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The Relationship Between Investment Strategy, Investment Return, and Investment Performance

ISSA Lamine FOFANA
Walden University

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Walden University

College of Management and Human Potential

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Issa Lamine Fofana

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Review Committee

Dr. William Stokes, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Douglas Gilbert, Committee Member, Doctor of Business Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2024

Abstract

The Relationship Between Investment Strategy, Investment Return, and Investment
Performance

by

Issa Lamine Fofana

MBA, Metropolitan College of New York, 2014

BBA, Metropolitan College of New York, 2013

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Business Administration

Walden University

June 2024

Abstract

Investment managers are concerned with investment strategy decisions, as they are one of the key predictors of successful investment management. Grounded in prospect theory, the purpose of this quantitative correlational research study was to examine the relationship between investment strategy, investment returns, and investment performance. The population consisted of 120 cases collected from *Morningstar's* mutual fund database. The results of the multiple linear regression were significant, $F(5, 119) = 36.598, p < .001, R^2 = .616$. In the final model, two predictors were significant: total 5-year returns ($\beta = 0.034, p < .001$) and large-cap investment strategy ($\beta = -0.357, p = .026$) were significant predictors of investment performance. A key recommendation is for investment managers to determine the risk level they are willing to accept when building a portfolio. The implications for positive social change include boosting investment returns and performance, hence improving the investment industry's stability, which may result in the expansion of local economies.

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Dedication

I dedicate this doctoral study in memory of my son Aboubakar Lamine Fofana, who passed away in 2018 on a vaccination trip in The Ivory Coast. Above all, this study is in memory of my lovely father, Lamine Fofana, Maitre Serge Roux , my mother, and all my family for the foundation and support they gave me. Moreover, I thank God for the mercy, the power of his guidance, and empowerment to guide me to complete the doctoral study.

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Section 1: Foundation of the Study

The complexity surrounding investment strategy, including growth, value, and small cap, presents various challenges to investment leaders during investment product selection (Eti, 2021). Difficulties occur when investment decision-making converts practical tools into investment performance success based on risk tolerance and expected returns. Investment strategies and risk-adjusted returns are connected core elements indispensable for improving and increasing wealth while assisting investors in reaching their financial goals (Buczynski et al., 2021).

In this research study, various aspects of financial domains related to investment strategy, investment returns, and investment performance will be examined. In addition, the researcher will assess the strengths and weaknesses of investment decision-making strategies used in various investment projects to increase investment returns and performance.

Background of the Problem

Strategic investment decision-making strategies are complex and present challenges to investment managers during financial investment product selection. Successful financial investment implementation refers to good decision-making processes in securities such as bonds, various mutual funds categories, and derivatives. A leader's lack of satisfactory decision-making worsens the investment company's financial results and causes a deterioration in business practices due to reduced competitiveness of services and products (Agyekum et al., 2021). For this reason, productive decision-making processes provide longevity and long-term prosperity for financial investment

firms. J. Li et al. (2021) described investment return as a metric that financial leaders use to measure the success of an investment. Investment returns can be defined as profit minus the cost to estimate their efficiency. Buczynski et al. (2021) indicated that using time-weighted return for investment performance measurement can be a tool that shows past and benchmark performance based on the percentage change of the investment's value over time. Using an effective investment strategy to increase investment return and investment performance may overcome stagflation challenges and accelerating the digital transformation may reduce the operation cost and increase investment performance (Buczynski et al., 2021). Strategic investment decisions (SIDs) have substantial effects on companies' long-term financial and operational performance and an enormous impact on their competitive advantage (C. Li et al., 2023).

Problem Statement

The specific business problem is that some investment leaders do not understand the relationship between investment strategy, investment returns, and investment performance. The purpose of this quantitative correlational research study is to examine the relationship between investment strategy, investment returns, and investment performance. The independent variables are investment strategies (e.g., growth, value, small cap], and investment returns. The dependent variable is investment performance. There will not be a specific population or group for this study, since I will use secondary data from Morningstar.

Population and Sampling

Population and sampling are integral to all research undertakings. Populations refer to a complete set of elements, whether persons or objects, that possess some common characteristics defined by the sampling criteria established by the researcher (Han, 2019). The target population for the study will be U.S. securities data, including equity, mutual funds categories, bonds, and derivatives. The data will be collected from Morningstar's annualized database from performance data from 2019 to 2023. I will use regression to analyze the various investment data from the Morningstar database during these periods from 2018 to 2023. Aligning the population with the research question may allow researchers to collect data from the industry with clarity (Poly et al., 2019).

Having an accurate sample size helps identify the relationship between dependent and independent variables and produce valid results (Annan et al., 2019). To effectively manage the sample, I will be selecting mutual funds based on effective strategies that have been used during these periods from the Morningstar database at which inclusion and exclusion criteria will be established. In addition, a purposive sampling method is a form of non-probability sampling in which researchers rely on their own judgment when choosing data to include in their study (Annan et al., 2019). Purposive sampling is a low-cost collection alternative that will allow the researcher to create an easily manageable sample (Wei et al., 2019). Consequently, this sample may not be truly representative of the general population (Annan et al., 2019). However, a sample constructed in this way can be the appropriate tool from which to draw conclusions (Han, 2019).

. *G*Power3* will be used to determine the appropriate sample size for the study and will be an effective analytical tool for this.). The software provides power analyses for tests such as Pearson correlations, ANOVA, simple linear regression, and multiple linear regression for fixed and random-predictor models (Faul et al., 2019).

Nature of the Study

Saunders et al. (2015) studied various research methods, including quantitative, qualitative, and mixed methods. A quantitative methodology is a research approach that quantifies data collection and analysis and includes a deductive approach in which researchers emphasize the testing of theory from positivist and realist viewpoints (Saunders et al., 2015). This quantitative methodology is appropriate for this study and will be used to examine the relationship between relationships, investment strategy, investment returns, and investment performance. Qualitative research includes collecting and analyzing non-numerical data to describe a supportive understanding of people's social reality that involves understanding individuals' beliefs, motivations, and attitudes (Yin, 2018). The qualitative method is associated with positivism and highly structured data collection techniques which will not be suitable for this study. Another research methodology is mixed method research. Muehlensiepen et al. (2021) defined mixed-method research as a research strategy in which scholars assemble and investigate quantitative and qualitative data within the same study. Conducting mixed methods research may demand more time and attention to produce various kinds of empirical snapshots which can be more complex to carry out, and may require more expertise to

collect data, analyze, and interpret the results than using one method (Muehlensiepen et al., 2021). As a result, I will not use a mixed method for this study.

The design for this study is correlational and will examine the relationship between the independent and dependent variables. The correlational design identifies appropriate variables and looks for a relationship between the independent and dependent variables (Bui, 2021). The quantitative correlational design will allow the researcher to examine the relationship between investment strategies, investment returns, and investment performance which is appropriated for this study. An experimental design can predict cause and effect but not the relationship (Saunders et al., 2015). Quasi-experimental studies select a specific range of values of an independent variable, while a typical correlational study measures all available values of an independent variable. However, in quasi-experimental studies, researchers use independent variables (IVs) before dependent variables (DVs). Their measurement can exclude the directionality of the problem (Bui, 2021). The experimental and quasi-experimental methods are important ways to design research and evaluate the degree of cause and effect (Bui, 2021) Therefore, experimental and quasi-experimental designs are not applicable to this research.

Research Questions

What is the statistical relationship between investment strategy, investment returns, and investment performance?

Hypotheses

A hypothesis is a provisional idea whose merit deserves further evaluation (Bui, 2021). There are two hypotheses, the null (H0) and alternative (H1), which are related to my research questions is to examine the relationship between investment strategies such as growth, value, small-cap (independent variable) investment returns (independent variables), and investment performance (dependent variable). The H0 and H1 reflect the appropriate statistical notation to examine the research study questions.

H0: The linear combination of investment strategies and investment returns will not significantly predict investment performance.

H1: The linear combination of investment strategies and investment returns will significantly predict investment performance

A hypothesis is a provisional idea whose merit deserves further evaluation (Bui, 2021). There are two hypotheses, null (H0) and alternative (H1), which are related to the research questions and the relationship between investment strategies. The IVs are growth, value, and small-cap investment returns. The DV is investment performance. H0 and H1 reflect the appropriate statistical outcome to examine the research questions.

Theoretical Framework

Kahneman and Tversky (1979) developed prospect theory to explain strategies in which losses and gains were valued differently. Individuals make investment decisions based on perceived gains instead of perceived losses, and on the premise that leaders can inspire followers to change investment strategies to increase investment return and performance. Prospect theory describes the following: how investment leaders choose

between probabilistic alternatives that involve risk; the probabilities of the outcome of the decisions; the financial results of decision-making, and objective possibilities of decision-making. This theory will be the framework for this research study and will be a way to set up the independent variables as investment strategies. Moreover, in prospect theory, investors value gains and losses differently and give more weight to perceived gains than perceived losses (Kahneman & Tversky, 1979). We can use prospect theory to develop independent variables to increase investment returns, when stocks with high prospect theory values have low subsequent returns, and stocks with low prospect theory values have high subsequent returns. Prospect theory aligns with this study's research question and hypotheses and will provide valuable insights regarding this study's independent variables to represent investment strategies and investment returns.

Operational Definitions

Competitive strategy: Used by organizations to outperform their competitors. The strategy can be a long-term action plan for a company to gain a competitive advantage over its rivals by evaluating their strengths and weaknesses, opportunities, and threats in the industry, and making the organization more profitable (Zhu et al., 2021).

Government fiscal policy: Using government spending and taxation to influence the economy and promote strong and sustainable growth to reduce poverty (Chen et al., 2021).

Investment: A mechanism of putting wealth in different basket vehicles including bonds, real estate property, and other alternative investments such as private equity, hedge funds, and ETF for material results (Berg et al., 2019). Hence, an investment is the

purchase of goods or services that can create future wealth, including a monetary asset purchased with the assumption that the asset will increase in value in the future (Peng et al., 2019).

Investment performance: A measure of the ability of an investment manager to add value in their investment portfolio, and measured by sharp ratio (Kwon, 2019).

Investment returns: A tool that measures or assesses an investment's profitability when assessing all fees, expenses, and taxes (Aguilar-Rivera & Valenzuela-Rendón, 2019). This is an example of a return on investment (ROI):

$$\text{ROI} = (\text{net return on investment} / \text{cost of investment}) \times 100$$

Investment strategies: A process related to the investment leaders' action to provide asset allocation through various strategies (e.g., investment opportunities selection, funds allocation strategies, human capital management, investment diversification processes, and alternative investment strategy) (Zhou & Xu, 2020).

Sharp ratio: This is a mathematical performance calculation of an investment that includes a security, or a portfolio compared to a risk-free asset, which is the difference between the returns of investment and the risk-free returns, divided by the standard deviation of the investment returns (Kwon, 2019).

Sharpe ratio = (return of portfolio - risk-free rate) / standard deviation of portfolio's excess return.

Assumptions, Limitations, and Delimitations

Assumptions

van-Daal et al. (2019) defined assumptions as presumptions that academic researchers assume to be true but cannot be verified. The premises in a research study element that are beyond the researchers' control could potentially jeopardize the validity of this study. Finally, I assume that all data published in *Morningstar* to be accurate, and the investment strategy, investment returns measurement, and investment performance using the Sharp ratio will be appropriate measures to determine performance.

Limitations

Soto (2019) wrote that limitations are weaknesses of the study that are beyond the researcher's control and can potentially pose threats to the validity of the study. This is due to the characteristics of the research design from which researchers interpret the result. To test the hypotheses, data from the databases of *Morningstar* which contain U.S. securities data and information on mutual funds and the S&P 500 index, will be used. This study has limited transferability due to the specific time used, specific investment products, and sample size. In addition, there is a limitation due to the impossibility of including all securities products and markets and using only five years of data.

Delimitations

Delimitations are characteristics limiting the scope and boundaries of a study (Crossman & Kazdin, 2016). Delimitations result from specific choices, including those concerning research questions, variable interest, the theoretical framework selected, and data choices (Snay, 2019). The focus of this study will be to examine the relationship

between strategic investment strategy, investment returns, and investment performance. This study will be a way to examine data from *Morningstar* data , and the U.S securities market between 2019 and 2023. Thus, the results of this study will be limited to the specific period and type of securities product.

Significance of the Study

Contribution to Business Practice

The findings of this study may provide investment professionals in the United States with effective strategies for increasing investment returns. Investment strategies have been a challenging issue in sustaining investment industry performance, as numerous companies lost significant .assets because of a lack effective strategies (Jensen & Maheu, 2018). Investment strategy effectiveness has therefore become essential for successful investing.

This study may also be important to investment practice and in providing a practical model for a better understanding the connection between statistical relationships of investment strategies and investment returns and performance. A significant investment strategies model could assist investment leaders in improving growth strategies and more importantly, increasing investment return and performance.

Implications for Social Change

. The implications for positive social change include providing potential significant strategies of investment return and performance strategies for investment managers to increase investment returns and investment performance in the United States.

Conducting effective investment strategy may increase investment returns and investment performance for the stability of investment industry. This action could lead to the growth of local economies and the possibility of job creation. More employment might reduce poverty and promote professional activities while augmenting revenues locally and nationally.

A Review of the Professional and Academic Literature

This literature review is a comprehensive analysis and synthesis of the literature about the relationship between investment strategy (independent variable), investment returns (independent variables), and investment performance (dependent variable). The goals of the study are to understand strategic investment decision-making processes and their relationship to measuring investment return and investment performance.

This review uses current peer-reviewed articles from researchers that address challenges in describing the connection between strategy investment, investment returns, and investment performance. Also, the researcher will explore the theoretical framework that guides this study by discussing relevant theories and identifying the limits of those theories when considering investment strategy, investment returns and investment performance.

Documentation

Relevant documents about the relationship between investment strategy, investment returns and investment performance were found by searching *Google Scholar* and the Walden University library. Documents are academic peer-reviewed articles and books published within the 2018-2023 period that explore the relationship between

strategic investment decision-making processes and the measure of investment returns and investment performance. I found 146 items, including 122 peer-reviewed articles, 11 books, and 10 dissertations published between 2019 and 2023. Table 1 (see below) gives aggregated data about the references used in this study.

Table 1

<i>Literature Documents in Support of the Research Questions and Method</i>				
Type	Peer-reviewed	% Peer-reviewed	Published 2019-2023	% 2019-2023
Journals	118	90.77%	115	88.46%
Books	9	6.92%	9	6.92%
Dissertations	3	2.31%	2	1.54%
Total	130	100%	126	96.92%

This literature review consists of five main sections: The prospect theory of Kahneman and Tversky (1979) and investment strategy ; the evolution of prospect theory; prospect theory and related theories; investment strategy, investment returns. Independent variables such as investment strategy. investment return and their ability to measure investment performance are the foundation of this literature review.

Prospect Theory

The purpose of this quantitative correlational research is to examine the relationship between investment strategy, investment returns, and investment performance. There are two hypotheses related to the research questions. In this study, prospect theory will be the means to verify the rigor of the hypotheses and assumptions established.

Gong et al. (2021) believed that Kahneman and Tversky's (1979) prospect theory is especially useful for the editing (i.e., coding) and evaluation phases of research. In Gong et al.'s (2021) analysis, these aspects are essential steps for reaching the proper outcome in the financial sector. These steps highlight preferences that show inconsistencies in financial business leaders' actions. For instance, the portfolio-worthy selection problem and inferences for asset pricing result from how they weigh their decisions regarding distinctive business circumstances (Gong et al., 2021). A firm's profits or losses from financial decisions rest on these parts of prospect theory.

Wang et al. (2023) qualified prospect theory as a riskier means of decision-making in finance. In Wang et al.'s (2023) analysis, prospect theory eases financial leaders' difficulties in estimating the likelihood of safe investments. Prospect theory also creates an intense fear of loss. Prospect theory is a dubious theory of behavioral finance. As such, financial leaders cannot use prospect theory as a tool to make suboptimal decisions.

Wang et al.'s (2023) thoughts would be acceptable if the investigators expanded their research by demonstrating how prospect theory can be a challenging tool for financial leaders to assess risk investment uncertainty in investment products. Wang et al. (2023) could also provide evidence about how financial leaders can foresee the consequences or outcomes of their investments with clarity. Prospect theory does not address how financial leaders frame and evaluate their decision-making process. In the quest for answers regarding the accuracy of prospect theory in decision making, one must

investigate the editing and evaluation phases as preferences that show success and inconsistencies in financial business leaders' actions.

