons why commercial real estate merits inclusion in a management portfolio are derived from both cyclical and noncyclical factors – specifically, the favourable long-term outlook for real estate demand, from both users and investors, property cash flows and real estate's potential inflation hedging characteristics. The liquidity of commercial real estate provides investors the most efficient means to obtain

exposure to property markets globally. The ability to trade daily not only provides a useful tool for investors to create tactical allocations to the sector and global regions, but it also provides a means to efficiently re-balance allocations as market conditions change.

1.2 STATEMENT OF RESEARCH PROBLEM

Like other asset classes, commercial real estate risks and returns are closely correlated. The higher the risk, the higher the potential return and vice versa. It is very important for investors in commercial real estate to first ascertain the risk factors of an investment asset as good as possible before committing investment funds to such investment. Investors' informed decisions with respect to the risk and develop strategies of real estate investments to ensure profitability. Commercial real estate investment is usually rental properties intended to generate a return from rental income or capital appreciation. Commercial property types are office, retail, multi-family, industrial and hotel, self-storage, seniors housing and health care among others. Investments in these real estate assets are associated with multiple risk complexities which includes investment liquidity, asset value volatility, asset valuation inaccuracies, leverage-amplifying negative performance during falling markets, limited/ imperfect benchmarks to gauge closed-end fund performance, combination of a large lot size (capital intensive investments) and high transaction costs. However, the researcher will provide risk assessment criteria for direct commercial real estate investment in Nigeria with Benin City as the focal point in context of social, technological, environmental, economic and political factors. As high insecurity, inconsistency with government policy, fluctuating exchanging rate, high interest rate on finance, fuel subsidy removal and rising inflation rate at approximately 32.15% as reported by the Nigeria Bureau of Statistics (NBS) in the third quarter of 2024. These have prompted increases in market volatility,

due diligence has become more vital than ever in ensuring accurate forecasting and efficient risk mitigation for investors in the real estate markets in Nigeria.

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim of this study is assessing the risks on direct commercial real estate investment in Benin City, Nigeria. The objectives are:

i. Identifying the risks investors may have in direct commercial real estate investment in Benin City.
ii. Examining the techniques that have been applied in risk assessment of commercial real estate investment in Benin City.
iii. Determining the risk management strategies for commercial real estate investment practicable in Benin City.

1.4 RESEARCH QUESTIONS

1. What risks will investors consider in direct commercial real estate investment in Benin City?
2. What techniques have been applied in risk assessment on direct commercial real estate investment in Benin City?
3. What risk management strategies are practicable for commercial real estate investment in Benin City?

1.5 JUSTIFICATION OF THE STUDY

The study of the assessment of risks on direct commercial real estate investment in Benin City is significant for several reasons. Firstly, the study will enlighten investors globally on the risks that will be encountered while investing on commercial real estate in Benin City. This will be useful for policy makers, professionals in the built environment, financial institutions

(commercial and microfinance banks) and communities serving as location for real estate market. Secondly, the study will serve as a resource base to other scholars, researchers and risk analyst interested in investment analysis of commercial real estate properties within Benin city. The study will contribute to the existing body of knowledge on thee subject and provide a basis for further research.

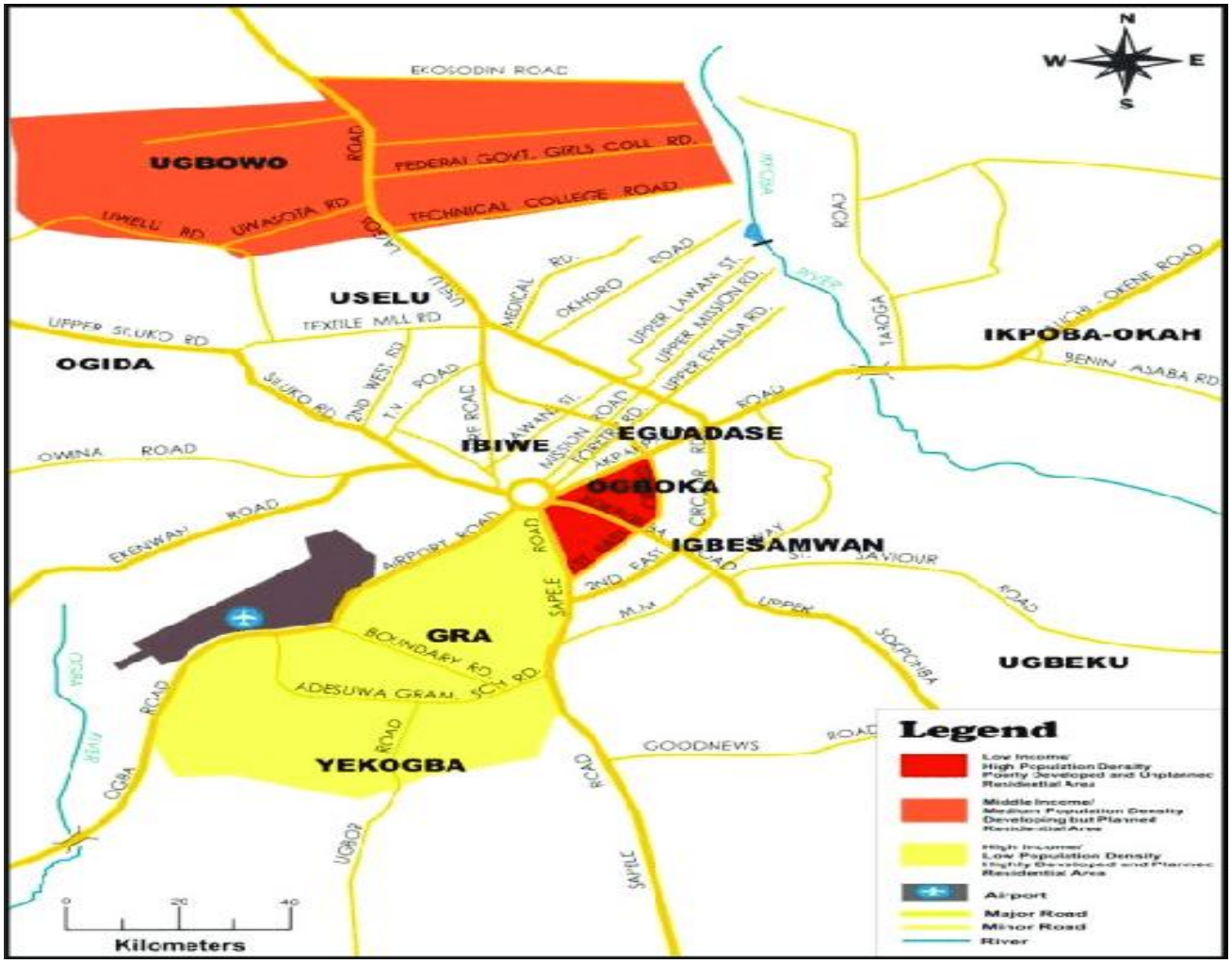
1.6 SCOPE OF THE STUDY

This study will be limited to Benin City which serves as the principal administrative and socio-economic centre for Edo State, Nigeria. Benin City is humid, and tropical, and is an urban settlement that comprises three major local government areas namely: Oredo, Egor, and Ikpoba Okha. The study will focus on the assessment of risks on direct commercial real estate investment in Benin City. The data collection will be solely on literature based. It will be collected referring to published, indexed Journal articles, conference papers and reports up to 2023. Critical review and descriptive review method will be used to analyse the data according to the chronological order. The study will make recommendation on assessing risks on direct commercial real estate investment.

1.7 THE STUDY AREA

Benin City serves as the principal administrative and socio-economic centre for Edo State, Nigeria. Benin City is humid, and tropical, and is an urban settlement that comprises three major local government areas namely: Oredo, Egor, and Ikpoba Okha. Benin City is a narrowed, key-shaped, north-to-south strip of land in West Africa. The area is about 1125m^2 and situated on flat land, about 8.5km above sea level. It is located between latitude 60 440^o N and 60 210^o N and longitude 50 350^o E and 50 440^o E. Benin-City is the center of Nigeria's rubber industry, and oil production is also a significant industry. The city is also linked by roads to Sapele, Siluko, Okene,

and Ubiaja and is served by air and the Niger River Delta ports of Koko and Sapele. The exodus of people from the crisis region (Northeast and Northwest of Nigeria) to the Edo State capital is responsible for the population increase has put pressure both on the public infrastructure and private real estate investment especially commercial real estate investment. The pressure manifest in form of heavy traffic and an upsurge in both residential and commercial property rents.



Source: (Asikhia, Eghagha, & Eyakwanor, 2016).
Figure 1: Showing the map of the study area.

1.8 DIFINITION OF TERMS

I. **ASSESSMENT:** Often refers to the evaluation of a property's value, condition, or suitability for a particular use. It can also involve determining risks or potential benefits related to an investment (Fisher, Martin, & Joseph, 1994).

II. **RISKS:** In commercial real estate, risks can include market volatility, economic downturns, regulatory changes, or unforeseen maintenance costs (Fabozzi & Peterson 2003)

III. **DIRECT COMMERCIAL REAL ESTATE:** The ownership, investment, or purchase of commercial properties (such as office buildings, retail spaces, warehouses, and industrial buildings) for income generation through leasing, development, or capital appreciation. It involves direct control and management of the real estate as opposed to indirect forms of investment like Real Estate Investment Trusts (REITs) or Exchange Trust Funds (ETF)

(https://www.investopedia.com/terms/c/commercialrealestate.asp)

IV. **INVESTMENT:** Refers to the allocation of resources, usually capital, with the expectation of generating income, profit, or value over time. In real estate, investment generally involves the purchase, ownership, management, rental, or sale of real estate properties for profit (Bodie, Kane, & Marcus, 2014).

CHAPTER TWO

LITERATURE REVIEW

Commercial real estate investments play a direct role in economic welfare, yet they are high-risk investments, especially in developing countries. If the risk factors directly affecting the investment objectives are not analysed correctly, financial losses are inevitable in commercial real estate investment (CREI) projects. Investor interest in property development in Nigeria

has increased because of the nation's urbanization, population growth, and rising need for residential and commercial real estate. However, there are several hazards associated with property development investing that could affect project profitability and investment returns.

2.0 COMMERCIAL REAL ESTATE

Commercial real estate as a form of real estate which is different from residence, combines real estate industry and commercial business to achieve the appreciation and profitability by means of the reproduction and the deep processing of real estate. Commercial real estate investments can be categorized into two main types: direct and indirect. Direct commercial real estate investment involves the direct acquisition and management of physical properties, such as office buildings, retail spaces, or industrial facilities. (Fan et al., 2018).

2.1 DIRECT COMMERCIAL REAL ESTATE INVESTMENT

Direct commercial real estate investment involves the direct purchase, ownership, and management of physical properties. This investment approach offers investors the opportunity to generate income through rents and potential capital appreciation, but also requires a significant upfront investment, as well as ongoing management responsibilities (Rattanaprichavej & Teeramungcalanon, 2020). Investors in direct commercial real estate must consider factors such as property location, tenant quality, and maintenance costs when making investment decisions. Examples of direct commercial real estate are: such as office buildings, retail spaces, hotels, warehouses, and industrial buildings among others.

2.1.1 INDIRECT COMMERCIAL REAL ESTATE INVESTMENT

Indirect commercial real estate investment, on the other hand, provides exposure to the real estate market without the need for direct property ownership. This approach typically involves investing in publicly traded real estate investment vehicles, such as Real Estate Investment Trusts (REITs), Exchange Trust Funds (ETF) or real estate stocks.

2.1.2 COMMERCIAL REAL ESTATE INVESTMENT MARKET

Commercial properties are real estate developments or use of land that entertain business operations and connote the highest form of return on real estate investment (Bello, 2003; Dugeri, 2011). In other words, they are properties that are not exclusively residential in which commercial activities takes place. The economic returns on these properties come in annually or as agreed by the parties involved. Commercial properties in Benin City consist of shops, offices, shopping centres, and mixed uses. The emphasis on location and market conditions by Nwanekezie (2018), Mfam and Kalu (2012), Bello (2003), and Dugeri (2011) further validates the importance of factors like proximity to central business districts and transport hubs, which

directly affect the profitability of CREI. The best commercial property investments are those located in central positions where the value can be said to reside in the site and not in the building itself. Commercial properties have been regarded as very secure investment with capital appreciation and few management difficulties. One of the major determinants of commercial real estate is location. Shops vary in size and type from the out-of-town supermarket through the good shopping centres. Other factors that determine the rental value of shops are the area of the frontage, layout for display of goods, condition of the property, sanitary arrangement and access to rear for delivery (Nwanekezie, 2018).

Office positioning is less crucial than shops. They need to be in areas that are served by good transport and other facilities, the precise position within the general locations is generally less important. The commercial property market in the study area is very active be it offices or shops and are usually in the Central Business District (CBD). Examples include Warri Sapele Road, Akpakpava, Ring Road, Airport Road, First, Second and Third East Circular Road, Forestry and Mission as they linked within the CBD.

2.2 THE CONCEPT OF RISK

Risk, in a business or investment context, is often defined as the possibility of deviations from expected outcomes, particularly financial returns. It represents a central concept in decision-making, especially in the real estate investment landscape, where it encompasses various unpredictable factors that can impact the lifecycle of an asset. Hargitay and Yu (1993) defined risk analytically in terms of the probability of loss, variance of returns, and deviations from expectations, offering a comprehensive framework for understanding risk in financial

investments. According to the definition of risk, risk is simply illustrated by the following equation:

$$Risk_n = P_n \, x \, l_n \qquad \textit{(Equation 1)}$$

Where P = Probability of loss

l = The significance of the loss

Real estate risk is inherently complex, as the sector is influenced by numerous external factors, such as market fluctuations, government policies, and economic conditions. The difference between risk and uncertainty has long been debated in academic literature. Byrne (1995), Byrne and Cadman (1996), and Kelliher and Mahoney (2000) highlighted that while risk is measurable, uncertainty stems from incomplete or imperfect information. Adair and Hutchison (2005) further defined real estate risk as the probability that a target rate of return will not be achieved, whereas uncertainty arises when outcomes and probabilities are unknown. In financial investments, risk is often expressed in terms of volatility, measured by the variance or standard deviation of returns. The use of variance and standard deviation as risk metrics allows for a quantifiable assessment of an investment's potential deviations from expected returns.

2.2.1 OBJECTIVE AND SUBJECTIVE RISK DEFINITION

Even though risks can be classified by their characteristics and causes, as described above, risks are also determined by the perceptions of developers or decision makers. Additionally, risk perception is arguably multidimensional, with a particular hazard meaning different things to different people and in different contexts. In some situations, risks are not only physical, but also social and organisational factors such as project management, risk management. Therefore, it

also means that risk perception can not only rely on mathematical or statistical calculations such as the probability and consequences of its occurrence, because risks are also caused by human, social and political phenomena. According to a Royal Society investigation, Pidgeon, et al. (1992) classified risk into the "objective" (or statistical) and "subjective" (or perceived) categories. By this classification, objective risk is specific, substantial, physically measurable or identifiable, and can be determined precisely by quantitative risk assessment.

Holton (2004) argued that risk definitions carry elements of subjectivity, depending on the nature of the investment and the context in which it is applied. Real estate investments are influenced by both quantifiable (objective) risks and perceived (subjective) risks. This subjectivity arises from factors such as investor experience, market conditions, and psychological responses to potential losses. As Spaulding (2008) noted, subjective risk can influence investor behaviour, particularly in speculative environments. Subjective risk may alter the behaviour of the risk taker if the potential outcome is relatively likely or highly undesirable. Subjective risk also involves the perception of the decision maker about the likelihood and consequence of the event.

2.2.2 CLASSIFICATION OF RISK IN COMMERCIAL REAL ESTATE INVESTMENT

In terms of risk classification, the literature offered diverse approaches. Hargitay and Yu (1993), Markowitz (1952) and Brown and Matysiak (2000) have categorized risks in real estate investment into two primary types: systematic and unsystematic risks. Baum and Crosby (2008) define risks in property investment as "total risk." Total risk itself is associated with several factors but can be subdivided into 2 major categories: "systematic" and "unsystematic" (or "specific") risk. It is simply described by the equation of:

Total risk = Systematic risk + Unsystematic risk. ***(Equation 2)***

Systematic risks are those that are external to the investor's control, such as changes in the broader economy, interest rates, or inflation. This means that the investors or developers are not able to control either the probability or the consequences of risk caused by broader economic and political issues. While unsystematic risks are specific to individual investments and can be mitigated through research and management practices. Therefore, Hargitay and Yu (1993) summarised the components that comprise the systematic and unsystematic risks. Systematic risks may involve the following:

i. Market risk or risk related to fluctuations in the market that the investors or developers intend to engage in.

ii. Cyclical risks or risks related to variations in the business cycle.

iii. Inflation or purchasing power risk or risks related to the uncertainty of the future purchasing power of the returns produced by the investments.

iv. Interest rate risk or risk related to the fluctuation of interest loan rates, particularly in real estate development, in which developers must loan large amounts of capital from banks or financial institutions. On the other hand, unsystematic or specific risks involve the following:

i. Business risk or risk associated with a company's business operations. The factors that influence risk are to do with the size of the company, product mix, competition and the general orientation of the management team in charge.

ii. Financial risk is dependent on the way the company or project's operations are financed. This includes the ratio of debt and equity that the company or the project holds, since the larger the debt finance, the larger the associated financial risk.

iii. Liquidity risk may be caused by the following aspects: the degree of difficulty associated with the realization of the capital invested; the divisibility and marketability of the asset; and the costs involved with the realization of the capital. In this regard, the liquidity risk also covers the risk caused by an illiquidity of project funding during project processing (Chen and Khumpaisal, 2008).

iv. Other specific risks which usually affect individual investment, such as location concentration, construction and execution risks.

Fraser (1993) highlighted that real estate risk also includes factors like liquidity, liability matching as property assets tend to be less liquid compared to other forms of investments, requiring longer time frames to sell and often affecting the overall return. Moreover, investors or developers can control the causes and consequence of such risks occurring in the invested project, because most unsystematic risks are caused by internal factors.

The European Group of Valuers' Associations (2012) provided a systematic classification of risks in real estate investments, including market risks, property-related risks (e.g., location, construction, tenants and leases risk), fiscal and legal risks, and financial risks. Though there has been a long debate in the literature on risk definition and classification, the operators of the real estate market still do not have specific methodologies for measuring risk, differently from other areas of financial investments. This circumstance is not due to lack of interest by real estate

operators, but to the difficulties of implementing tools developed for assessing risks in financial investments, which need to be adapted to the specificities of property investments.

Chen and Khumpaisal (2009) delved deeper into economic risks associated with commercial real estate development, identifying factors such as interest rates, market liquidity, property types, and capital exposure as critical in determining the overall risk profile of a real estate project. These economic risks can significantly influence the financial viability of a property throughout its lifecycle, from development through to its sale or continued operation.

One of the key insights in real estate risk literature is the emphasis on differentiating between objective (statistical) and subjective (perceived) risks. Objective risks, such as market volatility and interest rate changes, are quantifiable and can be measured using standard financial tools. On the other hand, subjective risks depend on individual perceptions and can vary widely based on personal experiences, psychological factors, and the specific context of the investment. For example, investors with previous losses may exhibit higher levels of risk aversion, which in turn can affect their decision-making processes.

In operational terms, the management of real estate risk involves a continuous balancing act between systematic and unsystematic risks. Developers and investors can control unsystematic risks to some extent by conducting thorough research on projects, management teams, and market conditions. However, systematic risks, driven by macroeconomic factors, remain outside the control of individual investors, underscoring the importance of diversification and careful risk management strategies in real estate investments. Chiara D'Alpaos and Rubina Canesi (2014) offered a comprehensive study on risk assessment in real estate investments, particularly during periods of economic instability, using Milan as a case study. Their research addressed various

types of risks that investors face when considering property investments, particularly in times of financial crisis, such as the 2008 global financial downturn. By focusing on the multifaceted nature of real estate risk, the authors highlighted the dynamic interplay between capital market conditions, property-specific factors, and macroeconomic variables. The study segmented real estate risks into different categories, providing quantitative models to assess these risks. These models are essential tools for investors to understand how different factors influence the overall risk of their investments. Key risks explored in the paper include Capital Market Risk (CMr), Valuation Risk (Vr), Market Growth Rate Risk (MGRr), Operating Risk (Or), Development Risk (Dr), Leasing Risk (Lr), Leasehold Risk (LHr), Leverage Risk (LVr), and Tax Risk (Tr). Each of these risks is defined and quantified using specific financial ratios and equations. They focused on economic risks as classified in Table 1.

Table 1 - RISKS' CLASSIFICATION:

CLASSIFICATION	**RISKS**	
Market Risks	CMr	Capital Market risk
	Vr	Valuation risk
	MGRr	Market Growth Rate risk
Real Estate Operating Risks	Or	Operating risk
	Dr	Development risk
	Lr	Leasing risk
	LHr	Leasehold risk
	LVr	Leverage risk
	Tr	Tax risk

Cited in (D'Alpaos & Canesi, 2014).

(A) **Capital Market Risk (CMr)** defines the asset's riskiness in relation to market rates and measures whether the asset's pricing aligns with capital market conditions. The calculation compares the average market capitalization rate (MCR) with the asset's capitalization rate (ACR). When the market capitalization rate is lower than the property investment's expected cap rate, the investment is conservative. Conversely, when the project's cap rate is lower than the market's, the investment tends to be riskier. The equation is:

$$CMr = \frac{MCR}{ACR} \qquad \textit{(Equation 3)}$$

(B) **Valuation Risk (Vr)** reflects whether an asset is overvalued, which could result in lower-than-expected returns upon maturity or sale. The factors contributing to this risk include incomplete data and market instability. The higher the reliance on an asset's residual value (as opposed to its cash flow), the greater the uncertainty. Vr is calculated as the ratio of the net present value (NPV) of residual proceeds to the asset's construction/acquisition cost (AP):

$$Vr = \frac{NPV}{AP} \qquad \textit{(Equation 4)}$$

(C) **Market Growth Rate Risk (MGRr**) assesses the likelihood of an asset's value increasing over time. This risk evaluates whether the growth rate of the asset exceeds market expectations, such as inflation. The risk is quantified by comparing the unlevered rate of return (UIRR) and the asset's capitalization rate (ACR) with the market growth rate (MGR):

$$MGRr = \frac{UIRR - ACR}{MGR} \qquad \textit{(Equation 5)}$$

(D) **Operating Risk (Or**) is linked to the probability of incurring losses due to fluctuations in demand or increasing operational costs. The risk is mitigated when tenants share expenses or when a triple net lease is implemented. The ratio used to calculate this risk compares the operating recoveries paid by the lessee (OOR) to total operating expenses (TOE):

$$Or = \frac{OOR}{TOE} \qquad \textit{(Equation 6)}$$

(E) **Development Risk (Dr**) arises when capital expenditures for land development or major redevelopment are uncertain in terms of returns. Investors must ensure that the return compensates for the risk taken in construction. The risk is calculated by comparing the net operating income (NOI) minus the asset capitalization rate (ACR) to the construction or renovation cost (CC):

$$Dr = \frac{(NOI - ACR)\ CC}{CC} \qquad \textit{(Equation 7)}$$

(F) **Leasing Risk (Lr)** evaluates the possibility that an asset's absorption of vacant space may not match market expectations, thereby affecting its overall investment potential. The calculation compares the square meters of rented space in a specific year (LUty) to the market demand absorption for that year (MAty), while factoring in property vacancy (BV) and market vacancy (MV):

$$Lr = \frac{LUty\ /\ MAty}{BV\ /\ MV} \qquad \textit{(Equation 8)}$$

(G) **Leasehold Risk (LHr)** measures the risk associated with lease terms that are above market rates, potentially inflating the purchase price of the property. This risk is calculated by comparing the gross rental income (GRI) to the average market rents (MR):

$$LHr = \frac{GRI}{MR} \qquad \textit{(Equation 9)}$$

(H) **Leverage Risk (LVr)** occurs when the cost of debt (KD) exceeds the return on the asset, creating a situation of negative leverage. This risk amplifies both the potential losses and gains depending on the ratio of debt to equity. Leverage risk can also be exacerbated if the loan-to-value ratio is too high, magnifying any losses during asset liquidation.