Editing Phase

The coding phase is the primary step of the prospect theory. Da Silva Castanheira et al. (2021) suggested that the coding phase is the reference point that impacts whether financial business leaders see their decisions in terms of gains or losses. The value function of coding financial business shows gains and loss domains. A compelling advantage of data set availability of coding decisions from financial professional is that whether appropriate coding promises gains away from threat-free actions (C. Li et al., 2023). The coding model is a useful way to identify the gains and losses in financial investment.

The coding phases to identify the loss mechanism—gain in finance—remains dubious. Da Silva Castanheira et al. (2021) work is essential to understand how the coding steps integrate the loss's fundamental mechanism (gain consideration) in finance. For instance, an increase in the value of stock that financial leaders could not sell becomes unrealized gains. In contrast, Da Silva Castanheira et al. (2021) could enhance their work by adding additional models demonstrating loss aversion in finance. Other coding models could be set as the true precursor of loss aversion and the phenomenon that emphasizes guaranteed vigilance during a prospective loss.

Grable et al. (2021) opposed the precedent analysis stating that coding is not part of prospect theory. Grable et al. suggested financial leaders can disprove the coding phases for their future decisions in favor of higher priorities. Investment professionals

could refer to their controlling authorities (e.g., federal agencies). Financial leaders' authority is beneficial in non-binding financial cases as a pertinent and credible authority. Accepting such external authority is the best method for on-point freestanding cases without losses.

Grable et al.'s (2021) investigation is acceptable for this research when the authors distinguish between coding and financial leaders' controlling authority. In real-world businesses, decision makers' controlling authority might require a strict consideration of losses and gains assessment. Evaluating losses and gains in the form of codes is also a controlling authority. Grable et al.'s research is not adequate to discount the usefulness of the coding step in prospect theory processes for financial decisions.

In a descriptive article, Wu et al. (2021) advised using combining of probabilities related to similar financial results. Professionals in finance strive to make decisions using an association of evidence-based business situations. An excellent understanding of evidence combinations helps avoid errors in financial improvement projects. The combination of evidence-based decision-making is more appropriate than concealed decision making. Decision-making focused on the combination of evidence is the essence of financial management. The combination of evidence allows decision makers to consider whether they are making well-considered and fact-based decisions.

Wu et al.'s (2021) analysis is not contributing to this research because the authors did not specify what financial decision-makers need to establish their judgment regarding a business situation. Also, there no details given as to how researchers can combine and standardize evidence-based decision processes by organizing information that keeps pace

with decisions in the financial market. Combining probabilities is not the ultimate feature of the editing phase.

Evaluation Phase

Farooq et al. (2023) recommended the evaluation phase as the central aspect of the editing phase. Farooq et al. (2023) associated the evaluation phase with the weighted decision that includes each probability from prospect theory decision-making performances in their mixed method research. The evaluation stage mirrors the impact on the overall value of decisions. The evaluation identifies the gains and losses of decision results from the subjective decisions of financial experts.

The evaluation phase can be the best point to adapt prospect theory to market decision making and is testable beyond market constraints. The evaluation phase produces a robust preference reversal regarding professionals' judgment of a business situation (Wu et al. (2021). The evaluation model applies to most financial situations with nonzero consequences. It predicts how leaders and business performers might choose dominant decisions to reduce their potential losses. Farooq et al.'s (2023) research is a contributor to this study. Their work adds value to the evaluation phase as the final step of formal financial decision processes. Conducting an effective investment evaluation processes will likely guide decision-makers' abilities to make an effective analysis of their investment strategy processes.

While Farooq et al. (2023) supported prospect theory's evaluation phase, the authors could expand their works by showing fact-value merit as the vital interest of the evaluation phase. The fact-value examination highlights the distinction between

ontological facts and values. These concepts could create fuzziness for decision-makers with less professional experience. Decisions made using reasons and judgments from observation alone might alter and impact financial decisions. Farooq et al. (2023) demonstrated that the prospect theory evaluation phase is useful.

Melnik-Leroy and Dzemyda (2021) conducted a quantitative study on prospect theory's evaluation phase by showing facts relevant to given business circumstances and actualities using a rich observation of the financial market. In their thinking, facts and business circumstances must stay objective and independent of decision-makers subjectivity. Financial decision makers should move between facts, objectivity, and independence in practice. Such decision-makers can have explicit or implicit views on facts, objectivity, and independence based on professional experience, technology, and pure and/or applied finance science.

Melnik-Leroy and Dzemyda's (2021) research contributed to prospect theory assessment by accepting the evaluation process as necessary to maintain a clear distinction between decisional objectivity and independence in finance. However, these investigators failed to show how academics can address the traditional concepts of objectivity and independence when applying prospect theory in finance. From a philosophical perspective, maintaining objectivity and independence is challenging in light of decision-makers preconceptions of financial management. Decision-making evaluation should depend on observations of financial situations and business commitments. Melnik-Leroy and Dzemyda's work is valuable when assessing decisions from prospect theory in financial domains.

The Evolution of Prospect Theory

In a case study, Do Nascimento-Junior et al. (2021) separated prospect theory from leaders' decision-making prejudices. Do Nascimento-Junior et al. (2021) believed that scholars missed demonstrating the actual derivation of leaders' biases during the decision-making process. Academics' failure to discover consistent facts about prospect theory generated a prototypical ideal risk-sensitive theory to explain how prospect theory was developed. Do Nascimento et al. discovered prospect theory's additional roots in the context of risk aversion and leaders' risk behavior. Prospect theory generally indicates risk-sensitive concepts, risk aversion, and human risk behavior during distinct circumstances.

Previous researchers showed that prospect theory is a concept of evolutionary psychology. C. Li et al. (2023) traced prospect theory's origin in evolutionary psychology and confirmed the idea of prospect theory's beginning as a model based on risk-sensitive appreciation. The risk-sensitive appreciation model indicates that financial leaders' reasoning can solve specific financial problems related to finding appropriate investments to advance their business. C. Li et al. (2023) insisted that the same type of reasoning related to decisions is critical to understanding appropriate investment outcomes. The evolution of prospect theory cannot be understood only from leaders' mistakes but also evolutionary psychology.

Risk-Sensitivity and Prospect Theory

Most previous research has indicated that the risk-sensitive concept was the basis for shaping prospect theory. Costa and Dufour (2021) provided a speculative

evolutionary viewpoint concerning leaders' decision-making processes. Costa and Dufour's beliefs on the risk-sensitive concept of appreciation is consistent with collective financial understanding. The financial sector has a distinctive method to solve business problems. An illustration of this practice could be monetary gains and power acquisition.

The risk-sensitive concept is a valid concept that shows prospect theory origin (C. Li et al., 2023). The sensitivity to business risks may regulate financial decisions under constant change regarding business factors. In practice, financial experts and business leaders found their decision-making facts about stocks and bonds concerning interest rate sensitivity transformations. For instance, the discount rate related to the interest is a factor that originates from the national assessment of bonds and stocks.

Costa and Dufour's (2021) work is essential for this study. Risk sensitivity is a reasonable assessment for financial instruments. An effective decision-making process could gauge interest rate growth and market stability. Market sensitivity is the method to determine the risk associated with mortgage assets, price risks, trading portfolios, and loan portfolios. Costa and Dufour could expand their research by showing the cognitive side of decision-makers that might evolve when handling risky judgments. The cognitive dimension of decision-makers is essential to solving problems that impact the financial domain's fitness. The impact of this risk-sensitive concept in finance was the basis for prospect theory using risk associated with decision-makers' judgments.

Costa and Dufour (2021) performed quantitative research about risk sensitivity as the origin of prospect theory. In their analysis, risk sensitivity is derived from the Markov decision process (MDP). In MDP procedures, the agent, the environment, the state, the

action, and the policy are the main elements of any decision foundation. These factors determine the entity, surroundings, and the business situations of the decision process. These elements are the framework business practitioners use for modeling decision making from the perspective of a sensitivity-based optimization concept.

The MDP model of decision-making shows how prospect theory could evolve from a risk-sensitive concept to a decision-making metric. MDP includes essential components that represent the essence of the decision maker's action selection. De Almeida Costa et al.'s (2021) work holds true regarding risk sensitivity as one critical step for creating prospect theory. The authors could expand their work by demonstrating how risk-sensitivity includes salient details of the MDP model for decision-making and tolerance problems in financial domains. Also, de Almeida Costa et al. did not demonstrate how each component of MDP could control professionals' decisions in a perfect state of information. Despite these shortcomings, this study of subsidies is essential information that provides explains how prospect theory originated from MDP.

Duan et al. (2021) rejected risk-sensitivity as part of prospect theory's evolutionary process. In their research, they asserted that risk-sensitivity theory could not be part of an evolutionary perspective that reliably clarifies prospect decision-making. The risk-sensitivity components are standards that deviate from how prospect theory took shape. Risk-sensitivity would not use agendas such as bonds and equity acquisition to make decisions. The risk-sensitivity concept has generated programs that operate without the real vision of prospect theory and would be better suited to other uses such as political decisions.

Duan et al.'s (2021) evaluation of the risky sensitivity is unsatisfactory because it failed to understand the decision-making process under the uncertainty of financial circumstances. The literature on models of decision makers' risky choices would not exist without a strict consideration of a risk-sensitive concept that either forecasts choices in an accurate manner or foretells risk in financial professionals' decisions. The contrast between different points of view regarding the connection between risk-sensitivity and prospect theory underscores the importance of a learning model with a pedagogical approach to changes in prospect theory over time.

Risk Aversion

Risk aversion in financial business is one crucial step in the evolutionary process of prospect theory. Deslatte et al. (2021) suggested in their qualitative analysis that the risk aversion concept is a turning point in prospect theory because it shows how professionals dislike risks by distinguishing between difficult decisions and favorable judgments. Deslatte et al. indicated that decision makers who have the option between a risky investment versus financial ventures that are certain would select the favorable investment. By the same logic, business practitioners with equal expected gains from a similar investment choose the less risky. Risk aversion theory depicts how decision-makers judge the higher expected value with fewer risks. Decision makers' choices depend on the extent of risk aversion that is the foundation of prospect theory properties in financial decision processes. Risk-aversion awareness becomes the key driver for prospect theory.

Deslatte et al. (2021) could expand their qualitative research on risk aversion by showing the importance of urging decision makers to create methods for evaluating ways to model risk aversion. For instance, they could advise about managing marginal investment utility with risk aversion to drive numerous outcomes in finance. These researchers might also derive from their work substitute models that use straightforward intuition of risk aversion during the decision process. Deslatte et al.'s qualitative analysis improves this study by adding essential facts about different risk aversion models in prospect theory's evolutionary process.

There is considerable evidence of the risk aversion connection with prospect theory evolution in Rafique's (2021) case study. Rafique defined risk aversion as the probabilistic time feature of prospect theory in nature. The probabilistic feature of risk aversion justifies reasons why decision makers make unreliable choices under risk within a short time. Decision-making strategies under risk in a short period increase the probability of chaos. Decision formulation in time is a significant concern for the successful outcome of the decisions. The timing of the decision is vital. Timing of the decision lets decision makers envision essential features for inspired judgments and lets them coordinate their judgment with strategic analytical facts when building finance decisions.

Rafique's (2021) case study is informative for this study in terms of its analysis of probabilistic time features in the decision-making process arising from prospect theory. One might accept that risk aversion has been the best way to add time assessment in prospect theory formulation. Nevertheless, Rafique did not make a clear connection

between time and decisions. Still, there is a connection between time and decision making, such as the convenience of time for making the decision, the time for applying the decision, and the timing of making decisions are all critical for the best results. The exploration of these elements, though, could enhance Rafique's study.

Lam and Yoon (2021) completed a phenomenological study on the relationship between risk aversion and decision makers related to anxiety and differences. Lam and Yoon considered that anxiety and decision-maker differences in financial business performance are based on emotion. Emotional states might determine how financial project leaders bring positive or negative outcomes. Lam and Yoon recommended measuring the decision maker's anxiety and differences during the decision phases.

Measuring decision makers' anxiety and differences is the best way to gauge the state or a personality trait associated with decision success or failure. The anxiety and difference inventory indicate how decision makers feel about their decision during times of turmoil or tension. Risk aversion strategy for investment decision makers could help to deal with decisioning anxiety and to prevent poor choices related to uncertain financial investment outcomes.

There is a lack of correlation between anxiety and differences in emotions during risk aversion decision making in Lam and Yoon's (2021) phenomenology report. This report may establish a correlation vital to weigh risk-aversion from anxiety and different symptoms for predicting financial decision outcomes. Correlation assessment transforms financial decision makers into rational decision makers who consider their risky choices.

As such, Lam Yoon provided some advantages for the proposed study by showing decision makers' state of mind.

Human Risk Behavior

Risky financial decisions and their evaluation are part of human behavior. Aslam (2021) explored the influence of social context and content factors on human choices for risk in investment behaviors. Aslam demonstrated that from an initial idea, decision-makers' interactions with others in financial business play a major role in their behavior towards a decision. Understanding business, investment context, and social cues fluctuate depending on the gains, losses, and risks involved.

The gains, losses, and risks involved in decision makers' context impact decision-making processes. The social context network model is a noteworthy feature of human risk behavior. Aslam's (2021) analysis indicated how decision-makers process contextual cues when interacting during business decision activities. The business context shapes the decision process from social interactions. Decision-makers cannot isolate their decisions from their business interactions. Contextual cues are ways for investment leaders to recognize their risks or gains in a scenario.

There are several questions Aslam (2021) did not address. Indeed, Aslam could expand the descriptive analysis to explain how decision-makers process a contextual business cue. The brain influences contextual cues while facilitating the decision-maker's behavior and keeps relevant information that helps shape human behavior when establishing new routines. The brain's role is essential to gauge risks, losses, and gains, and prompting appropriate behavior. Thus, it is crucial to understand what influences cue

selection that could inform future behavioral decisions. Aslam's descriptive analysis is vital to evaluate how decision-makers act in business. Aslam added an exciting element to this study.

Prakash et al. (2021) distinguished human-risk behavior from willingness as a behavioral decision-making framework. Human-risk behavior includes decision-makers' cogency of action control, self-efficacy, and social rules. Decision makers determine their behavioral intentions about investment decisions. In this case, risk-taking becomes deliberate in a prototype-willingness model. The notion of deliberative modes of decision makers goes along with the thought of willingness in decision making. Willingness indicates how inclined decision-makers are to engage in acceptable behaviors with less or more tendency to take risks.

Financial leaders as decision-makers will be essential in decision-making strategies. Decision makers could engage in good or bad decisions with the constraint being reasoning. Business practitioners' beliefs can lead to a behavioral decision-making framework as prospect theory's origin.

Although Prakash et al. (2021) focused on human-risk behavior's internal factors, they could enhance their work by emphasizing external factors' impact as well. Academics have tied financial market fluctuation, political decisions, and market regulations to risk-taking in business environments. Accepting external factors reinforces the significance of the setting in which risky decisions happen. Behavioral decision-making includes internal and external factors. Prakash et al. benefit this study because the

writers emphasized how decision makers risky behavior may be the outcome of voluntary actions or negative influences from the economic business environment.

Fallacies and biases as components of human-risk behavior can influence decision-makers in one direction or another during the decision process. Vrbová and Müllerová (2021) thought decision-makers' internal factors produce fallacies and/or biases in their quantitative critique. The decision-maker's internal factors include their preferences and experiences and may prevent business specialists from risky behavior.

Human-risk behavior under the influence of fallacies and/or biases contribute to decision-making unpredictability. Fallacies and biases are the outcomes of past experiences and preferences during decision-making. The interplay between dynamic fallacies and biased behavioral responses is a fundamental aspect of decision-making.

In a quantitative study, Vrbová and Müllerová (2021) considered established facts about how some decision-makers engage in faulty decisions. They provided theoretical and practical answers as to how human risk is part of the way prospect theory tools shape business circumstances. More valuable information could improve Müllerová's study quality while explaining both theoretical and practical problems related to prospect theory.

Information Technology

The IT platform supports strategic investment decision-making strategies and improves the science and standardization of the investment decision-making process (Davis et al., 2021). Thus, IT tools may improve investment decision-making efficiency and stabilize investment returns (Wilkin & Chenhall, 2020). Specialized programming

techniques that use software packages such as *LINGO*, *MATLAB*, and *AMPL* may solve many Strategy investment decision's challenges (Colapinto et al., 2020). Technology influences every financial domain and impacts how investors connect with their decisions. Investors' connection with their investment is a way to perceive notable changes in business happenings. For instance, financial leaders who relate to their investment decisions can track them.

The use of new technology in investment decision-making procedures may overcome investment challenges and leverage competitive advantages over the financial market for many firms. While Colapinto et al. (2020) were correct about the importance of technology regarding financial decisions making, they could elaborate on how technology makes information available to decision-makers.

The quality and speed of decision-making depend on how decision-makers capture information regarding potential investments. IT workers are a primary means of obtaining valid information and play a significant role in organizations by updating decision-makers on business and investment decisions to guarantee the proper implementation of financial projects. Technology tools explored in Colapinto et al.'s (2020) review is a critical part of this study. Decision makers need rapid access to information to formulate and justify their decisions regarding their investments. Technology tools inform and encompass chronological corporate, market trends, financial data, and competitor profiles. Investing in finance requires a networked data management system to help decision-makers choose.

S. A. R. Khan et al. (2021) believed an overview of prospect theory is essential when investigating the lack of shared understanding regarding the theory's definition and functions. A synopsis of prospect theory is the best way to see how different features come together to enable a rich understanding of its use in this study. Decision-making processes deliver strategies for the effective *practice of prospect theory*. S. A. R. Khan et al. (2021) emphasized the importance of prospect theory and its associated decision-making process. A review of related and rival theories is also necessary to explain the reasons for selecting prospect theory for this study.

P. Liu and Zhang (2021) defined prospect theory, also known as loss-aversion theory, as the inner concept of decision-making in difficult business circumstances. After analyzing prospect theory, Kahneman and Tversky (1979) believed that it contains pragmatic evidence of authentic individual choice behavior. Prospect theory illustrates that decision-making depends on choosing options that may be based on biased judgments (A. Khan, 2022). Using the theory lessens biased judgment in evaluating business and financial situations. P. Liu and Zhang's assessment of Kahneman and Tversky's assignment is meaningful in decision-making processes. Kahneman and Tversky built judgment heuristics on decision-making processes. Acknowledging prospect theory involves evaluations of the internal and external facets of business and the financial world regarding fundamental choices across the business and financial spectrum. The essence of prospect theory decision-making encompasses a trade-off between business and financial values.

While prospect theory is the best way to assess decisions in business and financial circumstances, P. Liu and Zhang (2021) failed to demonstrate how decision-makers could use this pertinent knowledge and experience to shape their thoughts and make informed decisions. Business and financial practitioners' knowledge about their subject is essential for reaching accurate decisions. Overall, P. Liu and Zhang's overview is essential for this study. Their work showed what prospect theory means in decision-making and how these decisions could impact business well-being.

Hameleers (2021) provided another overview of Kahneman and Tversky's (1979) prospect theory. Hameleers asserted that business and financial decision makers manage their assets differently during difficult situations such as pandemics. In prospect theory, decision makers assess their gains and losses concerning risk-acceptant and risk-averse. In Hameleers' explanation, risk acceptance is about acquiescing to the recognized risk and not performing in terms of business and financial transactions to minimize those concerns. Decision makers accept business and financial risks because they approve of their impacts and outcomes in their work advancement.

Risk-averse is about avoiding losses over making gains. In this case, decision-makers and financial business participants chose investments with lesser risks over financial ventures with more uncertainty. The concept tied to prospect theory is for financial business performers to compare the threat level of investments and portfolios to the inclusive risk level. Hameleers (2021) could further the analysis by pinpointing the specific option with a low, predictable financial value. Hameleers missed showing the

link between risk-acceptant, risk-averse, and consistent expected-utility theory as the financial business patterns.

Hameleers (2021) did not present conclusive evidence of how risk-acceptant and risk-averse might avoid guaranteed gains and stipulate financial losses. Hameleers showed how risk-acceptance and risk-averse are essential parts of prospect theory. Financial business participants should weigh these factors to increase their business acumen.

Critics present prospect theory as confusing. Some researchers pointed out problems encountered in the research between decision makers' experience and the financial business circumstance description. Moscati (2021) conducted a quantitative study that prospect theory showed simple probabilities rather than probabilities learned through financial business performers' experience. By this logic, experience and conditions become unpaired. The mismatch between business actors' experience and business circumstances creates an exaggerated evaluation and underestimation of the decision process. Considering the confusing part of prospect theory, one may argue that it is not the natural solution for their decisions. In this light, prospect theory is not a fundamental tool that can improve financial business managers' experience.

Moscati's (2021) opposition to prospect theory reveals how important business actors' experience could impact inspired decisions and lessen significant risks during a financial transaction. Prospect theory seeks to compare gains and losses to a psychological experience reference point. The experience reference point is essential to decrease uncertainty and increase financial transaction value as gains. The author's

analysis is the best means to understand how prospect theory is helpful in the quest for profitable investment decisions. This fact adds valuable depth to this study regarding criticism and other aspects of prospect theory overview. Prospect theory, as developed by Kahneman and Tversky (1979), is the best fit for this study because of its rich content that details how decision processes work in the financial investment domain.

Prospect Theory and Certainty Effects

The certainty effect of prospect theory is leaders' inclination about specific outcomes of their investment decisions, while reducing the probability of investment loss (Kahneman & Tversky, 1979). The certainty effect leads decision-makers to select a particular and less probable outcome. That is, the certainty effect guides the risk-averse preference that becomes the probability for decision-makers to guarantee profits during business success execution (A. Khan, 2022). The certainty effect includes risk in the decision-making process.

According to prospect theory, certainty affects the predisposition of business practitioners to feel the gap between positive business outcomes compared to ends that are not achievable. This thought leads business leaders to evaluate the certainty of success when formulating decisions for projects. The certainty effect confirms the risk that lies in business decision judgments (Kahneman & Tversky, 1979).

Kahneman and Tversky (1979) did not emphasize the importance of experience in decision-making techniques that include the certainty effect. Making decisions in the existing financial climate can influence deciders' ability to make correct decisions. Business leaders' expertise is the most important aspect one should consider during the

decision-making process. Acceptable experience is the source for expertise in the financial field. Expertise from experience is the most trusted factor companies use when appointing their decision makers. Once again, Kahneman and Tversky should have highlighted the importance of experience effectiveness within the certainty effect description. Cheng and Frangopol (2021) established in a descriptive and inferential analysis that experience is essential when elaborating on the certainty effect. For Chen and Frangopol, the truth of the decision-making process happens when business leaders learn from experience.

Experience is the tool that helps business leaders trust themselves. Experience gives decision makers the guidelines and autonomy to choose the right path for successful business creativity and learn from past mistakes. Cheng and Frangopol (2021) proposed feedback and repetition are tangible illustrations of experiences that decision makers learn from practices. These factors strengthen experiences. The importance of experience as part of the certainty effect is necessary for leaders' choice correctness (Moscati, 2021). Experience does benefit financial business practitioners during complex decisions. Experience changes the course of action in most cases to a successful outcome. In this respect, the experience of crafting poor decisions and conceding the consequence of those corrupt decisions can work to make improved decisions in the future.

Cheng and Frangopol's (2021) descriptive and inferential analyses are vital for this research. These experts have insisted on the significance of experience when investigating the certainty effect. The key to making better decisions is for financial professionals to coach themselves while emphasizing the contribution of a successful

business project. Experience is the ultimate solution for doubts and risks in performance and drives successful decision processes (Cheng & Frangopol, 2021).

Prospect Theory and the Isolation Effect

Hameleers (2021) described the isolation effect in prospect theory as the difficulties financial leaders investigate during the start of a decision with two options having similar results. It shows financial business leaders the distinctions between two stimuli while indicating the evaluation of each option.

Decision makers can weigh the outcomes that suit their financial projects. The isolation effect simplifies the decision-making process by reducing the gap between limited business execution options and is critical in investigating prospect theory because influences decision-makers' behavior. The choice between alternative decision options simplifies financial business in more than one way. The isolation effect supports a simplified decision-making process. The simpler process consists of indicating critical information about each business execution option side-by-side. Leaders can compare, assess, and weigh the most appropriate option concerning the business goals. The isolation effect compares and chooses among several business options while recommending the best outcomes.

Hameleers' (2021) exploratory essay assists this research because it adds substantial depth to evaluating prospect theory using isolation effects. Nevertheless, Hameleers could consider the power of information in applying the isolation effect. Information is the feature that lets decision-makers understand features that other business professionals might disregard and underlie key differentiators that affect

selection. This information could provide enough data about every selection option regarding financial services.

Leung and Cai (2021) suggested that the decision-making process' success shares a critical connection with information. Leung and Cai (2021) insisted on information as being essential for decision makers need to select the most suitable opportunity for their business. Information is a vital source that can generate alternatives (Hameleers, 2021). For instance, information can show the decision suitability of each business situation (Leung & Cai, 2021). In this case, the isolation effect becomes the calculation of the decision consequence regarding information availability (Farooq et al., 2023). Information is the key to the isolation effect during the decision-making process (Leung & Cai, 2021).

Information has a definite position in each phase of the decision-making process which can enable financial professionals to make respectable quality decisions (Hameleers, 2021). The information indicates the context in which a business decision is necessary (Farooq et al., 2023). The decision context links decision-makers' information about the environment in which a business problem happened and its solution (Leung & Cai, 2021). Proper management of information is essential in organizations. To be an effective strategy, investment decision making needs adequate information to guide managers in the right decision processes. Leung and Cai's (2021) analysis adds strength to this proposed research. Information certainty facilitates effective decisions by delivering useful analytic functions. Decision-makers must be certain they have enough information under their control before deciding. Relevant information can build the

necessary data from financial businesses' tasks and accounts into bits of intelligence to present managers with clear decision guidance.

Prospect Theory and the Measure of Investment Returns

Gu and Yoo (2021) stated that prospect theory can be used to evaluate the hypothesis that investors seek portfolios that display attractive distributions. The mutual fund market in the United States is an interesting example because fund investors are known to be seeking returns. Gu and Yoo argued that mutual funds attract higher net flows when they have better prospect theory values. The funds' flow can exhibit heightened sensitivity to an extreme performance measure. The prospect theory's general concept is that if two choices are presented to an investor and are both equal, the one presented in terms of potential gains will be chosen (Kahneman & Tversky, 1979).

Expected Utility Theory

Expected utility theory (EUT) is an economic theory that describes the utility of an aggregate economy that is expected to reach under any number of circumstances (Wang et al., 2023). EUT predicts that when allocating wealth between risky and riskless decision makers, allocate a positive amount to the risky asset whenever its expected return exceeds the riskless rate of return (A. Khan, 2022). Thus, the EUT is calculated by taking the weighted average of all possible outcomes under certain circumstances, with the weights being assigned by the probability that any event will occur (van-Daal et al., 2019).

The mathematician D. Bernoulli first introduced the expected utility hypothesis (EUH) in 1738 to solve the issues that lie at the center of the *St. Petersburg Paradox*, a

problem that concerns infinite outcomes, and which he created in response to a situation described by his cousin in 1713 (Korkmaz et al., 2023). This was the first description of marginal utility. In 1926, F. Ramsey and L. J. Savage used the same principles to illustrate a game of chance in which a coin is tossed in each play of the game (Johnstone, 2021). EUT is derived from the EUH, which states that under uncertainty, the weighted average of all levels of utility will best represent the utility at any given point in time (Bridgers et al., 2020).

EUT analyzes situations where investment decision-makers decide without knowing which outcomes may result from their investment returns, and includes decision-making under uncertainty (Suomala & Kauttonen, 2023). These individuals will choose the action that will result in the highest expected utility; that is, the sum of the products of probability and utility overall investment outcomes (Johnstone, 2021).

An example of EUT might be that the utility of money does not necessarily equate to the total value of money (Bridgers et al., 2020). Another example is the reason people have insurance policies to cover themselves for various risks. Even when including the expected cost of paying for insurance, there would still be a loss of monetary outcomes if the value of policy were received (Ali & Chua, 2023).

The investment decision-making strategies that involve expected utility are decisions having uncertain investment outcomes. These include instances when investment decision-makers may calculate the probability of expected outcomes and weigh them against expected utility before deciding (Bridgers et al., 2020). The EUT is

widely used to model decisions in situations where outcomes are uncertain (McCarthy et al., 2020).

EUT describes the risky choice as a utility maximization process in which decision makers assign a subjective value to the choice options and choose the option with the highest subjective value (Ferrari-Toniolo et al., 2021). Thus, the expected uncertainty is standard in many decision-making processes. These decision processes include political decisions making, which may allow decision makers to take uncertainties into account based on importance when building applicable models and interpreting the actual results of events (Bridgers et al., 2020).

Further, EUT provided possible explanations for various phenomena: the failure of the median voter theorem, to making vague campaign promises, and delegating policymaking in various industries (A. Khan, 2022). The EUT model may give alternative explanations for empirical phenomena and can structure reasoning about the effect of politicians' goals, circumstances, and beliefs about their behavior (Bridgers et al., 2020). In this way, EUT can help empirical researchers derive hypotheses and guide them toward the data required to exclude alternative explanations. EUT has been very successful in spatial voting models but can also be applied to other decision-making processes (S. A. R. Khan et al., 2021).

Although EUT has limitations, modern theories that use its framework, such as prospect theory, can help overcome these limitations (Wang et al., 2023). Prospect theory relies on the same modeling techniques and can describe the mechanisms that may

explain the decision-making process' empirical phenomena and the benefits of both theories (Sun, 2020).

Rational Choice Theory

Rational choice theory (RCT) includes the postulation that when there are various investment options under scarcity, people choose the option that maximizes their individual investment goals (Herfeld, 2020). RCT assumes that investors have numerous preferences and constraints but given limited options, make rational decisions by effectively weighing the costs and benefits of each investment opportunity available to them (Fumagalli, 2020).

RCT assumes that rational people have self-control that impacts emotions and external factors. Thus, rational people decide what is best for themselves, and that the final decision will be the best choice for individual investors (Moscati, 2021). However, various behavioral economics studies show that people are not rational and not able to make good investment decisions (Avi-Yonah, 2020).

Behavioral economics researchers use psychology and economics to explore why people sometimes make irrational decisions and why and how their behavior does not follow the predictions of economic models (Herfeld, 2020). The fact that humans are emotional and easily distracted often make their investment decisions not in their best interest (Avi-Yonah, 2020). RCT follows suit, and academics can build from a simple foundation, which assumes that individual investors pursue goal-oriented behavior stemming from rational investment preferences (Fumagalli, 2020).

The RCT model benefits from its precise assumptions in which peers construct individual-level reasoning (Avi-Yonah, 2020). Although many rational choice theorists focus on individual decision-making, most consider individuals' investigations. There are aggregations into some social outcome or social preference order (Sharma & Sarma, 2022). Individuals' preferences connect with social choice and game-theory models (Herfeld, 2020).

RCT models were used in model interactions by political institutions and in other decision-making (Fumagalli, 2020). They are tools that attempt to solve challenging concepts in the social sciences, including ideology and personal identity, which typically have established descriptors (Avi-Yonah, 2020). In contrast to those concepts as extant descriptors, rational choice theorists have modeled the endogenous development of ideologies and personal identity (Herfeld, 2020).

Cumulative Prospect Theory

Cumulative prospect theory (CPT) as a variation of prospect theory, describes and predicts investment decision makers behaviors under risk and uncertainty (Lu et al., 2020). CPT is the leading behavioral account of decision-making under uncertainty. Uncertainty is a way to avoid the dominance violations implicit in prospect theory by indicating that the probability weight applied to a given outcome depends on its ranking (Sun, 2020). The method consists of devising a simple and direct non-parametric method for measuring the change in relative probability weights resulting from a change in payoff ranks (Wang et al., 2023). Conventional calibrations of CPT preferences show that

the percentage change in probability weights should be more significant than what was observed (Wang et al., 2023).

CPT displays three-way decisions that describe the risk attitude of decision-makers. First, the aid of a reference point as the value functions that researchers utilize to describe different risk appetites of decision-makers toward gains and losses. Second, the weight functions incorporate the nonlinear transformation of the conditional probability. The existence and uniqueness of thresholds of this model are the simplicity of its decision rules. These rules concern the conditional probability and numerical solutions of thresholds and the algorithm for constructing three-way decision rules (Sun, 2020). Third, an example for comparisons can be presented to illustrate and develops an alternative model, such as prospect theory, which presents risky prospects that exhibit several effects that are inconsistent with the basic tenets of utility theory (Doh & Wang, 2020).

An investment professional's underweighted outcome is probable compared to outcomes obtained with certainty (Sun, 2020). Using cumulative prospect theory, academics weigh decisions by considering the increasing order of value functions. However, with the value functions and weight, the functions to be used require new decision rules of the proposed model. The proposed model is a way to deduce values rather than minimize cost as the principle of maximizing cumulative potential (Wang et al., 2023). From the outcome of the analyses above, decision-making can contribute to risk-aversion in choices that involve sure gains and risk-seeking in choices involving sure losses (Wang et al., 2023).