(I) **Tax Risk (Tr)** arises from uncertainties related to tax policies, which can lead to unforeseen financial outcomes for investors. This risk is particularly relevant in real estate investments, where tax strategies and regulatory environments can significantly impact profitability.

However, Gupta, Newell, Bajaj, and Mandal (2018) presented a comprehensive risk assessment framework for non-listed real estate funds in India, focusing on the multifaceted nature of risk in real estate portfolio management. Real estate investments, especially in non-listed funds, face a broad range of uncertainties that can affect performance. To better understand and manage these uncertainties, the authors identified 39 risk attributes, which they condensed into five key factors using factor analysis. These factors are further categorized into three levels of risk: macro, meso, and micro, aligning with market, enterprise, and property risk, respectively. Their paper employed factor analysis and Euclidean distance-based partitioning to simplify the complexities of real estate risks into a more manageable framework. This approach provides a structured methodology for assessing risks in non-listed real estate portfolios, offering investors and fund managers a systematic way to evaluate the diverse range of risks affecting their investments. The risk categorization includes:

i. Macro (Market) Risk:

The macro level includes risks that are influenced by external factors such as economic conditions, regulatory changes, and geopolitical uncertainties. These risks are generally beyond the control of individual enterprises but significantly affect the overall real estate market. Examples include interest rate fluctuations, inflation, and economic cycles. Gupta et al. argue that macro risks are crucial for real estate funds, particularly in emerging markets like India, where economic volatility is more pronounced.

ii. Meso (Enterprise) Risk:

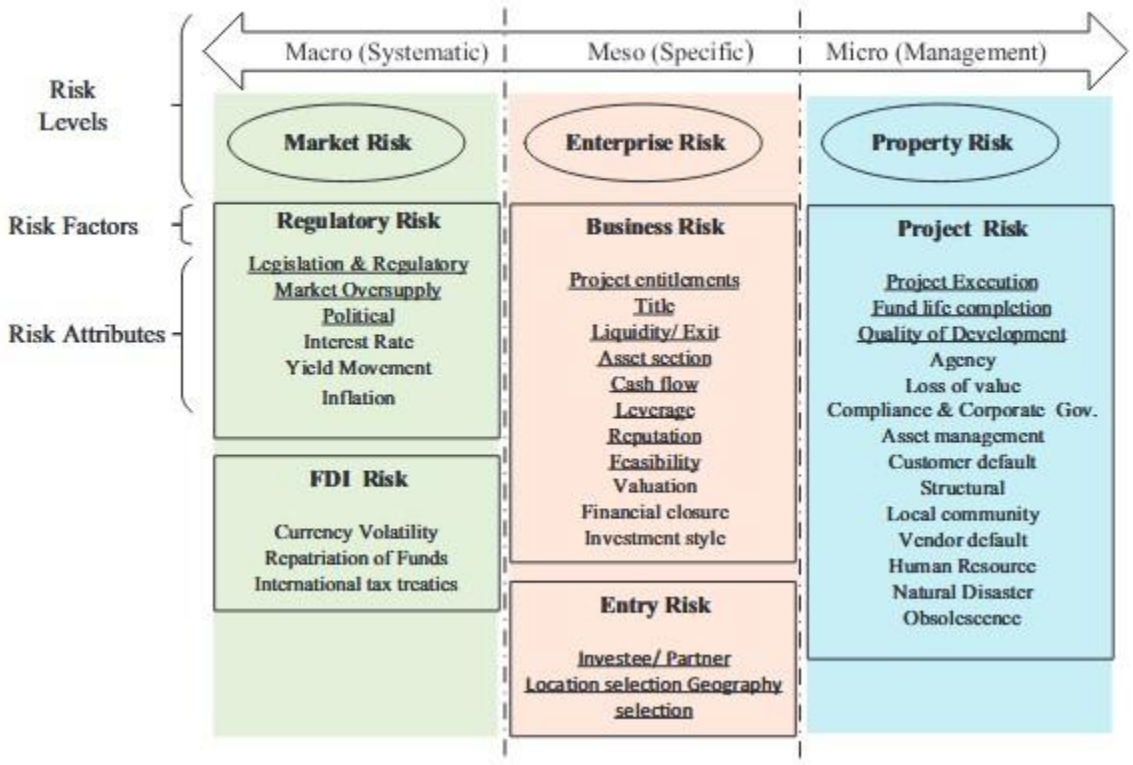
Enterprise-level risks, or meso risks, are those specific to the organization or fund managing the real estate portfolio. These include governance, operational efficiency, financial management, and organizational reputation. Enterprise risks are influenced by internal policies, strategic decisions, and operational processes. In the context of non-listed real estate funds, factors like fund governance, investment strategy, and the managerial competence of the fund play significant roles in shaping these risks.

iii. Micro (Property) Risk:

At the micro level, property-specific risks are considered, which focus on individual real estate assets within the portfolio. These risks include property location, tenant risk, lease structure, and the physical condition of the property. Property-specific risks are unique to each asset and are influenced by local market conditions, tenant behaviour, and property management effectiveness. Gupta et al. emphasize that these risks are often more predictable and manageable compared to macro risks but still require careful attention in portfolio management.

The 39 risk attributes identified by Gupta et al. as seen in figure 2 were grouped into five factors, which were then assigned to different "risk bands" using Euclidean distance. This statistical

approach allowed the authors to partition risks into clusters, simplifying the overall risk profile of non-listed real estate funds into digestible bands. This method helps fund managers prioritize and address risks more efficiently, ensuring that resources are allocated to manage the most significant threats to portfolio performance.



Source: Gupta *et al.* (2018)
Figure 2

In consonance with Gupta et al. (2018), D'Alpaos and Canesi (2014), Chen and Khumpaisal (2009), and others, risk in real estate investment can be classified into systematic, specific, and management risks. This classification aligns with Keeris (2008), who built on Markowitz's (1952) modern portfolio theory. Systematic risks, such as market volatility, are external and unavoidable, as discussed by Gupta et al. and Brown & Matysiak (2000). Specific risks, highlighted by D'Alpaos and Canesi, focused on property-level risks like valuation, operational, and

development uncertainties. Similarly, Baum and Crosby (2008) and the European Group of Valuers' Associations (2012) recognized risks related to asset management and market growth.

Chen and Khumpaisal (2009) stressed the importance of integrating financial, environmental, and technical risks in decision-making. Hargitay and Yu (1993) emphasized management risks, including governance and operational efficiency, which are crucial in both property and portfolio performance. These studies collectively support a comprehensive risk classification framework that is instrumental for identifying risks in direct commercial real estate investments, such as those in Benin City, Nigeria. This study seeks to fill a knowledge gap by applying this framework to assess localized risks specific to Nigeria's real estate market, providing insights for investors and policymakers in managing risk effectively.

2.3 RISK ASSESSMENT TECHNIQUES IN COMMERCIAL REAL ESTATE INVESTMENT

Risks are associated with every investment; real estate development, as an investment, is not an exception. The most significant risk and uncertainty towards investment return is the income stream. (Khumpaisal, et al., 2010). In the case of using the risk assessment techniques, investors, risk analyst and project managers rely on information gained from panel/board discussion, which is associated with their experience in identifying or classifying predictable risk events and setting up the Risk assessment models (Khumpaisal, 2007). Here are various techniques that can be used to assess both systematic and non-systematic risks in the real estate industry. Most developers use qualitative analysis methods used to measure social related risks (Chen & Khumpaisal, 2009) and rely on non-systematic assessment techniques such as panel discussion or use their own background experiences (Gehner et. al, 2006; Khumpaisal, 2009).

Each method is designed to address specific aspects of risk, and their application depends on the context and the complexity of the project.

2.3.1 Brainstorming

Brainstorming involves stimulating and encouraging free-flowing conversation amongst a group of knowledgeable people to identify potential failure modes and associated hazards, risks, criteria for decisions and/or options for treatment. The term "brainstorming" is often used very loosely to mean any type of group discussion (Anon., 2020) However, true brainstorming involves qualitative techniques to try to ensure that each member's imagination is triggered by the thoughts and statements of others in the group. Brainstorming can be used in conjunction with other risk assessment methods described below or may standalone as a technique to encourage imaginative thinking at any stage of the risk management process and any stage of the life cycle of a system (Valis & Koocky, 2009). It may be used for high-level discussions where issues are identified, for more detailed review, or at a detailed level for problems. According to Khumpaisal & Chen, (2009), risks in each commercial real estate development can be identified at project management level, using brainstorming techniques. This technique is being applicable to risk assessment in real estate industry.

2.3.2 Delphi Technique

The Delphi technique is a procedure to obtain a reliable consensus from a group of experts. Although broadly used to mean any form of brainstorming, an essential feature of the Delphi technique, is that experts expressed their opinions individually and anonymously while having access to the other expert's views as the process progresses. The Delphi technique can be applied at any stage of the risk management process or at any phase of a system life cycle, wherever a

consensus of views of experts is needed (Scheele, 1975). To explore the activities that constitute the body of knowledge of real estate practitioners to represent practice better so that, practice can be improved, and real estate education can be aligned with industry requirements using a modified Delphi technique with a panel of real estate experts practicing in the United Kingdom (Boyd, et al., 2020). Further, this is suitable for following cases too (Dagen, et al., 2019)

•Delphi has legitimacy and suitability for solving highly complex problems

• Delphi is flexible and well suited when there is incomplete knowledge about phenomena; especially when the goal is to improve the understanding of problems, opportunities or solutions, or to develop forecasts.

• Delphi is appropriate for exploring areas in which controversy, debate or a lack of clarity exist and

• it is also an acceptable substitute for direct empirical evidence when the latter is unavailable Brainstorming, Nominal Group Technique, and the Delphi technique provide a structured format that helps increase the quantity and quality of participant responses as individuals (McMurray, 1994) whereas a brainstorming session is known for interactive group meetings. (Mulder, 2017). This method is being applicable to risk assessment in real estate industry.