Investment decision-makers have different risk appetites towards gains and losses. In the actual decision process, the pain of losses can be far greater than the preference for gains (Sun, 2020). CPT differs from earlier prospect theory in that weighting is applied to the cumulative probability distribution function, as in rank dependent EUT, but not to the probabilities of individual outcomes (Chudziak, 2019).

Behavioral economics researchers argued that people make irrational decisions and attempted to explain why and how their behavior does not follow the predictions of economic models. As people are distracted by emotions, in a distracted situation, they may make investment decisions that are not in their best self-interest (Herfeld, 2020). However, this theory cannot be considered an excellent choice for decision-making before giving more consideration to various internal and external factors, including technological, political, security, and risk factors. In contrast, prospect theory is an excellent choice for examining investment decision-making strategies to increase investment return and performance, considering the same key factors.

In short, RCT is a good theory for investment options and how investors can choose the best option that maximizes the value of their investment portfolio (Herfeld, 2020). Moreover, this theory depicts financial leaders' reasoning as self-control action. Financial leaders are not moved by emotions and external factors. Financial leaders, as investors, can decide what is best for themselves during the investment decision-making process (Moscati, 2021).

Strategic Investment Decision-Making-Strategies

Strategic investment decision-making strategies (SIDMS) are a set of guidelines that govern the behavior of investment decision makers and allow them to be faithful to the desired investment strategy that can increase investment's performance (Das & Panja, 2020). SIDMS involve identifying, evaluating, and selecting the best investment among various investment products to give a company a competitive advantage (Meredith & Zwikael, 2020). Cost-benefit analysis is an effective tool for SIDMS to increase investment return and performance. There are multiple SIDM processes to increase investment returns and performance by selecting the best investment assets and strategies. These strategies increase investment returns and investment performance (Eti, 2021). The factors that investment managers need to consider when using investment decision-making processes include:

- Capital market venues
- Market participants
- Information technology
- Investment return and risks
- Taxes and inflation of the return
- Understanding investors' goals
- Asset allocation strategy
- Portfolio performance evaluation
- Asset selection decision making
- Monetary policy

- Political situation and
- Catastrophic event (e.g., a pandemic).

Capital Markets

Capital markets are venues where savings and investments are channeled between the suppliers who have capital and businesses that need the capital to invest. These include retail and institutional investors, private persons, and governments (Zeng et al., 2021). Capital markets are comprised of primary and secondary markets, which include the securities market (stock markets) and the debt market, such as bond markets (Papadia & Schioppa, 2020). Capital markets seek to improve investment transaction efficiencies (Avi-Yonah, 2020). They also bring market participants a place where they can exchange securities (Nikolova et al., 2020).

Capital markets are places where various entities trade different financial instruments including stocks, bonds, currencies, and foreign exchange markets. The venues where the major markets are located are New York, London, Singapore, and Hong Kong (Altin, 2020).

The Primary Market

The primary market is where securities are created, such as selling new stocks and bonds to the public by companies using initial public offerings (IPOs) (Fabiola et al., 2020). The primary markets provide opportunities for investors to buy securities from the underwriting banks for stock through IPO processes (Nikolova et al., 2020). The primary markets allow companies and other investors, to raise additional equity through rights offering (issue) and offer various opportunities to the investors including private

placement, preferential allotment, and generating debt capital to issue new short- and long-term bonds for governments and businesses (Saxena et al., 2020).

The Secondary Market

The secondary market is referred to as stock markets which include the NYSE, Nasdaq, and other exchanges worldwide in which investors trade securities among themselves (Duffy et al., 2020). Duffy et al.'s (2020) definition of the secondary market has three elements: the auction market and dealer market, the market participants, and information technology.

Auction Market and Dealer Market. In the auction market, individual and institutional investors congregate in one place to trade securities at their desired price. The best auction market is the NYSE (Saxena et al., 2020). In contrast, the dealer market does not require market participants to be in one location because they use an electronic network in which they hold an inventory of security buying and selling which can provide the best price for the investors (Duffy et al., 2020). In addition, there are other market venues that investment decision makers may consider. These include the dealer market (OTC market), which refers to stocks not trading on a stock exchange such as the Nasdaq, NYSE, or AMEX, and third and fourth markets (Fabiola et al., 2020).

Market Participants. Market participants and their behavior are important for SIDMS and efficient investment decision-making processes by broker-dealers, clearing agencies, depositories agencies, credit rating agencies, securities exchanges, self-regulatory and security traders' behavior (Fabiola et al., 2020).

Information Technology. The information technology platform supports SIDMS process and improves the scientific and standardized investment decision-making process (Sun, 2020). Thus, information technology tools can improve investment decision-making efficiency and stabilize investment returns (Wilkin & Chenhall, 2020).

The Measure of Investment Risk and Return on Asset

Investment risk and return are additional methods for decision makers to make choices about what to do with their financial assets (Graf & Korn, 2020). Investment risk and return impact businesses' financial welfare. Graf and Korn described various investment risks and returns in their study. The various risks are interest rates, exchange rates, business, operational, political, regulatory, market, default, inflation, liquidity, political, credit, reinvestment, and pandemics. Risks and returns might rise or fall and affect investment market value by expanding or restricting a new financial business area. These risks and returns also indicate the ease or difficulty of cashing out investments when decision makers want to overcome troubles such as liquidity shortages.

Graf and Korn's (2020) description of the level of risk and return related to decision-making investment or asset connects with the rate of return the investment decision-set could achieve. The rationale for exploring the risk and return is that decision makers who take on risky investments and ignore inspired capital decision makers should be compensated for their risk. Graf and Korn's work adds value to this study by demonstrating how risks and returns are significant factors in the financial investment decision-making process.

Higher returns have significant risks. The financial investments that include assets class, stocks, corporate and treasury bond products are riskier and worth trying from inspired decisions. Graf and Korn did a complete analysis free of critics and recommendations. Nevertheless, Graf and Korn (2020) could investigate the role of taxes and inflation during investment risk and return.

Taxes and Inflation

Taxation impacts SIDM processes because it affects investment return, investment performance, and portfolio selection choices (Cunha et al., 2020). Taxes and risk parameters help portfolio risk optimization by improving long-term investment profitability. Tax codes can also impact SIDM processes by allowing the depreciation of property income.

Choosing suitable business structures to claim profits and losses on the business operation is vital for portfolio selection. The business structuring method is an essential role in investment taxation. The sole proprietorship, which is taxed as an individual, partnerships, limited liability companies (LLCs), S-corporations, and C-corporations that allow some deductions for businesses, and incorporation can dramatically impact the investment tax landscape. The effect of inflation can impact investment decision-making processes as well. A poor move in the purchasing power of currency can cause a rise in the price of goods across the economy (Cunha et al., 2020). The fiscal aspects of these two elements of economies are crucial when considering investment profitability.

Investment Strategy Valuation Methodology

Investments that managers pursue must be those that enhance shareholders' value and profits (Britzelmaier et al., 2020). However, due to the limited amount of capital available for companies, investment managers use various capital budgeting techniques to determine which investments will yield the best return for each financial period (Leonard & William, 2013). Investment valuation methodology is the capital budgeting process that investment managers use to evaluate significant investments such as equipment and new projects and involves analyzing an investment project's cash inflow.

The study of project cash inflow determines how the expected investment return meets the benchmark of the project. The benchmark of financial projects might include discounted cash flow, payback, cost of capital, price to earnings (P/E), earnings per share (EP), enterprise value. Moreover, the using alternative financial metrics (payback period, real internal rate of return, and net present value) can be practical criteria to evaluate investment profitability.

Understanding Investment Goals

There are various characteristics of investment goals sought by buyers, including environmental, material, religious, risk tolerance, and social investment attitude (Vyas et al., 2020). Those characteristics between non-economic goals and materialism with risk tolerance attitude can significantly determine the investment decision-making process. Thus, investment goals can be classified by age, income, and outlook (Vyas et al., 2020). Various approaches to goal setting for investment decision makers to emphasize these criteria, which are an effective strategy for understanding the investment goal, using the SMART (specific, measurable, achievable, realistic, time-bound) method.

Returns Increase

The investment involves betting on the unknown. There are different strategies to increase an investment's return, including being consistent with decision makers' strategies and evaluating investment goals (Tulloch et al., 2020). These actions seek to control which risk-taking can go with business investment goals that contain stock market investment with a higher return and higher risk. This kind of investment in a government security with a lower return can provide a secure and stable investment return for banks. Investment professionals generally consider government securities safe, though they may earn enough to outpace inflation and provide the portfolio growth that the investment manager needs to reach their investment goals (Manfredi & Clayton-Hathway, 2021).

Investing in employees to continue education or learning skills to develop and improve their knowledge can increase the ROI. The means of reducing operation costs include diversifying investment, increasing brand awareness, investing in human capital, higher employee retention, and reducing investment cost can increase investment returns (Wang et al., 2023). The use ROI to evaluate its efficiency and profitability before making investment decisions can be an effective strategy to increase investment return.

Applying current value investment, social return on investment (SROI) criteria can effectively be a strategy to increase investment return (Lin et al., 2021). SROI can help investment management decision makers better understand the value of environment, social, and governance factors to assess socially responsible investing practices that may also be a good strategy for increasing investment return. Various researchers explored the decision-making process and financial investment (Lin et al.,

2021; Tulloch et al., 2020; Wang et al., 2023). These authors emphasized the significance of investment goals along with decision-makers strategies.

Asset Allocation Strategies

There are different types of investment strategies that enable investment managers to assess and capture portfolio risk and premium through the asset allocation process, which includes based model, portfolio construction, risk management, and performance measure (Melas, 2021). A models' strategy empowers investment decision-makers to understand and effectively manage the sources of a portfolio (Ahmed et al., 2021).

Moreover, asset allocation strategy replaces asset classes as drivers of asset allocation decision-making processes (Jacobs & Kobor, 2021). An equity orientation and using alternative asset allocations that maximize the probability of achieving dual term investment goals are among these techniques (Eti, 2021). Also, minimizing downside distress measures over a long time can be an effective asset allocation analysis (Lima et al., 2021).

Monetary and Fiscal Policies

Monetary and fiscal policy can increase public welfare and maintain long-term macroeconomic and investment stability (Gross & Zahner, 2021). Public spending, the composition of expenditures, and fiscal architecture with institutional quality can influence economic growth and investment development (Chugunov et al., 2021). Thus, an effective monetary and fiscal policy can achieve moderate inflation, maintain sustainable economic development, balance public finances, and have debt sustainability which increases investment returns (Gross & Zahner, 2021). Monetary and fiscal policies

is associated with favorable investment conditions to create economic growth and job creation (Chugunov et al., 2021). Creating good environmental quality and reducing government regulation can increase investment profitability (Gross & Zahner, 2021).

Political Situation

Political uncertainty impacts the investment decision-making process. Investment decision-making processes are highly complex and require investment professionals to generate streams of return with reduced costs over a long period (Richards, 202). There are various factors influencing the effectiveness of investment return decision making and performance, including political stability and technology capacity (Y. Liu et al., 2021). Various categories of risk affect the investment decision-making process to increase investment return and investment performance, including economic, technical, environmental, social, and political (Hashemizadeh et al., 2021).

Investment Performance

Social and environmental sustainability affect financial investment performance and investment return (Johansson et al., 2021). There are various factors influencing the investment management decision-making process to increase investment performance, including prospect, market, and stock information evaluation (Cao et al., 2021). Thus, increased investment in R &D and human capital development can give an effective increase in investment performance (Chachuli et al., 2021).

Moreover, reducing government policy regulations concerning investment, currency hedging, selecting the best investment products, and using effective investment calculation methodology to calculate the cost benefits of the investment may aid

investment management professionals in improving investment performance (Jin et al., 2021). Using multiple factors market to evaluate performance, investing in various types of instruments, and selecting the most-skilled managers are also effective ways to increase investment performance (Dopierała & Mosionek-Schweda, 2021).

Transition and Summary

Section 1 of this study included the study background, problem statement, purpose statement, research questions, theoretical framework, study significance, population, sampling, and contributions. Section 1 also presented an overview of the methodology and critical terms related to strategic investment strategy, investment return, and performance.

Section 1 included a literature review that highlighted the prospect theory of Kahneman and Tversky (1979) and the decision-making process. The literature review in Section 1 depicts the evolution of prospect theory and relevant theories. Strategic investment decision-making and measuring investment risk and return are the last part of Section 1.

Section 2 includes a reiteration of the purpose statement, the role of the researcher, and the participants. A discussion of the research method and design, population, and sampling follows. Ethical research steps and the data collection instrument are given next. Data collection techniques, data analysis, and the study's validity are then presented. A transition and summary are the last portion of Section 2.

Section 2: The Project

Problem and Purpose

The specific business problem is that some investment leaders do not understand the statistical relationship between investment strategy, investment returns, and investment performance. The purpose of this quantitative correlational research study will be to examine the statistical relationship between investment strategy, investment returns, and investment performance. The independent variables are investment strategies such as growth, value, small-cap, and investment returns. The dependent variable is investment performance. There will not be a targeted population because secondary data from Morningstar will be used to conduct this research study.

Role of the Researcher

Research design, validity, reliability, and generalizability are essential to the integrity of the design and the data used to ensure study credibility. Accepting responsibility for the research study is the researcher's responsibility (Saunders et al., 2015). The researcher's role in quantitative research is critical for data collection strategies, instrument selection and use, and implementing the analysis (Singer, 2018). The common challenges for quantitative researchers include data collection, instrument measurement, validity, and reliability (Richards et al., 2019). In this study, I will use quantitative research with credible data collection measurement and analysis.

Also, my role will include professional responsibility, using the result while following ethical principles, and strict respect for the study's validity and reliability while choosing an appropriate method and design. The study's validity and reliability should reflect accurate data analysis results to draw valid and reliable conclusions. The study's validity and reliability are fundamental features of this study. Moreover, I will mitigate any biases in this research study.

As the researcher, I had no experience in the investment industry before conducting this study and have no relationship with the Morningstar database before this study. I will apply moral rules and professional codes during data collection, analysis, reporting, and publishing of information about the study. I have an ethical and moral obligation to respect the data accuracy by accepting Walden University's IRB certificate of approval before beginning data collection. The principles of the *Belmont Report* include *respect for persons*, *beneficence*, and *justice* (Kahneman & Tversky, 1979).

Participants

The study will not contain participants because the data will come from *Morningstar*. U.S. securities data, including mutual funds, bonds, and derivatives. The research will examine the statistical relationship between investment strategy, investment returns, and investment performance. Thus, the objective of this research study is to develop effective strategies that can lead investment leaders to increase investment returns, and investment performance. There will not be a participant or group for this study, I will use secondary data from US securities data available to the public. Using

secondary data sources allows researchers to access a large amount of previously collected data about the subject in a short time (Poly et al., 2019; Yin, 2018).

Research Method and Design

Research Method

Saunders et al. (2015) described three research methods: quantitative, qualitative, and mixed. Churruca et al. (2021) defined the qualitative approach as exploring human experience and phenomena. Austin et al. (2021) stated that the qualitative method can explore human judgments, manners, and experiences that researchers interpret from participants' input. Researchers can use the qualitative research method to highlight phenomena and address the research question (Churruca et al., 2021). Researchers' opinions that originate from personal biases can influence study outcomes. The qualitative method will not be suitable for this study because of the need for statistical analyses (Saunders et al., 2015). The qualitative method is associated with positivism and highly structured data collection techniques (Yin, 2018). The qualitative approach will not fit this study.

The quantitative method as conducting studies and examining data for trends and patterns (Saunders et al., 2015). Quantitative methodology is a numerical data analysis technique to examine statistical data or generate binary data for a research study (Turnbull et al., 2021). Researchers use the quantitative research method to attempt to interpret the meaning of the data to find potential relationships between different variables (Austin et al., 2021).

The mixed method is proper when researchers aim to achieve a better understanding of a research problem (Robinson, 2019). The mixed method balances the weaknesses of the quantitative and qualitative methods (Austin et al., 2021). Despite the benefits of the mixed method, scholars can face a design that takes time and resources to plan and apply (Uprichard & Dawney, 2019). The mixed methods approach will not fit this study because of its complexity, time required, lack of resources, and result interpretation.

Research Design

Researchers employ several types of quantitative research designs, including experimental, quasi-experimental, and correlational (Saunders et al., 2015). The design for this study is correlational to examine the statistical relationship between independent and dependent variables. Researchers use the correlational design to identify variables and look for a relationship between independent and dependent variables (Austin et al., 2021).

The experimental model can be used to predict cause and effect but not the relationship (Saunders et al., 2015). The quasi-experimental design is normally used to select only a specific range of values of an independent variable, but a correlational study measures all available values of an independent variable (Austin et al., 2021). However, in quasi-experimental research, the independent variables are manipulated before the dependent variable is measured, eliminating the directionality of the problem (Saunders et al., 2015).

Moreover, in experimental and quasi-experimental designs, the degree of cause and effect are assessed (Saunders et al., 2015). I did not select the experimental and quasi-experimental research designs for the proposed study because they do not allow me to examine various relationships between variables. Therefore, the experimental and quasi-experimental designs are not appropriate for this study. The correlational design is appropriate for the proposed study because it will allow me to identify variables and look for a relationship between the independent and dependent variables. I will use a quantitative correlational design to examine the statistical relationship between investment decision-making strategies, the measure of investment returns, and investment performance.

Population and Sampling

The population and sampling are integral to all research undertakings. Populations refer to a complete set of elements, whether persons or objects, that possess some common characteristics defined by the sampling criteria established by the researcher (Han, 2019). The target population for the study will consist of U.S. securities data that have the higher performance to be collected from Morningstar's annualized performance for individual mutual funds for the period 2019 to 2023. The annualized performance of the S&P 500 will be used to calculate the investment return for this period. I will employ a purposive sampling technique to select mutual funds that contain a higher portfolio for at least three years consecutive).

Aligning the population with the research question may allow researchers to collect data from the industry with clarity (Poly et al., 2019). I will use the quantitative

correlational design to examine the relationship between investment strategies (growth, value, small cap), investment returns, and investment performance. Having an accurate sample size helps identify the relationship between dependent and independent variables to produce a valid result (Annan et al., 2019). To effectively manage the sample, I will use a purposive sample technique to select mutual funds that contain a higher performance portfolio in U.S. securities companies.

There will be established inclusion and exclusion criteria. Thus, using a purposive sample statistical calculation may help to establish the minimum sample size; it can be used as an acceptable point for this study (Han, 2019). Purposive sampling is a form of nonprobability sampling in which researchers rely on their own judgment when choosing data to include in their study (Annan et al., 2019). Purposive sampling presents a low-cost collection alternative that may allow the researcher to create an easily manageable sample for the researcher (Wei et al., 2019). Consequently, due to the selected sample, it may not be representative of the general population (Annan et al., 2019). In addition, a constructed sample can be the appropriate tool from which to draw conclusions about the study (Han, 2019).

Multiple linear regression will be used to analyze the relationship between the variables in this study. Moreover, I will use *G*Power3* to determine the representative sample size that will provide adequate statistical power. This analysis will be useful to assess the appropriate sample size for the study. The use of a component of *G*Power3* will be an effective analytical tool for this research study. *G*Power3* analysis is considered an excellent power analysis software tool to determine the required sample

size of the proposed research study (Binde & Romild, 2019). *G*Power3* is a statistical software for determining the needed sample size when using Pearson correlations, statistical tests for simple linear regression coefficients, and multiple linear regression coefficients for fixed and random-predictor models (Faul et al., 2019).

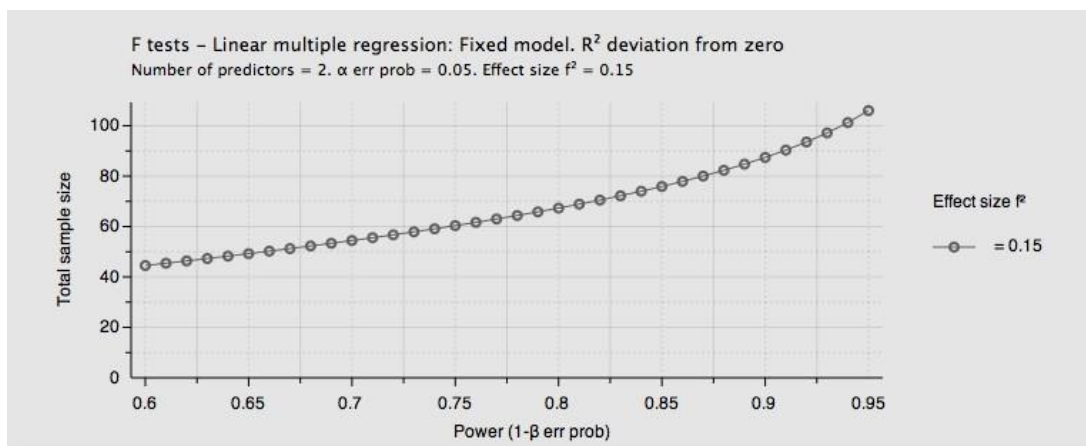
G*Power3

*G*Power3* is an additional tool to determine the representative sample size that will lead to a study's accuracy (Parnell, 2019). As noted above it is a valuable instrument to assess the appropriate sample size for this research study and will be an effective analysis tool for this research study. This software will be an excellent tool to examine the sample size for this research.

A power analysis, using *G*Power* version 3.1.9 software, will be conducted to determine the appropriate sample size for the study. An a priori power analysis, assuming a medium effect size ($f^2 = .15$), $\alpha = .05$, and 2 predictor variables, identified that a minimum sample size of 68 participants is required to achieve a power of .80. Increasing the sample size to 146 will increase power to .99. Therefore, as a researcher, I am seeking 80 or more which will be greater than 68 and 146 participants for the study (Figure 1).

Figure 1

Power as a Function of Sample Size



The use of a medium effect size ($f^2 = .15$) will be appropriate for this proposed study. The medium effect size will be based on the analysis of data from the Morningstar Mutual fund database which will be the outcome measurement

Ethical Research

Researchers are responsible for choosing the research methodology, collecting data, validating the data instrument, and achieving validity and reliability while addressing ethical issues (Garattini et al., 2019). Researchers should apply moral rules and professional codes during data collection, analysis, reporting, and disseminating information about the research study. Researchers must consider participants' confidentiality and privacy (Larkin et al., 2019). Before commencing with the data collection and analysis processes, I will request permission from the Walden University institution review board (IRB) to obtain its certificate of approval. I will establish ethical data collection protection for this study by assuring that the data will not be endangered (Larkin et al., 2019). Researchers are responsible for ensuring data quality and

accuracy in the study with sufficient information (Bodley et al., 2019). These ethical criteria are designed to guarantee data quality confidentiality and respect throughout the data collection process (Garattini et al., 2019).

Another means of protecting study participants is to use an informed consent form. Using this form is the way to publish information about the study. 21). Perspective participants will have the choice to complete the survey or not complete it without being penalized (Newman et al., 2021). I will subscribe to the Morningstar platform to pay monthly fees, allowing me access to the database. Data quality and accuracy are important for study integrity and validity (Staples et al., 2021). Researchers must demonstrate high ethical standards by using a valid research methodology to provide accurate results (Ritchie, 2021). In addition, using the secondary data and the lack of human subjects in this study will eliminate the need for participation consent. Moreover, I will establish research protocols including a process to maintain all data related to the study in a secure location for a minimum of five years after publication.

I will list a sample of data in Appendix A and the Table of Contents.

Instrumentation

Research instruments, such as surveys, are tools used to gather, measure, and investigate data connected to the study (Beveridge et al., 2019; Parnell, 2019). This study will not use any instrument for data collection but will use secondary data from *Morningstar*. Data collection for this study will come from secondary sources and I will not use an external instrument. I will extract data from *Morningstar's Expert Database* about mutual funds, bonds, and derivatives. The *Morningstar* database is a subscription-

based market analysis research tool containing multiple categories of securities products that characterize the size of companies, annual revenues, expenses, value, and performance data that financial market analysts use when conducting market research analysis (Staples et al., 2021).

Data Collection Technique

I will collect data from *Morningstar* on the U.S. securities market to collect the data. There are advantages and disadvantages to its use. Thus, researchers may use multiple data collection methods to gather raw data for their research studies such as interviews, questionnaires, tests, and observations (Bork et al., 2021). The quality of data collection contributes to the analysis, accuracy, and reliability of quantitative research (Parnell, 2019).

The challenge with data-gathering from various social networks and Internet resources are new laws in the field of personal data processing (Bork et al., 2021). Saunders et al. (2015) stated that using secondary data is inexpensive due to its prior collection. Researchers should do their best to obtain primary data for their study, but use of secondary data is an effective method when conducting larger quantitative studies (Beveridge et al., 2019). A drawback to using secondary data is survivorship bias (Saunders et al., 2015). There are many chance of survivor bias to occur due to data records which may not cover the entire study period and that may be excluded from the study (Bork et al., 2021). Survivorship may possibly lead to illogical or inaccurate conclusions (Beveridge et al., 2019). There is a chance that the researchers may exclude important information or perhaps miss observation during the data collection processes

(Saunders et al., 2015). As a researcher, I will ensure that the initial data collection procedure will be appropriate and verified for accuracy by cross referencing *Morningstar* investment market data from 2019 to 2023.

Research Question and Hypotheses

The research question and associated hypotheses of this research study are:

What is the statistical relationship between investment strategy, investment returns, and investment performance?

This study will include two independent variables: investment strategy and investment returns. The dependent variable will be investment performance. The associated hypotheses are:

H0: The linear combination of investment strategies and investment returns will not significantly predict investment performance.

H1: The linear combination of investment strategies and investment returns will significantly predict investment performance.

Data Analysis

What is the statistical relationship between investment strategy, investment returns, and investment performance?

Hypotheses

A hypothesis is a provisional idea whose merit deserves further evaluation (Bui, 2021). There are two hypotheses, the null (H0) and alternative (H1), which are related to my research questions is to examine the relationship between investment strategies such as growth, value, small-cap (independent variable) investment returns (independent

variables), and investment performance (dependent variable). The H0 and H1 reflect the appropriate statistical notation to examine the research study questions.

H0: The linear combination of investment strategies and investment returns will not significantly predict investment performance.

H1: The linear combination of investment strategies and investment returns will significantly predict investment performance.

Various statistical models are available for researchers to evaluate the research question and hypotheses (Faul et al., 2019). Multiple linear regression, t tests, chi-square, ANOVA, and screening criteria are useful tests to consider in this study.

Richards et al. (2019) stated that using a quantitative methodology may be suitable when examining the relationship between variables, and may use several statistical tests including path analysis, multiple analysis of variances, and multiple regression analysis (Richards et al., 2019). Weaver (2023) stated that there are many techniques for researchers to reduce an extensive list of variables to be associated into manageable factors for effective evaluation.

Faul et al. (2019) explained that using multiple linear regression as an effective statistical technique to examine the relationships between predictor variables and a dependent variable. In this study, there are two predictor variables (investment strategy, investment returns) and an independent variable (investment performance). Gathering raw data may characterize the data-cleaning commencement process (Saunders et al., 2015). I will use *Morningstar* U.S. equity security data for the period 2019 to 2023 that contain all class 'A' stock investment.

I will exclude international investment funds, emerging market investment, and any other investment products that are not selected. Thus, using performance data cleaning strategies may improve the quality of data and reduce the likelihood of false positives (Richards et al., 2019). The data cleaning process may convert raw data into a usable form for analysis (Creswell, 2014). Therefore, I will scrutinize the aggregate raw data by removing redundant fields that will be excluded from analysis.

I will use *SPSS 24* software to examine the hypotheses and verify key assumptions of normality, linearity, independence of residuals to determine outliers, and multicollinearity to the distribution of variables in this study. I will use a normal P-P plot of regression residuals to test the data for normality and linearity to examine the relationship between variables. Using visual checking of the plotted data point may be an effective test technique for linearity (Richards et al., 2019).

I will test the distribution of the residuals by using scatter plots to determine the degree of linearity. Homoscedasticity occurs when there is a constant variance of error for all independent variables (Weaver, 2023). Therefore, I will use a scatter plot to assess for the presence of homoscedasticity. Linear regression is another way to investigate the data of this study. This technique is a statistical test comparing dependent and independent variables with Pearson correlations and statistical tests (Faul et al., 2019). Multiple linear regression will be used to examine the statistical relationship between the independent and dependent variables.

Pearson correlation can be used to examine the presence of multicollinearity (Parnell, 2019). This technique will determine linear dependence among all variables.

Parametric assumption may face violation for any conclusion that understates probable relationships among the variables (Richards et al., 2019). To satisfy the regression, I will develop or omit a composite variable where appropriate. The measures of central tendency are focused on verifying each assumption (Weaver, 2023). Descriptive statistics can provide accurate details about the sample size of the research study (Faul et al., 2019).

Therefore, descriptive statistics will be used to provide the standard deviation and the mean for all the variables for the sample period. Moreover, I will use multiple linear regression to determine the extent of the relationship with investment performance based on a significance level of $p=0.05$.

Example: The equation for a simple linear regression is $Y = mX + b$, where Y is the dependent variable, X is the independent variable, m is the estimated slope, and b is the estimated intercept.

Multiple Linear Regression. I will conduct a multiple linear regression analysis to test hypotheses for this study. The regression test will be suitable for this study because the research question examines the relationship between the independent and dependent variables (Karim et al., 2023). Regression analysis enables researchers to monitor and predict the different variables of this research. Also, linear regression is another way to investigate the data of this study by comparing dependent and independent variables with Pearson correlations and statistical tests (Faul et al., 2019).

Descriptive statistics include determining frequency, means, median, variance standard deviation, confidence interval, and mode for all variables (Weaver, 2023).

Multiple linear regression analysis will be a tool to examine the scatter plot's normality and probability plot (P-P) of the regression standard residual. The effect size of the correlational analyses are in line with Cohen's (1992) guidelines, which indicate that a correlation coefficient $>.10$ is associated with a small effect, $>.30$ with a medium effect, and $>.50$ with a significant effect. Multiple regression analysis is the best option. I will use *SPSS 24* software to examine the relationship between the independent variables and the dependent variable of this study. *SPSS 24* will be used to obtain descriptive statistics for all demographic criteria and variables.

Although a multiple regression analysis will be optimal for the study, I will evaluate additional analyses. There are different types of research include the correlation coefficient. Scholars acknowledge the correlation coefficient (r) (Karim et al., 2023). *The symbol r stands for the* measure of the linear relationship between two variables (e.g., x , y) *and indicates* the product-moment correlation coefficient or Pearson's correlation coefficient that establishes the relationship change between two variables and how these variables can act in conjunction or move together (Weaver, 2023).

T-Tests, Chi-Square, and ANOVA

T tests, chi-square, and analysis of variance (ANOVA) are means of investigating data. *T* tests, chi-square, and ANOVA are not suitable for this study. The *t* test is usable when researchers have two sets of data and comparing distinct mean scores. Chi-square is used to compare categorical variables (Weaver, 2023). The chi-square measurement is weak and can provide accurate results only for large study samples and will give errors

for a small sample study. The ANOVA is used to test statistical differences between the means of three or more independent variables (Faul et al., 2019).

The ANOVA shows errors in a sample population that does not follow the normal distribution. Also, the ANOVA is not usable when a study includes two or more dependent variables. Therefore, it will not fit this study. Even though the ANOVA is unsuitable in this study, a two-way ANOVA is a helpful tool to examine the differences in all study variables. As a result, I will consider linear multiple regression as a test of the hypotheses for this study.

Data Cleaning and Screening Criteria

I will use proper data cleaning and screening guidelines for this study's accuracy. Yang (2022) described data cleaning and screening as the process of adapting data to guarantee that it is free of insignificance and unfit information. Data cleaning and screening guidelines are ways to isolate inappropriate, unrelated, and inadequate parts of a dataset. Data cleaning and screening guidelines become ways to clean unclear portions of the data (Yang, 2022). By using data cleaning and screening guidelines:

1. I will control and check for any misplaced information with an indispensable safeguard.
2. I will eliminate outliers to avoid inexact results.
3. I will collect data sources over fewer than three years.

These data cleaning and screening criteria will give good outcomes and address the research questions and hypotheses.

Assumptions Pertaining to the Statistical Analyses

Treiblmaier (2022) believed that the most significant statistical assumptions are equality, linearity, and normality of variance. Equality of variance, such as homogeneity of variance, shows equal variance across samples by evaluating the mean differences. Linearity indicates the relationship between the independent variable(s) and the dependent variable. The lack of linearity assumption in this study will lead to erroneous results. Normality stipulates that the researcher observe constant variables that are routinely allocated (Aduba & Mayowa-Adebara, 2022). I will use these assumptions to act regarding any violation by deceptive data and use accurate inferential statistical analysis to give correct results.

Study Validity

The reliability and validity of an instrument must be tested, and test-retest can be a highly reliability tool to analyze the correlation coefficient (Agnihotri, 2021). The validity and reliability of a study are essential aspects. A valid and reliable study can help business practitioners understand the importance of information while providing a framework for financial decision-making.