2.3.3 Checklists

Checklists are lists of hazards, risks or control failures that have been developed, usually from experience, either because of a previous risk assessment or because of past failures. A checklist can be used to identify hazards and risks or to assess the effectiveness of controls. Inspectors will verify and inspect the real estate investment risk management systems of insurance companies

using the Risk Management Systems Checklists (Common Items). In recently, checklist used to stay on top of all the tasks in a real estate transaction and include any due diligence and contingency deadlines (Brien, 2020). However, it has some weaknesses such as, it is a non-graphical representation. developing a comprehensive checklist may be difficult; cannot provide a quantitative value associated with each risk as well as can not consider historical information and lessons learned from previous (Martin, 2018)

2.3.4 Event Tree Analysis (ETA)

ETA is a graphical technique for representing the mutually exclusive sequences of events following an initiating event according to the functioning/not functioning of the various systems designed to mitigate its consequences. It can be applied both qualitatively and quantitatively. ETA can be used for modelling, calculating, and ranking (from a risk point of view) different accident scenarios following the initiating event. It may be used qualitatively to help brainstorm potential scenarios and the sequences of events following an initiating event and how outcomes are affected by various treatments, barriers or controls intended to mitigate unwanted outcomes (Valis & Koocky, 2009). As a result, technical risks and economical losses of property can be minimized based on these risk analysis tool (Hong et; al, 2009) therefor, this method also suitable for the risk assessment in real estate sector.

2.3.5 Cause-Consequence Analysis

Cause-consequence analysis is a combination of fault tree and event tree analysis. The causes of the conditions or failures are analysed by means of fault trees. Cause-consequence analysis was originally developed as a reliability tool for safety critical systems to give a more complete understanding of system failures. Like fault tree analysis, it is used to represent the failure logic

leading to a critical event, but it adds to the functionality of a fault tree by allowing time sequential failures to be analysed. The method also allows time delays to be incorporated into the consequence analysis, which is not possible with event trees (Valis & Koocky, 2009).

2.3.6 Cause-and-Effect Analysis

Cause-and-effect analysis is a structured method to identify possible causes of an undesirable event or problem. It organises the possible contributory factors into broad categories, so that all possible hypotheses can be considered. It does not, however, by itself point to the actual causes; since these can only be determined by real evidence and empirical testing of hypotheses (Valis & Koocky, 2009). It is valuable at the beginning of an analysis to broaden thinking about possible causes and then to establish potential hypotheses that can be considered more formally. Risk Assessment for Uzun Construction and Real Estate Company in TRNC the analysis of these results to clarify the cause and effect of each professional to keep an eye on a systematic sequence. According to that, this technique is being applicable to risk assessment in real estate industry.

2.3.7 Scenario Analysis (SA)

It can be used to identify risks by considering possible future developments and exploring their implications. The power of scenario analysis is illustrated by considering major shifts over the past 50 years in technology, consumer preferences, social attitudes, etc. Scenario analysis can not predict the probabilities of such changes but can consider consequences and help organisations develop strengths and the resilience needed to adapt to foreseeable changes. Real estate investors commonly conduct a real estate analysis for rental income properties they are considering selling or to purchase to help them make the most profitable investment decision. A Rent Scenario

Analysis provides investors one such evaluation method (Kobzeff, 2018) so, this technique is being applicable to risk assessment in real estate industry.

2.3.8 Decision Tree Analysis

A decision tree represents decision alternatives and outcomes in a sequential manner that considers uncertain outcomes. It is like an event tree, in that it starts from an initiating event or an initial decision and models different pathways and outcomes because of events that may occur and different decisions that may be made (Valis & Koocky, 2009). Some articles describe the relationship between construction permit uncertainties and real estate development projects by using the Decision Tree Analysis (DTA) approach together with Monte Carlo simulations (Basdogan, et al., 2018). Therefore, this technique is used in qualitative and quantitative analysis.

2.3.9 Human Reliability Assessment (HRA)

Human reliability assessment (HRA) deals with the impact of humans on system performance and can be used to evaluate human error influences on the system. Many processes contain potential for human error, especially when the time available to the operator to make decisions is short. The probability that revealing ways in which these errors and other failures (hardware and software) can be "recovered" by the human operators and maintenance personnel. HRA can be used qualitatively or quantitatively. Qualitatively, it is used to identify the potential for human error and its causes so the probability of error can be reduced. Quantitative HRA is used to provide data on human failures into FTA or other techniques (Valis & Koocky, 2009).

2.4 Other Possible and Applicable Techniques: Each technique's strengths, weaknesses, applicability, and type of data used (quantitative or qualitative) are presented in Table 2.

Table 2: POSSIBLE AND APPLICABLE TECHNIQUES:

TECHNIQUE	STRENGTH	WEAKNESS	APPLICATION	DATA TYPE
Bow Tie Analysis	Simple visual representation of risks and controls.	Can oversimplify complex systems, leading to a lack of detail.	Useful in identifying and mitigating risks in real estate projects.	Qualitative
Reliability-Centred Maintenance (RCM)	Focuses on critical components to improve system reliability.	Time-consuming and requires significant expert knowledge.	Real estate asset management to prioritize maintenance efforts.	Quantitative and qualitative
Sneak Analysis (SA) & Sneak Circuit Analysis (SCA)	Identifies hidden design flaws not captured by traditional risk methods.	Limited applicability outside of electronic or mechanical systems.	Applicable in large real estate developments with technical systems.	Quantitative
Markov Analysis	Model's complex systems and accounts for probabilistic changes over time.	Assumes constant transition probabilities, which may not always hold true.	Suitable for assessing future states of real estate investments under uncertainty.	Quantitative
Monte Carlo Simulation	Provides probabilistic risk estimates based on a	Requires extensive data and can be computationally expensive.	Effective for modelling financial risks and forecasting real	Quantitative

	wide range of scenarios.		estate market volatility.	
Bayesian Statistics and Bayes Nets	Incorporates prior knowledge with new data for dynamic risk assessment.	Can be complex to implement and interpret without advanced statistical knowledge.	Applicable in decision-making processes involving real estate investment uncertainties.	Quantitative and qualitative
Frequency-Number (FN) Curves	Visual representation of the frequency and magnitude of risk events.	Can be difficult to interpret for non-experts.	Applied in environmental risk assessments like flooding in real estate projects.	Quantitative
Risk Indices	Allows for comparative risk evaluation using a single number.	Can oversimplify risks and fail to capture nuanced differences.	Useful in ranking different real estate investment opportunities.	Quantitative
Consequence/Probability Matrix	Easy to use and understand; helps prioritize risks based on impact and likelihood.	Can oversimplify or overlook interdependencies between risks.	Applicable in real estate project management for prioritizing risks.	Qualitative
Cost/Benefit Analysis (CBA)	Straightforward comparison of costs and	May not capture intangible risks like social or	Used for financial decision-making in real estate	Quantitative

	benefits of risk mitigation strategies.	environmental factors.	investments.	
Learning Curve Entropy (Duffey/Saul Approach)	Incorporates learning from past risk events to improve future performance.	Limited to environments where learning from repetitive tasks is applicable.	Useful in long-term real estate operations and management.	Quantitative

Source: Valis & Koocky (2009).

Each of these methods plays a critical role in assessing risks in CREI, depending on the complexity and type of investment. Techniques like brainstorming and checklists may be suited for simpler projects, while more structured methods like the Delphi technique and event tree analysis are better for large-scale or highly uncertain investments. Employing a combination of these techniques can provide a robust framework for managing real estate risks, particularly in markets like Benin City, where commercial real estate development is growing but also faces significant risk from economic and social factors.

2.5 RISK MANAGEMENT STRATEGIES IN COMMERCIAL REAL ESTATE INVESTMENT

Risk management in commercial real estate investment is a critical field of study, as it directly impacts the sustainability and profitability of the investment or development projects. This study synthesizes various theoretical perspectives, frameworks, and practical approaches to risk management in the real estate sector, particularly in the context of commercial real estate investment. Several key elements emerge from the literature, including the identification,

analysis, and control of risks, alongside the application of structured frameworks for effective risk mitigation.

2.5.1 DEFINITION OF RISK MANAGEMENT.

Risk management is broadly defined as a systematic approach to identifying, assessing, and addressing uncertainties in any venture, and it is particularly relevant in real estate investment due to the high capital costs and long-term nature of projects. Berg (2010) described risk management as setting the best course of action under uncertain conditions, while Wiegelmann (2012), drawing from DeLoach (2000), frames it as a structured and disciplined process that aligns strategy, processes, and technology to manage risks and create value. This perspective underscores the importance of integrating risk management into the strategic and operational facets of commercial real estate development.

In real estate, the need for comprehensive risk management strategies is underscored by the high levels of uncertainty that can arise from market fluctuations, regulatory changes, environmental factors, and project-specific challenges (Aduda & Gitonga, 2011; Botha, 2013). The application of robust risk management models can mitigate these uncertainties, ensuring the successful completion of projects and minimizing financial losses (Isaac & Navon, 2009).

2.5.2 RISK MANAGEMENT FRAMEWORKS.

Several risk management frameworks are applied in the commercial real estate sector. The most widely recognized is the COSO (2004) Enterprise Risk Management (ERM) framework, which consists of eight interrelated components: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication,

and monitoring. COSO's ERM model is comprehensive and emphasizes the importance of aligning risk management strategies with organizational objectives.

In addition to COSO, the Project Management Institute (PMI) (2013) offered a project-specific risk management framework that includes risk identification, qualitative and quantitative risk analysis, risk response, and risk control. These frameworks are essential in real estate as they provide a structured approach to addressing the risks inherent in development projects, from planning through execution.

While COSO and PMI frameworks are frequently cited, there is no established national risk management standard in Nigeria, which creates a gap in uniformity across the country's commercial real estate sector. Zavadskas, Turskis, and Tamošaitiene (2010) emphasized that adopting a risk management framework tailored to local contexts, such as Ghana or Nigeria, could contribute significantly to the success of property development projects.

2.5.3 RISK MANAGEMENT PROCESS IN COMMERCIAL REAL ESTATE.

The risk management process in commercial real estate typically involves four main steps: risk identification, risk analysis, risk response, and risk monitoring (Makui et al., 2010).

i. **Risk Identification and Classification**: Risk identification is the first and arguably most critical stage of the risk management process. Banaitiene et al. (2011) highlighted the importance of this stage, noting that effective risk identification establishes the foundation for subsequent analysis and response strategies. Several methods are used to identify risks, including qualitative and quantitative approaches such as brainstorming sessions, interviews, stakeholder analysis, and SWOT analysis (Gehner, 2008).

ii. **Risk Analysis**: Once risks are identified, they must be analyzed to understand their potential impact on the project. Risk analysis can be performed qualitatively or quantitatively. Qualitative analysis prioritizes risks based on their potential to impact project outcomes, often using tools like risk matrices or influence diagrams. Quantitative analysis, on the other hand, attempts to estimate the probability and consequences of risks using methods such as sensitivity analysis, scenario analysis, and Monte Carlo simulations (Byrne & Cadman, 1984; Raftery, 1994; Modarres, 2006).

iii. **Risk Response**: The response phase is where strategies to mitigate identified risks are implemented. Common responses include avoidance, transfer (e.g., through insurance), mitigation, and acceptance. This stage is crucial in reducing the exposure to risks and ensuring that potential disruptions are minimized (Cagliano et al., 2015). However, this stage is often underdeveloped in practice, leading to suboptimal risk management outcomes.

iv. **Risk Monitoring**: The final step involves continuous monitoring of identified risks and the effectiveness of implemented responses. Effective monitoring ensures that risks are managed proactively and that any new risks are swiftly addressed (Saunders et al., 2015).

In the literature on risk management strategies for commercial real estate investment (CREI), a notable knowledge gap existed regarding localized frameworks, particularly for emerging markets like Benin City, Nigeria. While several authors provided valuable insights into risk assessment, their studies predominantly focus on developed countries, thereby neglecting the unique challenges faced in Benin City. Khumpaisal et al. (2010) emphasized the assessment of income streams as a primary risk; however, their work is rooted in stable economies, unlike the volatile income streams characteristic of the study area due to local economic instability and

underdeveloped infrastructure. Chen and Khumpaisal (2009) employed qualitative techniques for social risk assessment that may not capture the complexities prevalent within context of Benin City's cultural and regulatory environment. Gehner et al. (2006) investigated non-systematic risks within established regulatory frameworks in Western Europe, whereas Benin City's dynamic political and environmental factors necessitate alternative risk management approaches. Boyd et al. (2020) advocated for the Delphi technique, which relies on a well-developed expert pool, a resource that is scarce in Benin City, thereby limiting its applicability. Hong et al. (2009) utilized event tree analysis (ETA) to manage risks primarily in Asian markets, this which is not in consonance with the critical environmental factors such as flooding prevalent in Benin City. This oversight highlights the need for risk assessment models that integrate local environmental challenges.

While the various studies contribute significantly to the understanding of risk management in CREI, their limitations in applicability to Benin City underscore the urgent need for localized frameworks. The study attempts to address this gap, thereby enlightening real estate investors, developers, risk analyst and financial institutions in Benin City with a tailored tools to navigate the distinct socio-economic and environmental risks they face, especially in light of regulatory uncertainties and climate change impacts. Developing such frameworks will enrich the body of knowledge and enhance the resilience of real estate investments in Nigeria's emerging markets.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Philosophy

The study adopts a pragmatic philosophy, combining qualitative and quantitative approaches to address the research problem. Pragmatism emphasizes practical problem-solving and flexible methodologies to explore the assessment of risks in direct commercial real estate investment in Benin City.

3.2 Research Approach

A mixed-methods approach was chosen, integrating qualitative and quantitative methods to provide a comprehensive understanding. Qualitative techniques like interviews, focus group discussions, and document analysis explore socio-economic impacts, while quantitative surveys and questionnaires collect statistical data on the extent and implications of vandalism.

3.3 Research Methods

3.3.1 Exploratory Case Study

Investigates the risk assessment of direct commercial real estate investments within its real-life context (Yin, 2009).

3.3.2 Data Collection

Includes structured questionnaires, interviews, Likert-scale surveys, and observation. Secondary data sources, such as books, journals, and reports, were also analyzed.

3.3.3 Sampling

The Simple random sampling techniques was used in were identified through the Nigerian Institution of Estate Surveyors and Valuer (NIESV) directory alongside Association of Estate Agents of Nigeria (AEAN), Real Estate Developers of Nigeria (REDAN), the Nigerian institute of Architects, Land Surveyors and Financial Institution. A total sample size of 100 respondents was targeted.

3.3.4 The Population of Study

Ekenta (2010) defined population as the aggregate of all cases: persons, objects, ideas or organizations which posses' certain attributes or conform to a set of designated specification. Population defines the limits within which the research findings are applicable and generalizable. A population can be classified into two; target and accessible population. The simple random approach was utilized to select the stakeholders in direct commercial real estate investment in the study area (Egor, Ikpoba Okha and Oredo)

Table 3.2: Population of Study Area

Stakeholders in the study area	**Frequency**
Real Estate Investors	20
Certified Real Estate agent/Valuer	20
Property developer	20
Financial analyst	20
Other (Building, Architect)	20
Total	**100**

Field survey

Accordingly, the sampled practicing professionals in Benin City were identified from the directory of the Association of Professional Bodies in Nigeria 2021 Edo State directory alongside the Nigerian Institution of Estate Surveyors and Valuers in Edo State (2024) directory. These professionals were selected purposively based on years of experience.

3.3.5 Sample Size

Guest, Bunce and Johnson (2006) comments succinctly sum up the situation; she observed that "saturation is the key to excellent qualitative work," but at the same time noted that "there are no published guidelines or tests of adequacy for estimating the sample size required to reach saturation". Research that is field oriented in nature and not concerned with statistical generalizability often uses non-probabilistic samples. The most commonly used samples, particularly in applied research, are purposive (Akujuru, 2014). The common element in all purposive sampling techniques is that participants are selected according to predetermined criteria relevant to a particular research objective. Morse (1995) as cited by Guest *et al.*, (2006) outlined more detailed guidelines. She recommended at least six participants for phenomenological studies; approximately thirty-fifty participants for ethnographies, grounded theory studies, and ethno-science studies; and one hundred to two hundred units of the item being studied in qualitative ethology. Creswell's (1998) ranges are a little different. He recommended between five and twenty-five interviews for a phenomenological study and twenty-thirty for a grounded theory study. Kuzel (1992) tied his recommendations to sample heterogeneity and research objectives, recommending six to eight interviews for a homogeneous sample and twelve to twenty data sources "when looking for disconfirming evidence or trying to achieve maximum variation". The population of the study area formed the sample size.

The sample target consisted of 100 respondents (comprising real estate investors, certified real estate agent/valuer, property developer, financial analyst and Other (Building, Architect) targeting 50 males and 50 females aged between 18 to 60 years and above, applying demographic information like age, sex, educational qualifications, occupation. The selection of professionals is restricted to Benin City because the case study Egor, Ikpoba Okha and Oredo are the three Local Government Area found within administrative center of Edo State capital. Questionnaires were mostly structured questionnaires and were pre tested before issued to the respondents.

3.4 Data Analysis

3.4.1 Qualitative Analysis

Thematic and inductive analysis techniques were applied to interview transcripts, observations, and written documents to extract patterns and insights.

3.4.2 Quantitative Analysis

Survey responses were analyzed using Microsoft Excel for systematic evaluation.

3.5 Validity and Reliability

The questionnaire was validated by experts and tested for reliability using Cronbach Alpha (0.757), ensuring consistency in responses across diverse demographic groups. The questionnaire was designed using google form and distributed to respondent's electronic mail box (email) with subsequent telephone call and face-face interviews to clarity on their understanding of risk assessment of direct commercial real estate investment in the study area.

3.6 Tools and Techniques

Microsoft Excel was used for quantitative data analysis, while interviews and observations supplemented qualitative insights, ensuring a robust exploration of the research problem.

CHAPTER FOUR

ANALYSIS AND PRESENTATION OF DATA

This chapter deals with the presentation and analysis of data from the research questions stated in this study. The data and result of each research question are presented in tables and chart.

Quantitative data analysis assembled responses from the questionnaires administered on the sample size of four hundred population of stakeholders in commercial real estate investment in Benin City. The population comprise of professionals in Benin City comprising certified real estate appraisers, real estate investors, property developers, financial analyst and other professionals in the built environment. The researcher targets the association of estate agents of Nigeria (AEAN), real estate developers' association of Nigeria (REDAN), the Nigerian institution of estate surveyors and valuers (NIESV) Edo State branch, the Nigerian institute of Architects, Land Surveyors and Financial Institution.

An electronic questionnaire designed with google form was distributed through emails to the targeted population of one-thousands personnel involved in commercial restate investments. In this study, the researcher targeted a population of 1,000 professionals in the built environment, with an accessible population of 300 persons. A simple random sampling technique was employed to ensure fairness in questionnaire distribution. The researcher distributed 100 questionnaires via email to financial analysts, builders, estate surveyors and valuers, real estate investors, property developers, and other stakeholders. Out of the 100 distributed, 80 were retrieved, representing the response rate, while 69 were accurately completed and deemed usable for analysis.

4.1 Mathematical Computation:

Response Rate= (Retrieved Questionnaires ÷ Distributed Questionnaires) × 100

= (80 ÷ 100) ×100 = 80%

Completion Rate = (Valid Questionnaire ÷ Retrieved Questionnaire) × 100

= (69 ÷ 80) × 100

= 86.25%

From the calculations, the response rate was 80%, indicating a good level of participation. The completion rate was 86.25%, demonstrating a high level of engagement from respondents. The final valid sample size (69 respondents) constituted 23% of the accessible population and 6.9% of the total targeted population. This sample size is statistically relevant for drawing inferences about professionals in the built environment sector.

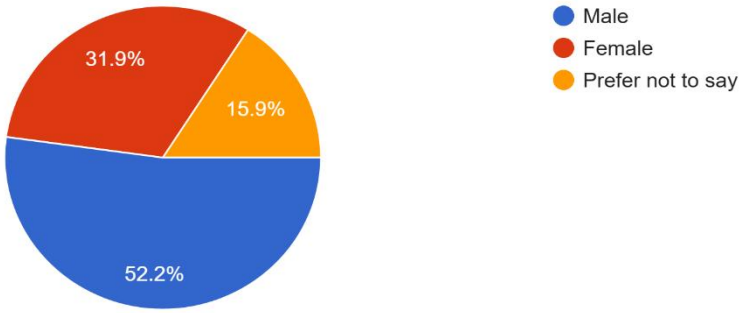
4.2 Socio Demographic Distribution of Respondents

Table 4.2: Socio demographic distribution of respondents based on gender

Variable		Frequency	Percent
Gender	Male	36	32
	Female	22	52
	Prefer not to say	11	16
	Total	69	100

Source: Researcher's Field survey (2025)

Distribution of Respondents based on Gender



Source: Researcher's Field survey (2025)
Figure 4.1 shows Socio demographic distribution of respondents based on Gender

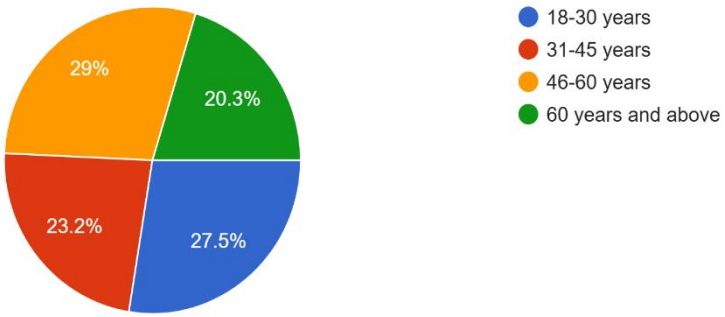
Table 4.2: Socio demographic distribution of respondents based on Age group

Variable		Frequency	Percent
Age Group	18 – 30 years	19	28
	31 – 45 years	18	23
	46 – 60 years	20	29
	60 years and above	14	20
	Total	69	100

Source: Researcher's Field survey (2025)

Table 4.2 shows that age group !8-30 has 19 respondents, age group 31-45 has 18 respondents, age group 46-60 has 20 respondents, age group 60 years and above has 14 respondents.

Distribution of Respondents based on Age



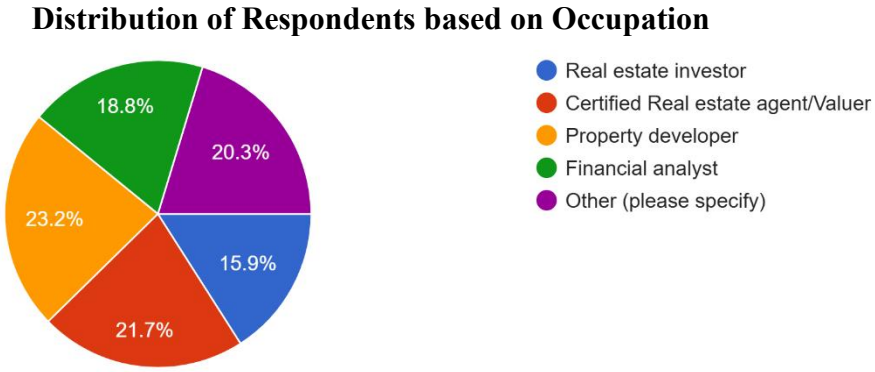
Source: Researcher's Field survey (2025)
Figure 4.2 shows Socio demographic distribution of respondents based on Age Group

Table 4.3: Socio demographic distribution of respondents based on Occupation

Variable		Frequency	Percent
Respondents	Real Estate Investors	11	16
	Certified Real Estate agent/Valuer	15	22
	Property developer	16	23
	Financial analyst	13	19
	Other (Building, Architect)	14	20
	Total	69	100

Source: Researcher's Field survey (2020)

Table 4.3 shows the Socio demographic distribution of the respondents based on their Occupation.