The study's validity and reliability reflect accurate data analysis results from which to draw valid and reliable conclusions and can be re-administered after a second administration retest at a 90% confidence level which can confirm the instrument's reliability and validity. This study includes a non-experimental design and as such, threats to internal validity are not applicable. However, threats to statistical conclusion validity are a factor that can lead the researcher to

reach an incorrect conclusion about a relationship in their observations (Kasuya, 2019). Threats to statistical conclusion validity are Type I and II errors (Newman et al., 2021). Threats to statistical conclusion validity are conditions that increase Type I errors (rejecting the null hypothesis when it is true) and Type II errors by accepting the null hypothesis when it is false (Kasuya, 2019). Researchers might draw incorrect conclusions if the participants do not provide appropriate answers or complete data sets for statistical analysis (Newman et al., 2021). Incorporating data triangulation may mitigate these threats. However, the results may not be representative of the entire U.S. financial equity market, which can be a threat to validity of the study (Kasuya, 2019). Thus, the finding may only be limited to the study due to the limitations of the sample size, characteristics of U.S equity market and mutual funds, and period chosen.

Transition and Summary

Section 2 repeated the purpose statement, the role of the researcher, and the participants. Section 2 included the research method and design, population, and sampling. Ethical research and analysis of the data collection instrument followed. Section 2 also included data collection techniques, data analysis, and discussed the study's validity. A transition and summary concluded Section 2.

Section 3 of this study will present the study's application to professional practice and implications for change. The application to professional practice and implications for change will begin with an introduction that places the context of this research study and the motivation for examining the statistical relationship between investment strategy,

investment returns, and investment performance. After the introduction, I will present the findings, and their application. I will also include the study's potential impacts on social change and give recommendations for further actions. I will also include suggestions for further research and reflections. The study ends with conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlational research study was to examine the relationship between investment strategy, investment returns, and investment performance. The independent variables were five-year total returns (2019-2023), and investment strategy. The dependent variable was investment performance as measured by the sharp ratio (five years performance). Secondary data from Morningstar was utilized in order to address the following research questions and hypotheses:

What is the statistical relationship between investment strategy, investment returns, and investment performance?

H0: The linear combination of investment strategies and investment returns will not significantly predict investment performance.

H1: The linear combination of investment strategies and investment returns will significantly predict investment performance

The results of the multiple linear regression was significant, $F(4, 119) = 44.874$, $p < .001$, $R^2 = .609$. In the final model, two predictors were significant, Total five year returns ($B = 0.035$, $p < .001$), and large cap investment strategy ($B = -0.372$, $p = .033$) were significant predictors of investment performance.

Presentation of the Findings

Both descriptive statistics and multiple regression were employed in this study. The study variables included the independent variables of investment strategies (growth large cap, mutual funds, and other), five-year total return and the dependent variable five-

year Sharpe ratio. The other investment strategy category consisted of Baron asset, derivatives, equity income, mid cap, and small cap investment strategies. This category served as the reference category in multiple regression. Multiple regression was utilized in order to determine any significant relationship between the independent variables and the dependent variable. According to Field (2018), a multiple regression is used to predict a continuous dependent variable (five-year total return in this case) based on multiple independent variables. Multiple regression also allows for the determination of the overall fit (variance explained) of the model and the relative contribution of each of the predictors to the total variance explained. The significance of the regression coefficients were assessed in order to determine whether or not to reject the null hypotheses. If the p -value was less than .05, the independent variable is a significant predictor of the dependent variable. If, on the other hand, the p -value is greater than .05, the independent variable is not a significant predictor. In this way, the null hypotheses would be either rejected or not rejected (fail to reject).

Descriptive Statistics of Study Variables

There were $N = 120$ cases that were utilized in this study which consisted of data on the independent variables of investment strategies (growth large cap, mutual funds, and other), five-year total return and the dependent variable five-year sharpe ratio. Investment strategy was a nominal variable, and thus had to be dummy coded for the purpose of multiple regression. Descriptive statistics of the variables measured at the interval level are provided in Table 2. The five-year total return ranged from -0.14 to

83.89 ($M = 40.75$, $SD = 19.23$), and the five-year Sharpe ratio ranged from -0.10 to 4.03 ($M = 0.92$, $SD = 0.89$).

Table 2

Descriptive Statistics of Study Measures

	Min	Max	M	SD
Five year total return	-0.14	83.89	40.75	19.23
Five year Sharpe Ratio	-.10	4.03	.92	.89

Evaluation of Parametric Assumptions

Multiple regression analysis was conducted in order to determine if the independent variables total returns for all five years and investment strategy predicted investment performance as measured by the sharp ratio. However, there are five assumptions that need to be met prior to conducting multiple regression which included linearity, homoscedasticity of residuals, absence of multicollinearity, absence of outliers, and normality of residuals.

There was normality of regression residuals as indicated by visual inspection of a histogram (Figure 2) as well as a P-P plot (Figure 3).

Figure 2

Histogram of Regression Residuals (Total returns for all five years and investment strategy predicting investment performance)

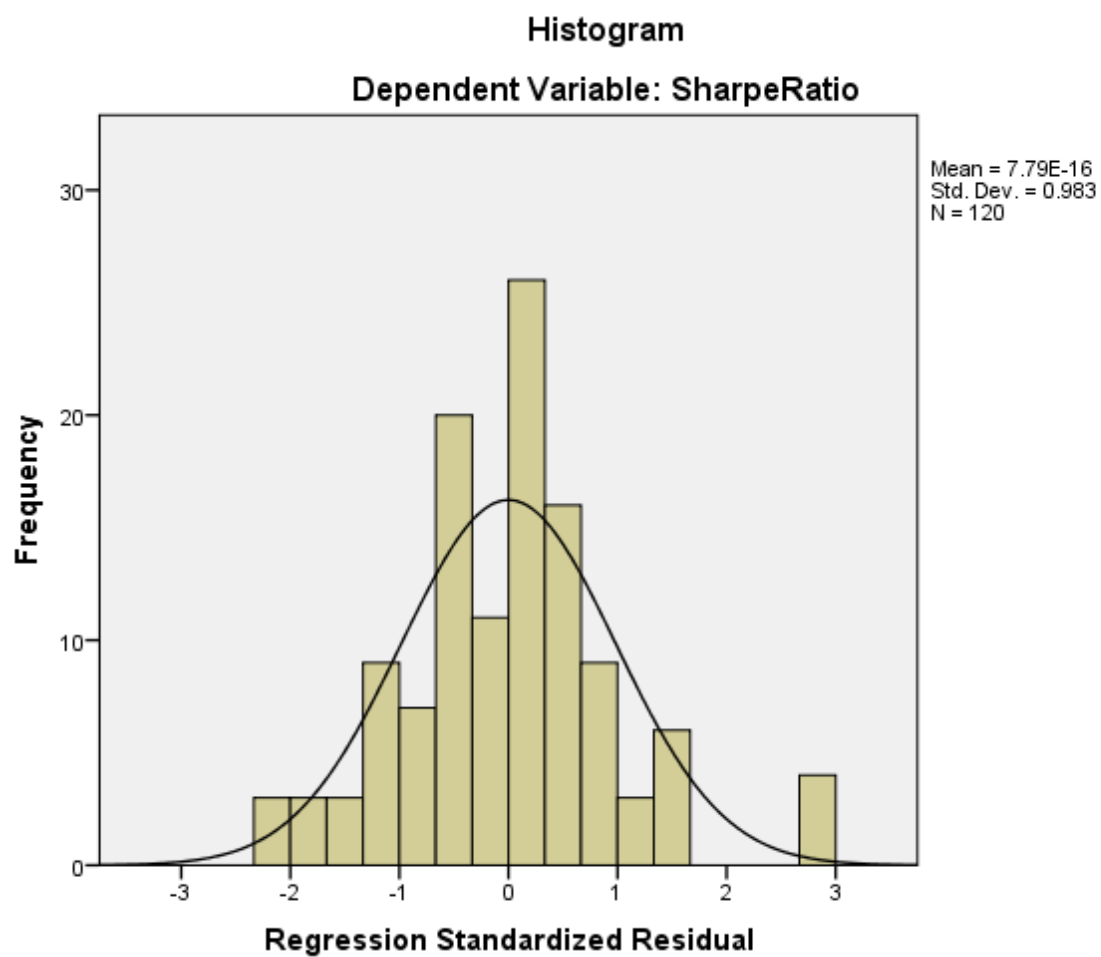
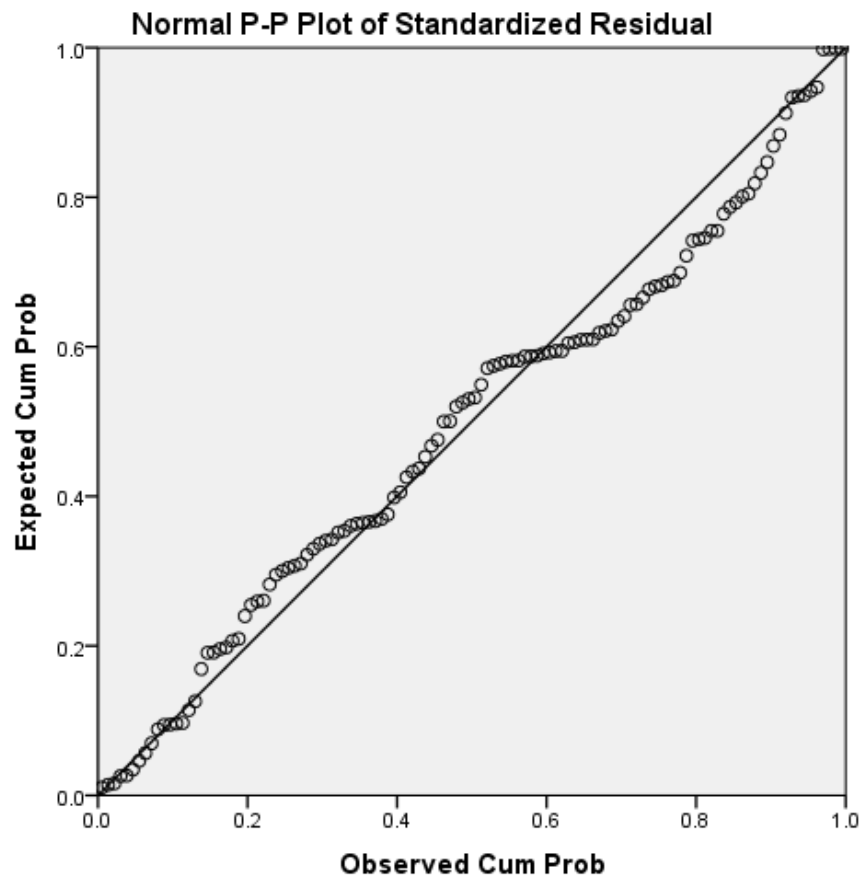


Figure 3

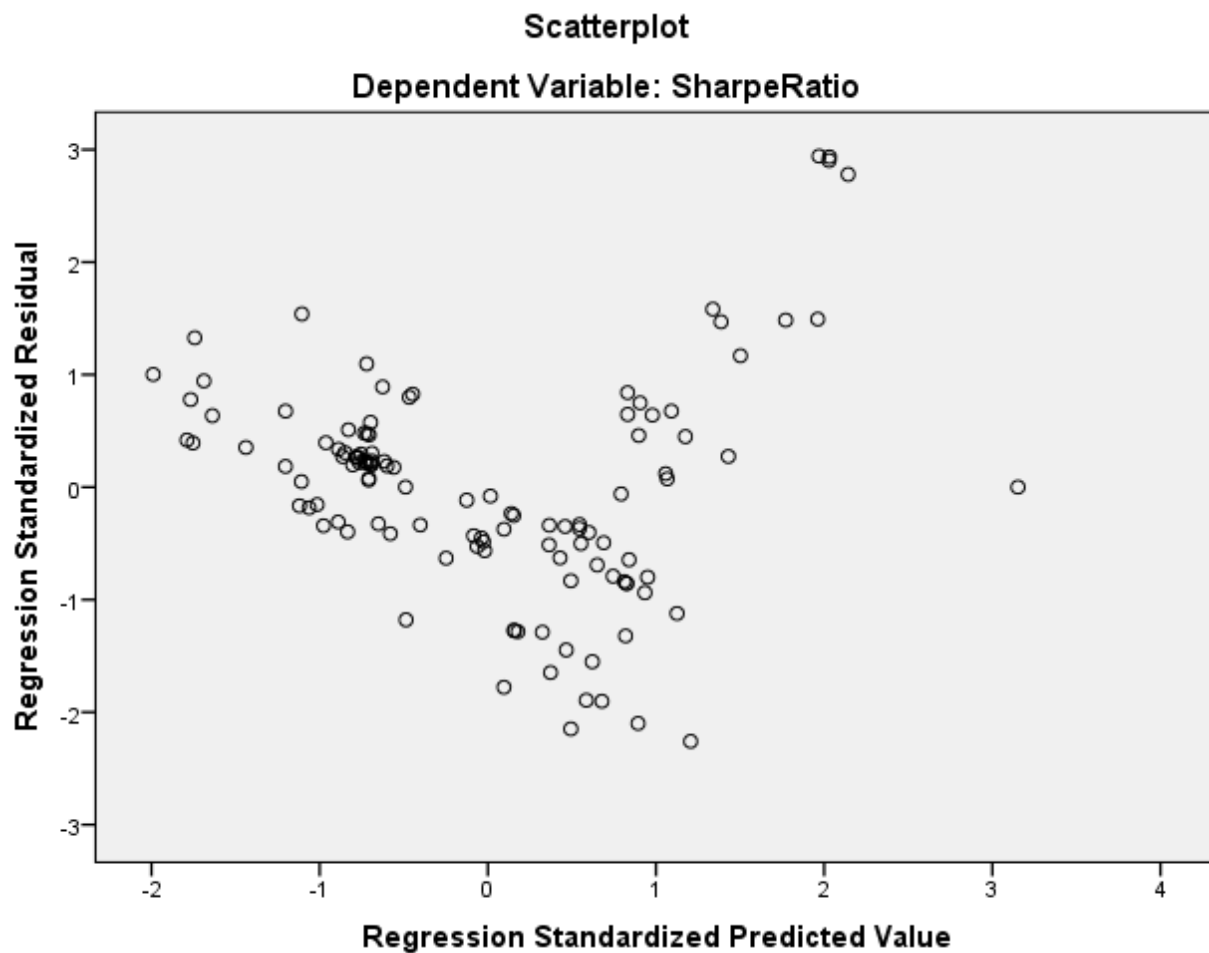
P-P Plot of Regression Residuals



There were no violations of the linearity and homoscedasticity assumptions as indicated by a scatter plot of predicted regression residuals versus regression residuals (Figure 43).

Figure 4

Scatter Plot of Predicted regression Residuals versus Regression Residuals



There were no variance inflation factors (VIFs) that exceeded 10, thus no issues with multicollinearity. Additionally, outliers were assessed through standardized regression residuals. There were no standardized residuals exceeding three standard deviations, thus no outliers.

Inferential Results

Multiple regression analysis was conducted at the 5% level of significance in order to determine if the independent variables total returns for all five years and investment strategy predicted investment performance as measured by the sharp ratio. The overall model was significant, $F(4, 119) = 44.874, p < .001, R^2 = .609$. The model explained 60.09% of the variance in predicting sharper ratio ($R^2 = .609$). Total five year returns ($B = .035, p < .001$), and large cap investment strategy ($B = -.372, p = .033$) were significant predictors of the Sharpe ratio. Specifically, an increase in total five year returns results in an average increase in Sharpe ratio. Additionally, compared to other investment strategies, large cap results in an average decrease in the Sharpe ratio. Table 3 provides this information.

Table 3

Regression Coefficient Table for Investment Strategy and Five-Year Total Returns (2019-2023), Predicting Five-Year Sharpe Ratio

	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>P</i>	Collinearity Statistics
	<i>B</i>	<i>SE</i>	β			VIF
(Constant)	-.433	.150		-2.881	.005	
Growth	-.032	.147	-.016	-.215	.830	1.712
LargeCap	-.372	.172	-.145	-2.164	.033	1.319
MutualFunds	-.030	.142	-.015	-.209	.835	1.475
Other**						
TotalFiveyearReturnsFrom2019	.035	.003	.750	11.459	.000	1.260

* $F(4, 119) = 44.874, p < .001, R^2 = .609$

** Reference category

Bootstrapping was performed in order to generate 95% confidence intervals for the regression coefficients and is provided in Table 4. Results indicated that large cap investment strategies resulted in a decrease in the sharpe ratio ($B = -.372, p = .010$), and an increase in total five year returns results in an increase in the sharpe ratio ($B = 0.035, p = .001$). No other bootstrapped estimates were found to be significant ($p > .05$).

Table 4

Bootstrap for Coefficients

	<i>B</i>	<i>SE</i>	<i>p</i>	95% Confidence Interval	
				Lower	Upper
(Constant)	-.433	.142	.005	-.736	-.162
Growth	-.032	.149	.819	-.315	.294
LargeCap	-.372	.140	.010	-.668	-.110
MutualFunds	-.030	.105	.777	-.232	.186
TotalFiveyearReturnsFrom2019	.035	.004	.001	.027	.042

Analysis Summary

The purpose of this quantitative correlational research study was to examine the relationship between investment strategy, investment returns, and investment performance. The independent variables were five-year total returns (2019-2023), and investment strategy. The dependent variable was investment performance as measured by the sharp ratio (five years performance). Secondary data from Morningstar was utilized in order to address the following research questions and hypotheses:

What is the statistical relationship between investment strategy, investment returns, and investment performance?

H0: The linear combination of investment strategies and investment returns will not significantly predict investment performance.

H1: The linear combination of investment strategies and investment returns will significantly predict investment performance

The results of multiple regression revealed that total five year returns ($B = 0.35, p < .001$), and large cap investment strategy ($B = -.372, p = .033$) were significant predictors of the Sharpe ratio. Specifically, an increase in total five year returns results in an average increase in Sharpe ratio. Additionally, compared to other investment strategies, large cap results in an average decrease in the Sharpe ratio. Applications to Professional Practice

The study's findings may provide useful ways for enhancing investment returns to investment professionals in the United States. Strategies for investing have been a difficult issue in sustaining investment industry success, as many organizations have lost considerable assets due to a lack of effective strategies (Jensen & Maheu, 2018). As a result, the effectiveness of investment strategies has become critical for successful investing. This research could be useful in investment practice by offering a realistic model for better understanding the connections between statistical relationships between investment strategies and investment returns and performance. The significant investment strategies model found in this study could help investment executives improve growth plans while also raising investment return and performance.

Theoretical conversation on findings

The theoretical frameworks used as a basis for this study is the prospect theory of Kahneman and Tversky (1979). The prospect theory was the means to verify the rigor

of the hypotheses and assumptions established. The findings of the study align with Kahneman and Tversky (1979) Prospect theory. The Linearity indicates the relationship between the independent variable(s) and the dependent variable. Gu and Yoo (2021) stated that prospect theory can be used to evaluate the hypothesis that investors seek portfolios that display attractive distributions. The mutual fund market investors are known to be seeking returns, and the mutual funds attract higher net flows when they have better prospect theory values (Gu & Yoo, 2021). The prospect theory's general concept is that if two choices are presented to an investor and are both equal, the one presented in terms of potential gains will be chosen (Kahneman & Tversky, 1979). Wang et al. (2023) qualified prospect theory as a riskier means of decision-making in finance. In coding phase, Kahneman and Tversky pointed out that decision-makers are concerned about the benefits and losses when making decisions. SIDMS involve identifying, evaluating, and selecting the best investment among various investment products to give a company a competitive advantage (Meredith & Zwickel, 2020). Cost-benefit analysis is an effective tool for SIDMS to increase investment return and performance (Herfeld, 2020). There are multiple SIDM processes to increase investment returns and performance by selecting the best investment assets and strategies (Gu & Yoo, 2021). Rational choice theory (RCT) includes the postulation that when there are various investment options under scarcity, people choose the option that maximizes their individual investment goals (Herfeld, 2020). These include instances when investment decision-makers may calculate the probability of expected outcomes and weigh them against expected utility before deciding (Bridgers et al., 2020). The author's analysis is

the best means to understand how prospect theory is helpful in the quest for profitable investment decisions. (Gu & Yoo, 2021) stated that prospect theory is a concept of evolutionary psychology. C. Li et al. (2023) traced prospect theory's origin in evolutionary psychology and confirmed the idea of prospect theory's beginning as a model based on risk-sensitive appreciation. The risk-sensitive appreciation model indicates that financial leaders' reasoning can solve specific financial problems related to finding appropriate investments to advance their business. C. Li et al. (2023) insisted that the same type of reasoning related to decisions is critical to understanding appropriate investment outcomes. The evolution of prospect theory cannot be understood only from leaders' mistakes but also evolutionary psychology. Cumulative prospect theory (CPT) as a variation of prospect theory, describes and predicts investment decision makers behaviors under risk and uncertainty (Lu et al., 2020).

Conclusion in this study is that I have elaborated the theoretical basis framework of prospect theory and analysed the irrational and rational behavior of investment leaders decision making processes in investment markets based on prospect theory. Gu and Yoo (2021) highlights the statistical relationship between strategy and investment return which is supported by the positive statistical correlation between Total five year returns ($B = 0.35, p < .001$), and large cap investment strategy ($B = -.372, p = .033$) which were significant predictors of investment performance observed in Sharpe ratio in this study. Specifically, an increase in total five years returns results an average increase in the Sharpe ratio. Additionally, compared to other investment strategies, large cap results in an average decrease in the Sharpe ratio. The finding from this study indicated that there is a

statistical relationship between investment strategy ,investment returns that predicted investment performance in alignment with prospect theory.Using prospect theory in this study can explain investment leaders the best strategy to increase investment returns, and investment performance , and their emotional ,irrational and rational decision making to analyze their investment decion behavior to select the best investment return and performnce for their firms that was identified in this study , which can be used as supplementary to existing literatures.

Applications to Professional Practice

The study's findings may provide useful ways for enhancing investment returns to investment professionals in the United States. Strategies for investing have been a difficult issue in sustaining investment industry success, as many organizations have lost considerable assets due to a lack of effective strategies (Jensen & Maheu, 2018). As a result, the effectiveness of investment strategies has become critical for successful investing. This research could be useful in investment practice by offering a realistic model for better understanding the connections between statistical relationships between investment strategies and investment returns and performance. The significant investment strategies model found in this study could help investment executives improve growth plans while also raising investment return and performance. The investment managers may chose to invest in growth and large companies over small company and mid companies , but a manageable combination of all type of companies in a portfolio or mutual funds can offer an attractive return with low volatility for their investment.

Implications for Social Change`

The implications for positive social change include providing possible major investment return and performance strategies for investment managers in the United States to boost investment returns and investment performance. Implementing an appropriate investment strategy may boost investment returns and performance, hence improving the investment industry's stability. This move may result in the expansion of local economies and the development of new jobs. More employment could help to alleviate poverty and boost professional activity, while also increasing money locally and nationally.

Recommendations for Action

The results of this study should be shared with other academic researcher, as well as various stakeholders such as investment executives in order to improve growth plans while also raising investment return and performance. Risk and return have a positive relationship: greater the risk, the larger the possibility for profit or loss. Furthermore, low levels of uncertainty (risk) are connected with low returns, while high levels of uncertainty are associated with high returns. When building a portfolio, an investor must first determine his or her own risk tolerance.

Recommendations for Further Research

Future recommendations include sampling a larger set of U.S. securities data. This current study only sampled 120 cases which included including equity, mutual funds categories, bonds, and derivatives. Additionally, the data was collected from *Morningstar's* annualized database from performance data ranging only from 2019 to

2023. Future studies should include other U.S. securities data from other previous years in order to generate a larger sample size, which would increase the statistical power of the study.

Reflections

Prior to undertaking this study, as the researcher, I had no prior expertise in the financial sector and had no connection to the Morningstar database. During the process of gathering data, analyzing it, reporting it, and publishing the study's findings, I adhered to ethical guidelines and professional standards. Prior to starting data collecting, I had an ethical and moral duty to respect the accuracy of the data by acquiring Walden University's IRB certificate of approval.

Conclusion

Strategic investment decision-making strategies are complex and offer investment managers with obstacles when selecting financial investment products. Good decision-making procedures in securities such as bonds, various mutual fund categories, and derivatives are required for successful financial investment implementation. A leader's inability to make suitable decisions harms the investment company's financial outcomes and leads to a degradation in business practices due to decreased competitiveness of services and products (Agyekum et al., 2021). As a result, productive decision-making processes ensure financial investment firms' durability and long-term prosperity.

The findings of this study should be conveyed with other academic researchers and stakeholders such as investment executives in order to improve strategies for growth while also increasing investment return and performance. The stability of the investment

industry may be enhanced by implementing a suitable investment plan, which could increase investment returns and performance. This action might lead to the growth of new jobs and the expansion of local economies. Increased employment could increase income both locally and nationally, as well as aid to reduce poverty and promote professional engagement.

References

- Aduba, D. E., & Mayowa-Adebara, O. (2022). Online platforms used for teaching and learning during the COVID-19 era: The case of LIS students in Delta State University, Abraka. *International Information & Library Review*, 54(1), 17–31. <https://doi.org/10.1080/10572317.2020.1869903>
- Agnihotri, R. (2021). From sales force automation to digital transformation: How social media, social CRM, and artificial intelligence technologies are influencing the sales process. In *A research agenda for sales*. Edward Elgar Publishing. <https://doi.org/10.4337/978-1788975315.00009>
- Aguilar-Rivera, A., & Valenzuela-Rendón, M. (2019). A new multi-period investment strategies method based on evolutionary algorithms. *Neural Computing and Applications*, 31, 923–937. <https://doi.org/10.1007/s00521-017-3121-6>
- Agyekum, E. B., Amjad, F., Mohsin, M., & Ansah, M. N. S. (2021). A bird's eye view of Ghana's renewable energy sector environment: A multi-criteria decision-making approach. *Utilities Policy*, 70(6), 45–98. <https://doi.org/10.1016/j.jup.2021.101219>
- Ahmed, Z., Noreen, U., Ramakrishnan, S. A., & Abdullah, D. F. B. (2021). What explains the investment decision-making behavior? The role of financial literacy and financial risk tolerance. *Afro-Asian Journal of Finance and Accounting*, 11(1), 1–19. <https://doi.org/10.1504/AJFA.2021.111814>

- Ali, A. S., & Chua, S. J. L. (2023). Factors influencing buyers' and investors' decisions in acquiring property in hillside areas. *Ain Shams Engineering Journal*, 14(1), 27–67. <https://doi.org/10.1016/j.asej.2022.101827>
- Altin, H. (2020). Efficient market hypothesis for Islamic capital markets. In *Handbook of research on theory and practice of global Islamic finance* (pp. 489–523). IGI Global. <https://www.igi-global.com/book/handbook-research-theory-practice-global/226989>
- Annan, S. T., Adarkwah, F., Abaka-Yawson, A., Sarpong, P. A., & Santiago, P. K. (2019). Assessment of the inquiry teaching method on academic achievements of students in biology education at Mawuko girls' school, Ho, Ghana. *American Journal of Educational Research*, 7(3), 219–223. <https://doi.org/10.12691/education-7-3-5>
- Aslam, M. (2021). Towards a reinforcement-sensitive multiple risk behavior change model. *Current Research in Behavioral Sciences*, 66(13), 45–73. <https://doi.org/10.1016/j.crbeha.2021.100028>
- Austin, J., Drossaert, C. H. C., Schroevers, M. J., Sanderman, R., Kirby, J. N., & Bohlmeijer, E. T. (2021). Compassion-based interventions for people with long-term physical conditions: A mixed-methods systematic review. *Psychology & Health*, 36(1), 16–42. <https://doi.org/10.1080/08870446.2019.1699090>
- Avi-Yonah, R. (2020). Do lawyers need economists? Review of Katja Langenbucher, economic transplants: On lawmaking for corporations and capital markets

- (Cambridge U. Press, 2017). *Accounting, Economics, and Law: A Convivium*, 1(6). <http://dx.doi.org/10.2139/ssrn.3643707>
- Berg, A., Buffie, E. F., Pattillo, C., Portillo, R., Presbitero, A. F., & Zanna, L. F. (2019). Some misconceptions about public investment efficiency and growth. *Economica*, 86(42), 409–430. <https://doi.org/10.1111/ecca.12275>
- Beveridge, S., Chan, C., DiNardo, J., & Glickman, C. (2019). Clinical judgment and the utilization of psychometric instruments for vocational assessment. *Rehabilitation Research, Policy, and Education*, 33(2), 144–155. <https://doi.org/10.1891/2168-6653.33.2.144>
- Binde, P., & Romild, U. (2019). The self-reported negative influence of gambling advertising in a Swedish population-based sample. *Journal of Gambling Studies*, 35(2), 709–724. <https://doi.org/10.1007/s10899-01809791-x>
- Bodley, T., Kwan, J. L., Matelski, J., Darragh, P. J., & Cram, P. (2019). Self-reported test ordering practices among Canadian internal medicine physicians and trainees: A multicenter cross-sectional survey. *BMC Health Services Research*, 19(1), 820–835. <https://doi.org/10.1186/s12913-0194639-3>
- Bork, F., Lehner, A., Eck, U., Navab, N., Waschke, J., & Kugelmann, D. (2021). The effectiveness of collaborative augmented reality in gross anatomy teaching: A quantitative and qualitative pilot study. *Anatomical Sciences Education*, 14(5), 590–604. <https://doi.org/10.1002/ase.2016>

- Bridgers, S., Jara-Ettinger, J., & Gweon, H. (2020). Young children consider the expected utility of others' learning to decide what to teach. *Nature Human Behaviour*, 4(2), 144–152. <https://doi.org/10.1038/s41562-019-0748-6>
- Britzelmaier, B., Pöpplow, U., & Andraschko, L. (2020). Capital budgeting practices of SME in Baden-Württemberg: Findings of an empirical study. *International Journal of Business and Globalization*, 24(1), 78–93. <https://doi.org/10.1504/IJBG.2020.104958>
- Buczynski, W., Cuzzolin, F., & Sahakian, B. (2021). A review of machine learning experiments in equity investment decision-making: why most published research findings do not live up to their promise in real life. *International Journal of Data Science and Analytics* 11(5), 221–242. <https://doi.org/10.1007/s41060-021-00245-5>
- Bui, B. (2021). A critical examination of the use of research templates in accounting and finance. *Accounting & Finance*, 61(2), 26–56. <https://doi.org/10.1111/acfi.12679>
- Cao, M. M., NGuyen, N. T., & Tran, T. T. (2021). Behavioral factors on individual investors' decision making and investment performance: A survey from the Vietnam stock market. *The Journal of Asian Finance, Economics, and Business*, 8(3), 845–853. <https://doi.org/10.13106/jafeb.2021.vol8no3.0845>
- Chachuli, F. S. M., Mat, S., Ludin, N. A., & Sopian, K. (2021). Performance evaluation of renewable energy R&D activities in Malaysia. *Renewable Energy*, 163, 544–560. <https://doi.org/10.1016/.renene.2020.08.160>

- Chen, C., Shi, Y., Zhang, P., & Ding, C. (2021). A cross-country comparison of fiscal policy responses to the COVID-19 global pandemic. *Journal of Comparative Policy Analysis: Research and Practice*, 23(2), 262–273.
<https://doi.org/10.1080/13876988.2021.1878885>
- Cheng, M., & Frangopol, D. M. (2021). Life-cycle optimization of structural systems based on cumulative prospect theory: Effects of the reference point and risk attitudes. *Reliability Engineering & System Safety*, 14(8), 10–36.
<https://doi.org/10.1016/j.res.2021.108100>
- Chudziak, J. (2019). Certainty equivalent under cumulative prospect theory. *International Journal of Uncertainty, Fuzziness & Knowledge-Based Systems*, 27(3), 415–428.
<https://doi.org/10.1142/S0218488519500193>
- Chugunov, I., Pasichnyi, M., Koroviy, V., Kaneva, T., & Nikitishin, A. (2021). Fiscal and monetary policy of economic development. *European Journal of Sustainable Development*, 10(1), 21–42. <https://doi.org/10.14207/ejsd.2021.v10n1p42>
- Churruca, K., Ellis, L. A., Pomare, C., Hogden, A., Bierbaum, M., Long, J. C., & Braithwaite, J. (2021). Dimensions of safety culture: A systematic review of quantitative, qualitative, and mixed methods for assessing safety culture in hospitals. *BMJ Open*, 11(7), 12–45. <http://doi.org/10.1136/bmjopen-2020-043982>
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159.
<https://doi.org/10.1037//0033-2909.112.1.155>