Source: Researcher's Field survey (2025)

Figure 4.3 shows Socio demographic distribution of respondents based on Occupation.

Table 4.4: Commercial real estate type invested by respondents in Benin City

Commercial Property Type	Local Government Area			
	Egor	Ikpoba Okha	Oredo	Grand Total
Amusement Park	1	1		2
Apartment Building	1			1
Bar	1		1	2
Bar	1		1	2
Bar and Restaurant		1	1	2
Cinema	1		2	3
Event Center	2		1	3
Filling Station	1			1
Filling Station		1	4	5
Game Center		1		1
Garden		2		2
Hotel	1		1	2
Hotel		1		1
Hotel and Restaurant			1	1
Lounge	1			1
Nightclub		1	3	4
Office	3	1	2	6
Restaurant		1	1	2
Restaurant	2	2	1	5
Restaurant	1	2		3
Shop	2	1	2	5
Shopping mall	2	1	5	8
Showroom		1		1
Showroom	1	1	1	3
Spa			1	1
Student Hostel	1		1	2
Grand Total	**22**	**18**	**29**	**69**

Field survey (2025).

Table 4.4 shows the commercial property in the study areas (Oredo, Egor And Ikpoba Okha).

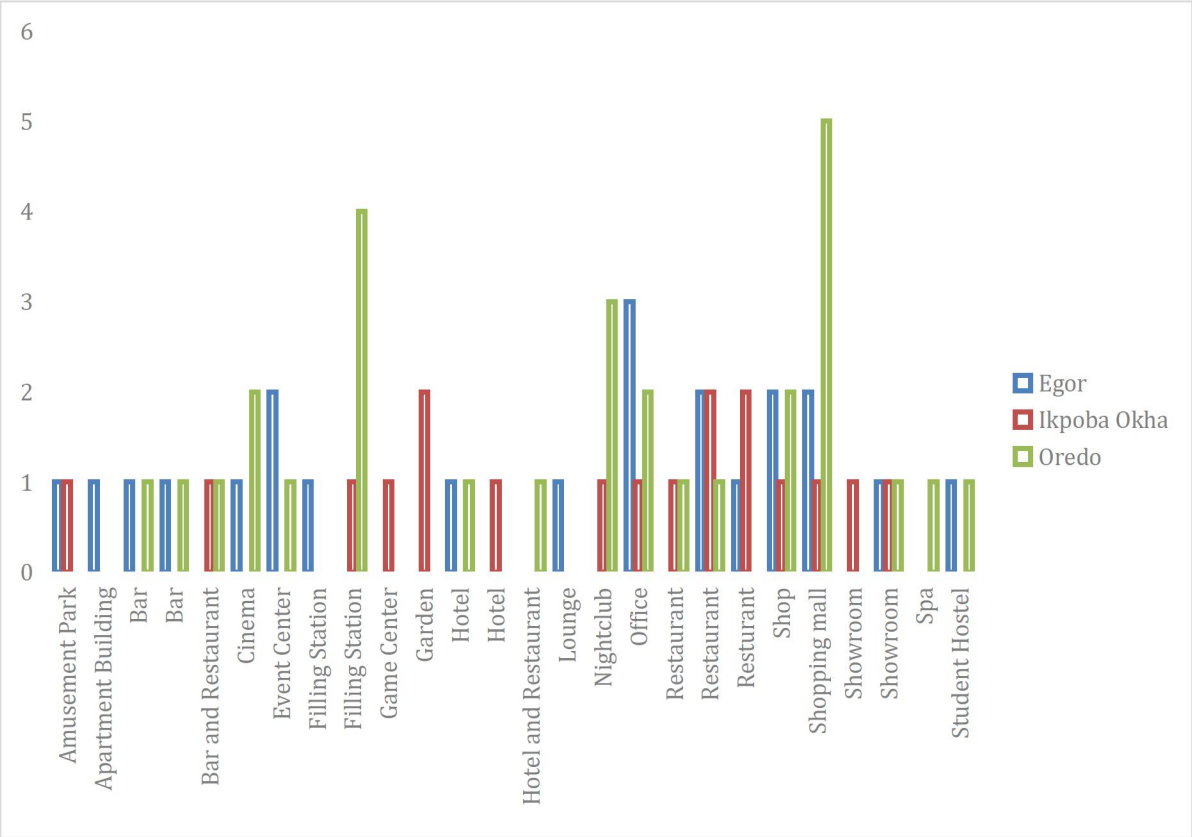
Egor has

Table 4.5: Commercial real estate type invested by respondents in Benin City

Classification of CRE Investment	Frequency
Hospitality and Entertainment	37
Mixed-Use Properties	3
Office Spaces	6
Retail Properties	18
Specialized Commercial Properties	5
Grand Total	**69**

Field survey (2025).

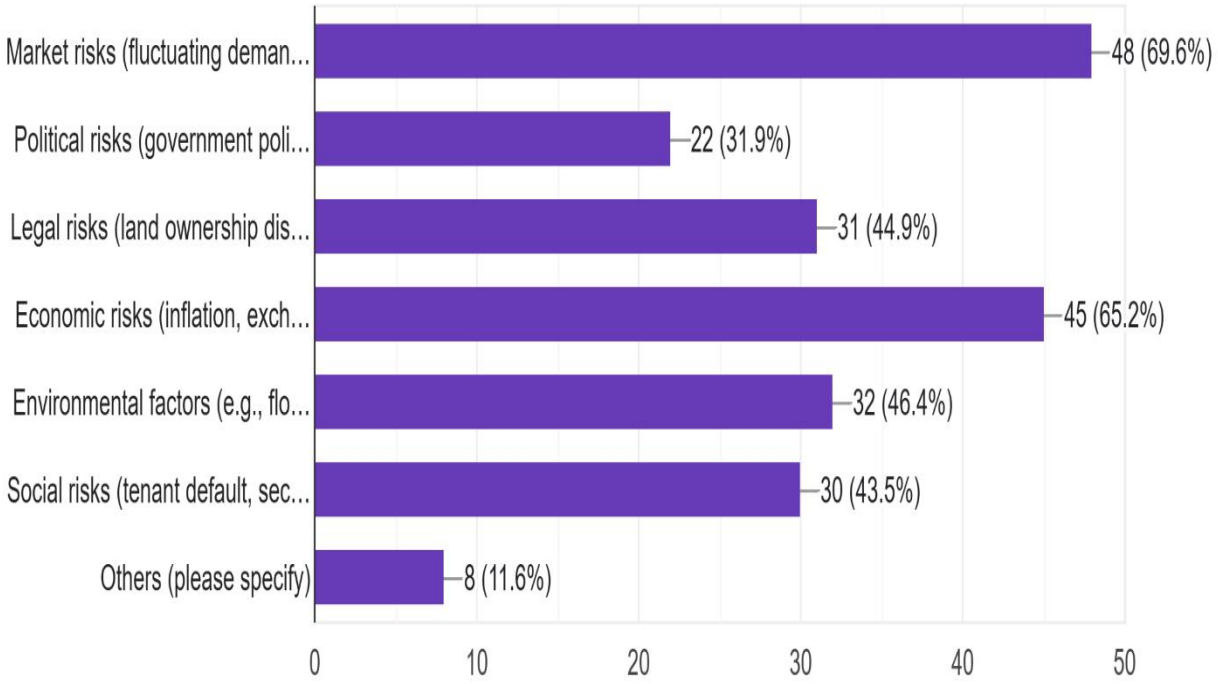
Table 4.5 shows classification of commercial property type. Hospitality and Entertainment property has the highest frequency comprising; hotel, restaurant, bar, event center, nightclub, lounge, amusement park, and cinema. The retail properties comprise shop, shopping mall, and showroom. The office spaces include office. The specialized commercial properties is filling station while mixed use properties are; school hostel, apartment building.



Source: Researcher's Field survey (2025)
Figure 4.4 **Commercial real estate type invested by respondents in Benin City**.

Research Question 1:

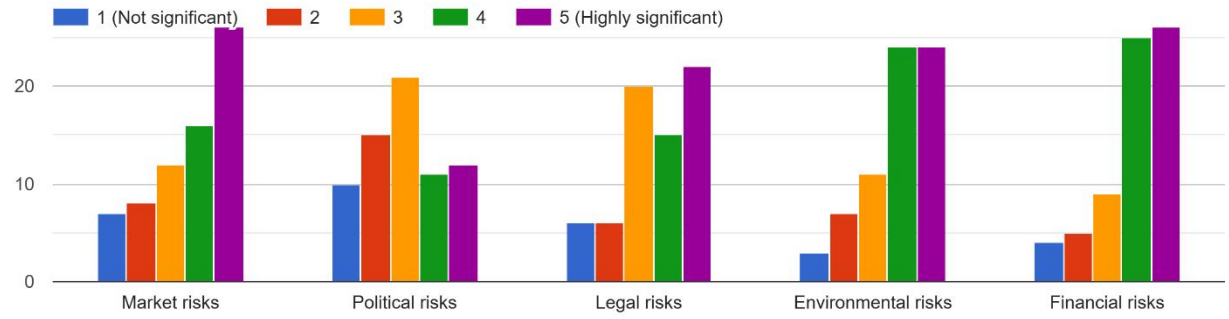
What risks will investors consider in direct commercial real estate investment in Benin City?



Source: Researcher's Field survey (2025)

Figure 4.5 show the risks consider by investors in direct commercial real estate in Benin City.

Figure 4.5 shows that the 48 respondents (69.6%) identified Markets risks comprising fluctuating demand, interest rates) as the top most risk they consider the most for direct commercial real estate investment in Benin City. 45 respondents (65.2%) identified economic risks such as inflation, exchange rate fluctuations, while environmental (flooding, erosion), legal (land ownership disputes, zoning laws), and social risks (tenant default, security concerns, Fraudulent property dealings) are ranked 3rd, 4th, and 5th respectively. The political risks are ranked least by 22 respondents (31.9%).



Source: Researcher's Field survey (2020)

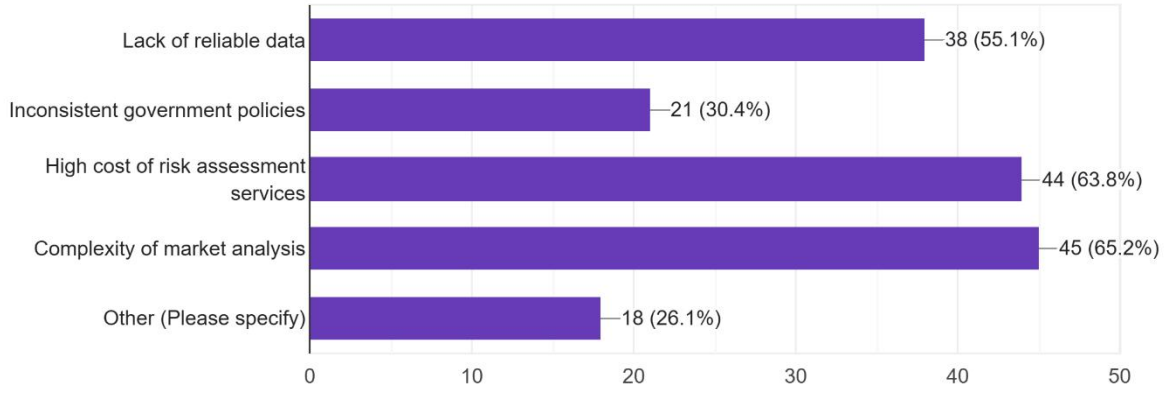
Figure 4.6 shows the rating significant of risks investors considered before investing in commercial real estate.

The figure 4.6 shows that the markets risk, is considered by 7 respondents indicated market risks no to be significant, 8 respondents affirmed sparsely significant, 12 respondents were neutral while 16 respondents opine that the market risk is significant and 26 respondents stated it is highly significant. However, 10 respondents affirmed that political risks are not significant while considering commercial real estate investment but 15 respondents sparsely agreed, 21 respondents ere neutral ,11 respondents considered it important and 12 respondents agreed it is highly significant. Similarly, 6 respondents viewed legal risks as not and sparsely significant

respectively.20 respondents were neutral, 15 respondents saw legal risks significant and 22 respondents argued it is highly significant.

Furthermore, 3 respondents viewed environmental risks not to be significant while considering direct commercial real estate investment. 7 respondents sparsely agreed and 11 respondents were neutral. While 24 respondents viewed environmental risks as good and highly significant respectively. Conclusively, 4 respondents didn't accept that financial risks is significant while considering commercial real estate investment.5, 9, and 25 view financial risks to be sparsely, neutral and significant respectively. 26 respondents heralded that it is highly significant.

However, the following challenges listed below were identified by the respondents while trying to access risks in commercial real estate investment in the study areas (Egor, Ikpoba Okha and Oredo)



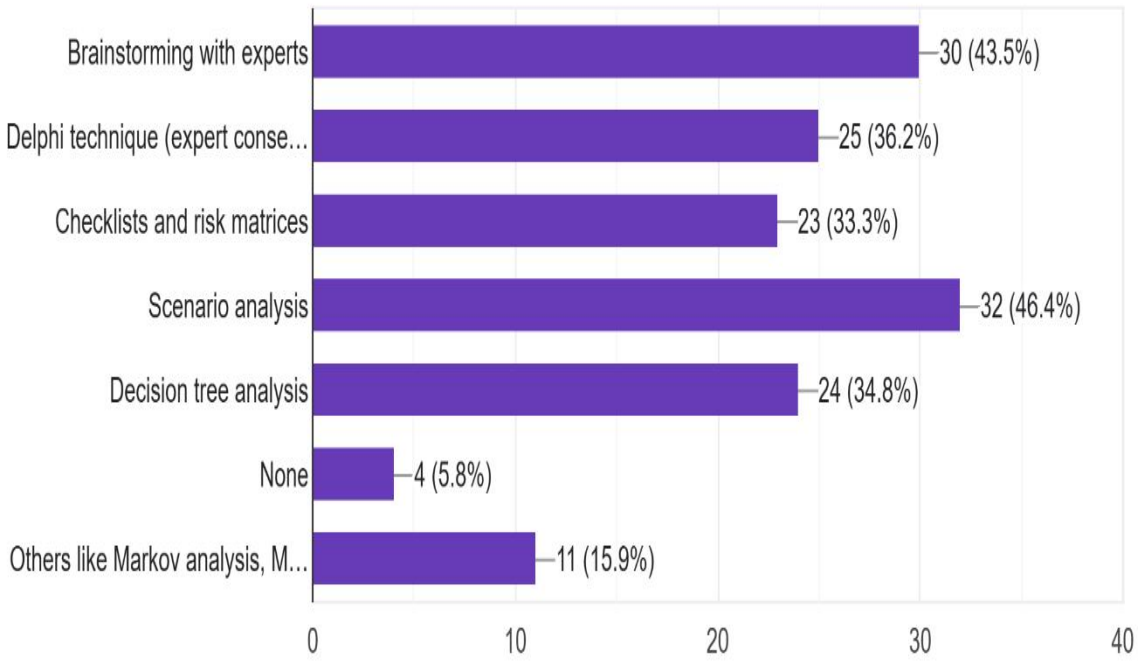
Source: Researcher's Field survey (2025)

Figure 4.7 shows the challenges that the respondents faced in assessing risks in commercial real estate investment.

Figure 4.7 highlights High cost of risk assessment by 44 respondents (63.8%) as the highest challenge experienced, followed by Complexity of market analysis by 45 respondents (65.2%) Lack of reliable data was the third challenge faced by 38 respondents (55.1%) followed by Inconsistent government policies as the forth challenge and finally other challenges faced by 18 respondents (26.1%) like poor infrastructural amenities/services to enhance good data pipeline, access to trained risk analysts.

Research Question 2:

What techniques have been applied in risk assessment on direct commercial real estate investment in Benin City?

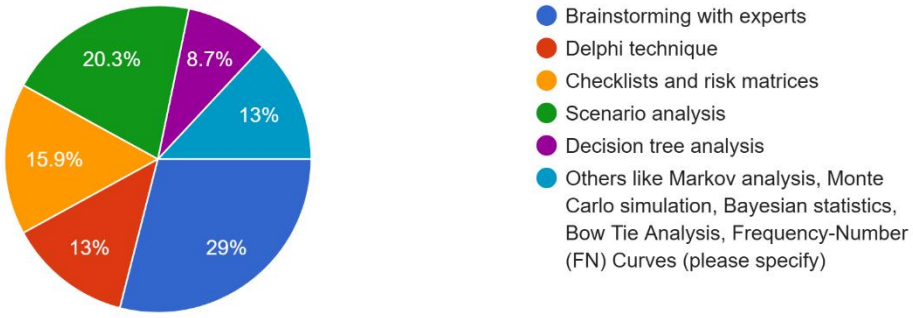


Source: Researcher's Field survey (2025)

Figure 4.8 shows risk assessment techniques explored during commercial real estate investments

Figure 4.8 shows that 32 respondents (46%) ranked scenario analysis as the top most risk assessment techniques, 30 respondents (44%) ranked brainstorming with experts as 2nd most risk assessments technique. Delphi techniques (experts) and decision tree analysis were ranked 3rd and 4th in the risk assessments techniques by 25 (36%) and 24 (35%) respondents respectively. 23 respondents (33%) ranked checklist and risk matrices as the 5th ranked risk assessments

technique. 11 respondents (16%) ranked others such as Markov analysis, Monte Carlo simulation, Bayesian statistics, Bow Tie Analysis, Frequency-Number (FN) Curves as the risk assessment techniques they implored for commercial real estate investment. 4 respondents (6%) don't engage any risk assessment techniques in commercial property investment.

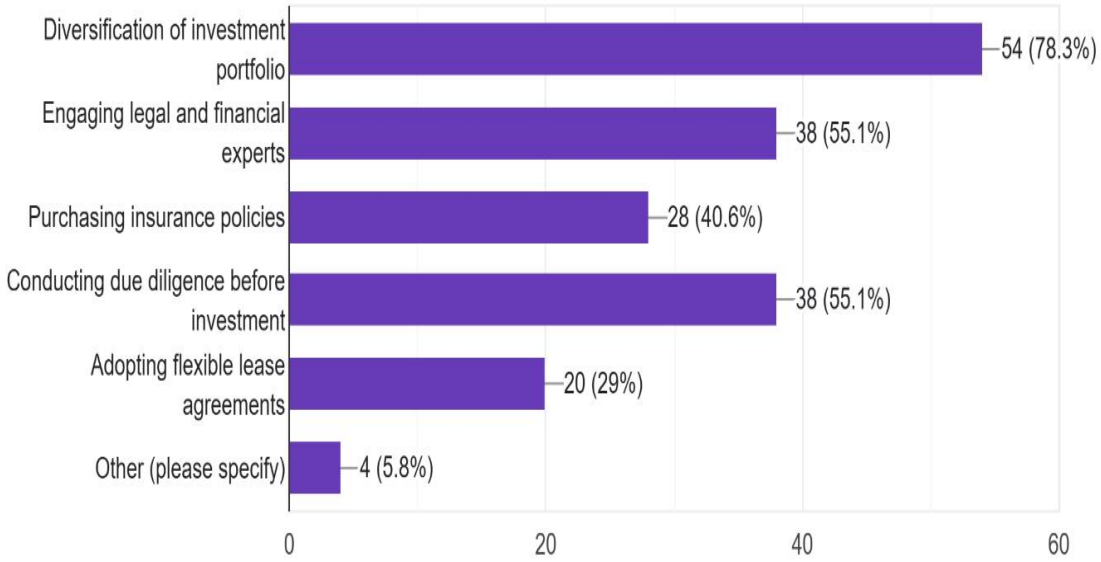


Source: Researcher's Field survey (2025)
Figure 4.9 shows the most effective risk assessment techniques.

Figure 4.9 shows that 20 respondents (29%) agreed that brainstorm with experts as the most effect risk assessments technique. 14 respondents (20%) ranked scenario analysis as the 2nd most effective risk assessment technique, Checklist with matrices is ranked 3rd by 11 respondents (16%) while Delphi and other techniques such as Markov analysis, Monte Carlo simulation, Bayesian statistics, Bow Tie Analysis, Frequency-Number (FN) Curves are ranked 4th concurrently by 9 respondents (13%) respectively. However, decision tree analysis is ranked the least most effective risk assessment technique for commercial real estate investments.

Research Question 3:

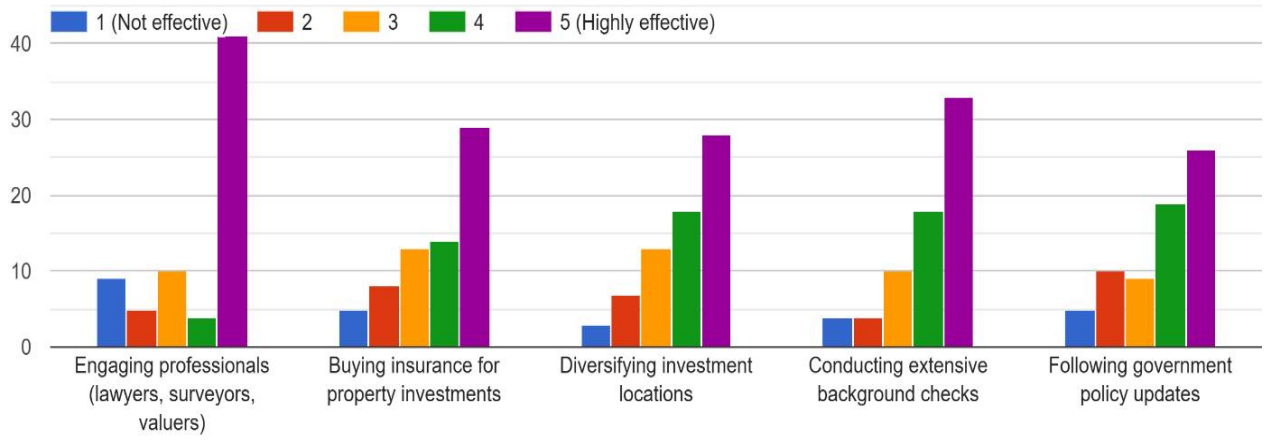
What risk management strategies are practicable for commercial real estate investment in Benin City?



Source: Researcher's Field survey (2025)

Figure 4.10 shows Risk Management Strategies in Commercial Real Estate Investment

Figure 4.10 shows that Diversification of investment portfolio was ranked the most risk management strategies in mitigating risks in commercial real estate investments by 54 respondents (78%). Engaging legal and financial experts along with conducting due diligence before investing were ranked 2nd risk management strategies in tackling risks during direct commercial real estate investments by 38 respondents (55%). 28 respondents (41%) argued that purchasing insurance policies as the 4th ranked risk management strategy while adopting flexible lease agreement is ranked 5th risk management strategy by 20 respondents (29%). While 4 respondents (6%) suggested that other techniques like news management either through media or printed news outlet.



Source: Researcher's Field survey (2025)

Figure 4.11 shows the effective risk management strategies in commercial real estate investment.

Figure 4.11 shows 41 respondents shows that Engaging professionals such as (lawyers, surveyors Valuers) to be highly effective as a risk management strategy. 10 respondents were neutral in their choice of Engaging professionals such as (lawyers, surveyors Valuers) to be effective in risk management strategy. 9 respondents showed that Engaging professionals such as (lawyers, surveyors Valuers) to not be effective as a risk management strategy. 5 respondents said that Engaging professionals to be less effective as a risk management strategy. 4 respondents stated that Engaging professionals to be not effective as a risk management strategy in commercial real estate investment.

For Buying insurance for property investments, 29 respondents said it is highly effective as a risk management strategy. 14 respondents opined that it is effective. 13 respondents were neutral in its effectiveness. 8 respondents said that it is lest effective. 5 respondents stated that is not effective.

Under diversifying investment locations, 28 respondents shows that it is highly effective. 18 respondents said that is effective. 13 respondents were neutral, 7 respondents were of the opinion that is least effective and finally 2 respondents considered it to be not effective as a risk management strategy.

In Conducting extensive background checks, 33 respondents said it is highly effective, 18 said it was effective, 10 respondents were neutral in their choice, 4 respondents stated that it least effective and finally 4 respondents stated that was not effective as a risk management strategy.

Finally, following government policy updates, 26 respondents shows that it is highly effective, 19 respondents said that it was effective, 9 respondents were neutral, 10 respondents said it was effective and finally 5 respondents said it was not effective as a risk management strategy.

4.2 Summary:

The risks that investors consider in direct commercial real estate investment in Benin City, are Markets risks comprising fluctuating demand, interest rates, Economic risks such as inflation, exchange rate fluctuations, while Environmental risk (flooding, erosion), Legal (land ownership disputes, zoning laws), and social risks (tenant default, security concerns, fraudulent property dealings) and Political risks.

The techniques which have been applied in risk assessment on direct commercial real estate investment in Benin City are scenario analysis, ranked brainstorming, Delphi techniques (experts) and decision tree analysis, checklist and risk matrices and others such as Markov analysis, Monte Carlo simulation, Bayesian statistics, Bow Tie Analysis, Frequency-Number (FN) Curves as the risk assessment techniques they implored for commercial real estate investment.

The risk management strategies which are practicable for commercial real estate investment in Benin City are Diversification of investment portfolio, engaging legal and financial experts,

conducting due diligence before investing, purchasing insurance policies, adopting flexible lease agreement, while other techniques like news management either through media or printed news outlet.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

The aim of this study is to assess the risks on direct commercial real estate investment in Benin City comprising Egor, Ikpoba Okha and Oredo Local Government Area in Nigeria.

Findings show that the research objective of identifying the risks investors may have in direct commercial real estate investment in Benin City are: Markets risks comprising fluctuating demand, interest rates, Economic risks such as inflation, exchange rate fluctuations, while Environmental risk (flooding, erosion), Legal (land ownership disputes, zoning laws), and social risks (tenant default, security concerns, fraudulent property dealings) and Political risks.

However, the research reveal that in examining the techniques that have been adopted in risk assessment of commercial real estate investment in Benin City comprise: the techniques which have been applied in risk assessment on direct commercial real estate investment in Benin City are scenario analysis, ranked brainstorming, Delphi techniques (experts) and decision tree analysis, checklist and risk matrices and others such as Markov analysis, Monte Carlo simulation, Bayesian statistics, Bow Tie Analysis, Frequency-Number (FN) Curves as the risk assessment techniques they implored for commercial real estate investment.

In determining the risk management strategies for commercial real estate investment practicable in Benin City, the researcher discovered that: the risk management strategies which are practicable for commercial real estate investment in Benin City are; diversification of investment portfolio, engaging legal and financial experts, conducting due diligence before investing, purchasing insurance policies, adopting flexible lease agreement, while other techniques like news management either through media or printed news outlet.

Moreover, the research could not cover environmental risks such as flooding, erosion and also climate related risks such as physical and transition risk, extensively due to the limitation of finance and timing of the study. Similarly, advanced risk techniques for commercial real estate investment could not be investigated in this study due to dearth of literature in commercial property among scholars in the built environment, Machine learning (Artificial Intelligence) which is a broader scope can be exploited as a new risk management strategy in commercial real estate investment in Benin City.

5.1 Recommendation:

1. Availability of reliable data base for commercial real estate property in Benin City should be established.
2. Consistency in Government policies will attract more investors and install confidence in investors thereby increasing tax revenue
3. Establishment of adequate infrastructural amenities/services will ensure commercial properties are constructed with smart technology while gearing towards net zero carbon economy.
4. More skilled risk analysts and managers should be trained in the higher institution of learning in Nigeria.
5. Association of professional bodies in Nigeria should endeavor grannies' continuous professional development program to train the trainers

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APPENDIX A

DEPARTMENT OF ESTATE MANAGEMENT,
FACULTY OF ENVIRONMENTAL SCIENCES,
UNIVERSITY OF BENIN,
EDO STATE.

25th January, 2025.

Dear Respondents,

RE: DISSERTATION – BACHELOR OF SCIENCE (B.Sc) ESTATE MANAGEMENT

I am currently undertaking a Bachelor of Science Degree (B.Sc.) in Estate Management at the University of Benin. In fulfillment for the award of an BSc., I am required to research on a topic area and produce a dissertation. The topic I have chosen is: 'Risk Assessment in Direct Commercial Real Estate in Benin City, Nigeria with the aim of assessing the risks on direct commercial real estate investment in Benin City, Nigeria.

I would be very grateful if you could complete the attached questionnaire and return it in the way that your assistance will indeed be of great help to this research. Needless to say, the information provided will be treated with strict confidentiality and you will not be identified.

Yours faithfully,

OKOJIE, Precious Idemudia
Researcher

QUESTIONNAIRE

RISK ASSESSMENT IN DIRECT COMMERCIAL REAL ESTATE INVESTMENT IN BENIN CITY.

This questionnaire is designed to assess the risks, risk assessment techniques, and risk management strategies in direct commercial real estate investment in Benin City, Nigeria. Your responses will remain confidential and used solely for research purposes.
Answering the questions appropriately takes **TEN (10)** minutes only

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Section 1: Demographic Information

1. Gender: ◯ Male ◯ Female ◯ Prefer not to say
2. Age Group: ◯ 18-30 years ◯ 31-45 years ◯ 46-60 years ◯ 60 years and above
3. What is your occupation? ◯ Real estate investor ◯ Certified Real estate agent/Valuer ◯ Property developer ◯ Financial analyst ◯ Other (please specify)
4. How many years of experience do you have in commercial real estate investment? ◯ Less than 1 year ◯ 1 - 3 years ◯ 4 - 6 years
5. ◯ More than 6 years
6. Have you invested in direct commercial real estate in Benin City before? ◯ Yes ◯ No
7. If your answer is YES, please specify the commercial real estate type (shops, offices, hotels, restaurant, cinema, and others)

   _____
8. Which of the Local Government Area in Benin City is your direct commercial real estate investment located? ◯ Oredo ◯ Egor ◯ Ikpoba Okha

9. What is your highest level of education? ◯ Secondary School Certificate Examination (WASSCE) ◯ Bachelor's degree/HND ◯ Master's degree ◯ Doctorate ◯ Other (please specify)

Section 2: Risks in Commercial Real Estate Investment

10. **What types of risks do you consider when investing in commercial real estate in Benin City? (Select all that apply)**

☐ Market risks (fluctuating demand, interest rates)

☐ Political risks (government policies, land disputes)

☐ Legal risks (land ownership disputes, zoning laws)

☐ Economic risks (inflation, exchange rate fluctuations)

☐ Environmental factors (e.g., flooding, erosion)

☐ Social risks (tenant default, security concerns, Fraudulent property dealings) ☐ Others (please specify)

Untitled Section

11. How significant do you consider the following risks in commercial real estate investment? *(Rate on a scale of 1-5: 1 = Not significant, 5 = Highly significant*

	1 (Not significant)	2	3
Market risks	◯	◯	◯
Political risks	◯	◯	◯
Legal risks	◯	◯	◯
Environmental risks	◯	◯	◯
Financial risks	◯	◯	◯

12. **Have you ever experienced financial loss due to real estate investment risks?**

◯ **Yes** ◯ **No**

13. **If YES, please comment on the financial loss.**

_____

14. **How do you assess risks before * making an investment decision?** ***(Select all that apply)***

☐ Consulting real estate professionals

☐ Conducting independent market research

☐ Relying on past investment experience

☐ Using risk assessment techniques

☐ Other (please specify)_____

Section 4: Risk Assessment Techniques in Commercial Real Estate Investment

15. **How often do you conduct risk assessments before making an investment?** ◯

Always ◯ **Often** ◯ **Sometimes** ◯ **Rarely** ◯ **Never**

16. **What challenges do you face in assessing risks in commercial real estate investment? (Select all that apply)**

☐ Lack of reliable data ☐ Inconsistent government policies ☐ High cost of risk assessment services ☐ Complexity of market analysis

☐ Other (Please specify)_____

17. **Which of the following risk assessment techniques have you used in real estate investment?** ***(Select all that apply)***

☐ Brainstorming with experts ☐ Delphi technique (expert consensus)

☐ Checklists and risk matrices ☐ Scenario analysis

☐ Decision tree analysis ☐ None

☐ Others like Markov analysis, Monte Carlo simulation, Bayesian statistics, Bow Tie Analysis, Frequency-Number (FN) Curves

(please specify) _____

18. **Which risk assessment technique do you find most effective?** ***(Choose one)***

◯ Brainstorming with experts ◯ Delphi technique

◯ Checklists and risk matrices ◯ Scenario analysis

◯ Decision tree analysis

◯ Others like Markov analysis, Monte Carlo simulation, Bayesian statistics, Bow Tie Analysis, Frequency-Number (FN) Curves

(please specify)_____

19. Do you AGREE that investors in * Benin City apply risk assessment techniques effectively before investing? ◯ **Yes** ◯ **NO**

◯ Not sure

Section 5: Risk Management Strategies in Commercial Real Estate Investment

20. What strategies do you use to * mitigate risks in commercial real estate investment? *(Select all that apply)*

☐ Diversification of investment portfolio

☐ Engaging legal and financial experts

☐ Purchasing insurance policies ☐ Conducting due diligence before investment

☐ Adopting flexible lease agreements

☐ Other (please specify)_____

	1 (Not	2	3
Engaging professionals (lawyers, surveyors, valuers)	◯	◯	◯
Buying insurance for property investments	◯	◯	◯
Diversifying investment locations	◯	◯	◯
Conducting extensive background checks	◯	◯	◯
Following government policy updates	◯	◯	◯

21. How effective do you think the following * risk management strategies are? *(Rate on a scale of 1-5: 1 = Not effective, 5 = Highly effective)*

22. Would you recommend direct commercial real estate investment in Benin City to others (friends and family members) despite the risks? ◯ Yes ◯ No Maybe

23. Please provide any additional comments or suggestions on improving risk management in commercial real estate investment in Benin City.

APPENDIX B

RELIABILITY STATISTICS

Cronbach's Alpha	Part 1	Value	.160
		N of Items	8[a]
	Part 2	Value	.389
		N of Items	7[b]
	Total N of Items		15
Correlation Between Forms			.609
Spearman-Brown Coefficient	Equal Length		.757
	Unequal Length		.757
Guttman Split-Half Coefficient			.757