- Colapinto, C., Jayaraman, R., & La Torre, D. (2020). Goal programming models for managerial strategic decision making. In *Applied mathematical analysis: Theory, methods, and applications* (pp. 487–507). Springer, Cham.
https://doi.org/10.1007/978-3-319-99918-0_16
- Costa, O. L. V., & Dufour, F. (2021). integrodifferential optimality equations for the risk-sensitive control of piecewise deterministic Markov processes. *Mathematical Methods of Operations Research*, 66(25), 1–31. <https://doi.org/10.1007/s00186-020-00732-8>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage.
- Crossman, M. K., & Kazdin, A. E. (2016). Additional evidence is needed to recommend acquiring a dog to families of children with autism spectrum disorder: A response to Wright and colleagues. *Journal of Autism and Developmental Disorders*, 46(1), 312–335. <https://doi.org/10.1007/s10803-015-2542-2>
- Cunha, F. A. F. D. S., de Oliveira, E. M., Orsato, R. J., Klotzle, M. C., Cyrino Oliveira, F. L., & Caiado, R. G. G. (2020). Can sustainable investments outperform traditional benchmarks? Evidence from global stock markets. *Business Strategy and the Environment*, 29(2), 682–697. <https://doi.org/10.1002/bse.2397>
- Da Silva Castanheira, K., Fleming, S. M., & Otto, A. R. (2021). Confidence in risky value-based choice. *Psychonomic Bulletin & Review* 23(6), 19–89.
<https://doi.org/10.3758/s13423-020-01848-y>

- Das, A. R., & Panja, S. (2020). Exploring the influence of emotion in investment decision-making: A theoretical perspective. In *The financial landscape of emerging economies* (3rd eds., pp. 71–78). Springer, Cham. doi:[10.1007/978-3-030-60008-2_6](https://doi.org/10.1007/978-3-030-60008-2_6)
- Davis, A. B., Sheaffer, V., Rispin, K., & Layton, N. (2021). The inter-rater reliability of the Wheelchair Interface Questionnaire. *Disability and Rehabilitation: Assistive Technology*, 16(2), 166–171. <https://doi.org/10.1080/17483107.2019.1646816>
- De Almeida Costa, M., de Azevedo Peixoto Braga, J. P., & Ramos Andrade, A. (2021). A data-driven maintenance policy for railway wheelset based on survival analysis and Markov decision process. *Quality and Reliability Engineering International*, 37(1), 176–198. <https://doi.org/10.1002/qre.2729>
- Deslatte, A., Swann, W. L., & Feiock, R. C. (2021). Performance, satisfaction, or loss aversion? A meso–micro assessment of local commitments to sustainability programs. *Journal of Public Administration Research and Theory*, 31(1), 201–217. <https://doi.org/10.1093/jopart/muaa021>
- Do Nascimento-Junior, A. J., Klotzle, M. C., Brandão, L. E. T., & Pinto, A. C. F. (2021). Prospect theory and narrow framing bias: Evidence from emerging markets. *The Quarterly Review of Economics and Finance*, 80(23), 90–121. <https://doi.org/10.1016/j.qref.2021.01.016>
- Doh, H., & Wang, Y. (2020). *Information acquisition and secondary market liquidity*. Springer, Cham. <https://doi.org/10.2139/ssrn.3556259>

- Dopierała, Ł. , & Mosionek-Schweda, M. (2021). Pension fund management, investment performance, and herding in the context of regulatory changes: New evidence from the Polish pension system. *Risks*, 9(1), 66–99.
<https://doi/10.33.90/risks9010006>
- Duan, W., Shen, J., Hogarth, N. J., & Chen, Q. (2021). Risk preferences significantly affect household investment in timber forestry: Empirical evidence from Fujian, China. *Forest Policy and Economics*, 125(11), 121–156.
<https://doi.org/10.1016/j.forpol.2021.102421>
- Duffy, K., Reid, E., & Finch, J. (2020). Sold out? Reconfiguring consumer demand through the secondary digital ticket market. *Consumption Markets & Culture*, 23(2), 174–194. <https://doi.org/10.1080/10253866.2019.1684270>
- Eti, S. (2021). The use of quantitative methods in investment decisions: A literature review. *Research Anthology on Personal Finance and Improving Financial Literacy*, 1–20. <https://doi.org/10.4018/978-1-7998-8049-3ch001>
- Fabiola, C., Ponno, E., & Nusantara, D. P. (2020). Primary market vs. the secondary market. *The Secondary Market*, 47(14), 67–99.
<https://doi.org/10.2129/ssrn.3523441>
- Farooq, Q., Fu, P., Shumilina, K., & Liu, X. (2023). Behaviorally harmonized ethical discussions for socially responsible decision making: A counter-argumentative team approach. *Current Psychology*, 45(12), 87–199.
<https://doi.org/10.1007/s12144-020-00729-w>

- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2019). Statistical power analyses using GPower 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(7), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics*. SAGE Publications
- Ferrari-Toniolo, S., Bujold, P. M., Grabenhorst, F., Báez-Mendoza, R., & Schultz, W. (2021). Nonhuman primates satisfy utility maximization in compliance with the continuity axiom of expected utility theory. *Journal of Neuroscience*, 41(13), 2964–2979. <https://doi.org/10.1523/JNEUROSCI.0955-20.2020>
- Fumagalli, R. (2020). How thin rational choice theory explains choices. *Studies in History and Philosophy of Science Part A*, 83, 63-74. <https://doi.org/10.1016/j.shpsa.2020.03.003>
- Garattini, C., Raffle, J., Aisyah, D. N., Sartain, F., & Kozlakidis, Z. (2019). 3Big data analytics, infectious diseases, and associated ethical impacts. *Philosophy & Technology*, 32(1), 69–85. <https://doi.org/10.1007/s13347-017-0278-y>
- Gong, P., Wen, Z., Xiong, X., & Gong, C. M. (2021). When do investors gamble in the stock market? *International Review of Financial Analysis*, 74(7), 37–89. <https://doi.org/10.1016/j.irfa.2021.101712>
- Grable, J. E., Joo, S. H., & Kruger, M. (2021). Risk tolerance and household financial behavior: A test of the reflection effect. *IIMB Management Review*, 52(8), 45–91. <https://doi.org/10.1016/j.iimb.2021.02.001>

- Graf, S., & Korn, R. (2020). A guide to Monte Carlo simulation concepts for assessment of risk-return profiles for regulatory purposes. *European Actuarial Journal*, 10, 273–293. <https://doi.org/10.1007/s13385-02000232-3>
- Gross, J., & Zahner, J. (2021). What is on the ECB's mind? Monetary policy before and after the global financial crisis. *Journal of Macroeconomics*, 68, 10–29. <https://doi.org/10.1016/j.jmacro.2021.103292>
- Gu, A., & Yoo, H. I. (2021). Prospect Theory and mutual fund flow. *Economics Letters*, 201, 109–776. <https://doi.org/10.1016/j.econlet.2021.109776>
- Hameleers, M. (2021). Prospect theory in times of a pandemic: The effects of gain versus loss framing on risky choices and emotional responses during the 2020 coronavirus outbreak-evidence from the US and the Netherlands. *Mass Communication and Society*, 24(3), 78–102. <https://doi.org/10.1080/15205436.2020.1870144>
- Han, Q. (2019). A literature review on the study of the income distribution, education, and education returns rate based on family background and gender differences. *Journal of Accounting, Business and Finance Research*, 5(2), 43–50. <https://doi:10.20448/2002.52.43.50>
- Hashemizadeh, A., Ju, Y., Bamakan, S. M. H., & Le, H. P. (2021). Renewable energy investment risk assessment in belt and road initiative countries under uncertainty conditions. *Energy*, 214, 118–237. <https://doi.org/10.1016/j.energ.2020.118923>
- Herfeld, C. (2020). The diversity of rational choice theory: A review note. *Topoi*, 39(2), 329–347. <https://doi.org/10.1007/s11245-018-9588-7>

- Jacobs, K. E., & Kobar, A. (2021). Strategic asset allocation for endowment funds. *The Journal of Portfolio Management*, 47(5), 114–127.
<https://doi.org/10.3905/jpm.2021.1.227>
- Jensen, M., & Maheu, J. (2018). Risk, return and volatility feedback: A Bayesian nonparametric analysis. *Journal of Risk and Financial Management*, 11(3), 51–72. <https://doi.org/10.3390/jrfm11030052>
- Jin, X., Liu, Q., & Long, H. (2021). Impact of cost-benefit analysis on financial benefit evaluation of investment projects under back propagation neural network. *Journal of Computational and Applied Mathematics*, 384, 113–172.
<https://doi.org/10.1016/j.cam.2020.113172>
- Johansson, J., Malmström, M., & Wincent, J. (2021). Sustainable investments in responsible SMES: That’s what distinguishes government VCS from private VCS. *Journal of Risk and Financial Management*, 14(1), 25–67.
<https://doi.org/10.3390/jfm14010025>
- Johnstone, D. J. (2021). Accounting information, disclosure, and expected utility: Do investors really abhor uncertainty? *Journal of Business Finance & Accounting*, 48(1-2), 3–35. <https://doi.org/10.1111/jbfa.12518>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291. <https://doi.org/10.2307/1914185>

- Karim, S., Manab, N. A., & Ismail, R. B. (2023). Assessing the governance mechanisms, corporate social responsibility and performance: The moderating effect of board independence. *Global Business Review*, 24(3), 550–562.
<https://doi.org/10.1177/0972150920917773>
- Kasuya, E. (2019). On the use of r and r squared in correlation and regression. *Ecological Research*, 34(1), 235–236. <https://doi.org/10.1111/1440-1703.1011>
- Khan, A. (2022). Expected utility versus cumulative prospect theory in an evolutionary model of bargaining. *Journal of Economic Dynamics and Control*, 137, 104–332.
<https://doi.org/10.1016/j.jedc.2022.104332>
- Khan, S. A. R., Zkik, K., Belhadi, A., & Kamble, S. S. (2021). Evaluating barriers and solutions for social sustainability adoption in multi-tier supply chains. *International Journal of Production Research*, 59(11), 3378–3397.
<https://doi.org/10.1080/00207543.2021.1876271>
- Korkmaz, M. Ç., Leiva, V., & Martin-Barreiro, C. (2023). The Continuous Bernoulli Distribution: Mathematical Characterization, Fractile Regression, Computational Simulations, and Applications. *Fractal and Fractional*, 7(5), 386–409.
<https://doi.org/10.3390/fractalfract7050386>
- Kwon, K. (2019). The long-term effect of training and development investment on financial performance in Korean companies. *International Journal of Manpower*, 12(4), 44–59. <https://doi.org/10.1108/IJM-10-2017-0286>
- Lam, J. C., & Yoon, K. L. (2021). Why change now? Cognitive reappraisal moderates the relation between anxiety and resistance to sunk cost. *Journal of Psychopathology*

and Behavioral Assessment, 18(9), 1–26. <https://doi.org/10.1007/s10862-020-09857>

Larkin, M. E., Beardslee, B., Cagliero, E., Griffith, C. A., Milaszewski, K., Mugford, M.

T., & Witte, E. R. (2019). Ethical challenges experienced by clinical research nurses: 4 A qualitative study. *Nursing Ethics*, 26(1), 172–184. <https://doi.org/10.1177/0969733017693441>

Leonard, C. M. L., & William, T. Z. (2013). Prospect theory: An analysis of decision under risk. In *Handbook of the fundamentals of financial decision making: Part I* (pp. 99–127). <https://lccn.loc.gov/2012037307>

Leung, X. Y., & Cai, R. (2021). How pandemic severity moderates digital food ordering risks during COVID-19: An application of prospect theory and risk perception framework. *Journal of Hospitality and Tourism Management*, 47(7), 497–505. <https://doi:10.1016/j.jhtm.2021.05.002>

Li, C., Wang, Z., & Wang, L. (2023). Factors affecting firms' green technology innovation: an evolutionary game based on prospect theory. *Environmental Monitoring and Assessment*, 195(1), 227. <https://doi.org/10.1007/s10661-022-10835-w>

Li, J., Wang, H., & Yu, J. (2021). Aggregate expected investment growth and stock market returns. *Journal of Monetary Economics*, 117, 618–638. <https://doi.org/10.1016/j.jmoneco.2020.03.016>

- Lima, E. S., McMahon, P., & Costa, A. P. C. S. (2021). Establishing the relationship between asset management and business performance. *International Journal of Production Economics*, 232, 17–37. <https://doi.org/10.1016/j.ijpe.2020.107937>
- Lin, Y. E., Li, Y. W., Cheng, T. Y., & Lam, K. (2021). Corporate social responsibility and investment efficiency: Does business strategy matter? *International Review of Financial Analysis*, 73, 10–85. <https://doi.org/10.1016/j.irfa.2020.101585>
- Liu, P., & Zhang, P. (2021). A normal wiggly hesitant fuzzy MABAC method based on CCSD and prospect theory for multiple attribute decision making. *International Journal of Intelligent Systems*, 36(1), 44–77. <https://doi.org/10.1002/int.22306>
- Liu, Y., Gong, X., Yüksel, S., Dinçer, H., & Aydın, R. (2021). A multidimensional outlook to energy investments for the countries with continental shelf in East Mediterranean Region with hybrid decision making model based on IVF logic. *Energy Reports*, 7, 158–173. <https://doi.org/10.1016/j.egyr.2020.11.196>
- Lu, J., He, T., Wei, G., Wu, J., & Wei, C. (2020). Cumulative prospect theory: Performance evaluation of government purchases of home-based elderly-care services using the Pythagorean 2-tuple linguistic TODIM method. *International Journal of Environmental Research and Public Health*, 17(6), 19–39. <https://doi.org/10.3390/ijerph17061939>
- Manfredi, S., & Clayton-Hathway, K. (2021). Gender equality and the business case in horse racing. *Equality, Diversity, and Inclusion: An International Journal*, 23(5), 45–89. <https://doi.org/10.1108/EDI-02-2020-0035>

- McCarthy, D., Mikkola, K., & Thomas, T. (2020). Utilitarianism with and without expected utility. *Journal of Mathematical Economics*, 87, 77–113.
<https://doi.org/10.1016/j.jmateco.2020.01.001>
- Melas, D. (2021). Factor allocation model: Integrating factor models and strategies into the asset allocation process. *The Journal of Portfolio Management*, 47(5), 11–57.
<https://doi.org/10.3905/jpm.2021.1.220>
- Melnik-Leroy, G. A., & Dzemyda, G. (2021). How to influence the results of MCDM? Evidence of the impact of cognitive biases. *Mathematics*, 9(2), 121–148.
<https://doi.org/10.3390/math9020121>
- Meredith, J. R., & Zwikael, O. (2020). Achieving strategic benefits from project investments: Appoint a project owner. *Business Horizons*, 63(1), 61–71.
<https://doi.org/10.1016/j.bushor.2019.09.007>
- Moscato, I. (2021). Risk, choice, and uncertainty: Three centuries of economic decision-making by George Szpiro. *History of Political Economy*, 25(7), 367–369.
<https://doi.org/10.1215/00182702-8906852>
- Muehlensiepen, F., Knitza, J., Marquardt, W., May, S., Krusche, M., Hueber, A., & Welcker, M. (2021). Opportunities and barriers of telemedicine in rheumatology: A participatory, mixed-methods study. *International Journal of Environmental Research and Public Health*, 18(24), 13–17.
<https://doi.org/10.3390/ijerph182413127>

- Newman, A., Bavik, Y. L., Mount, M., & Shao, B. (2021). Data collection via online platforms: Challenges and recommendations for future research. *Applied Psychology, 70*(3), 1380-1402. <https://doi.org/10.1111/apps.12302>
- Nikolova, S., Wang, L., & Wu, J. J. (2020). Institutional allocations in the primary market for corporate bonds. *Journal of Financial Economics, 13*(2), 470–490. <https://doi.org/10.1016/j.jfineco.2020.02.007>
- Papadia, A., & Schioppa, C. A. (2020). Foreign debt, capital controls, and secondary markets: Theory and evidence from Nazi Germany (No. 25). Working Papers of the Priority Program 1859" Experience and Expectation. *Historical Foundations of Economic Behaviour, 9*(3), 45–78. <https://doi.org/10.18452/22060>
- Parnell, J. A. (2019). Data collection and analysis. In *Nonmarket strategy in business organizations* (4th eds., pp. 27–36). Springer, Cham. <https://link.springer.com/book/10.1007%2F978-3-319-93242-2>
- Peng, H. G., Shen, K. W., He, S. S., Zhang, H. Y., & Wang, J. Q. (2019). Investment risk evaluation for new energy resources: An integrated decision support model based on regret theory and Electre III. *Energy Conversion and Management, 183*(12), 332–348. <https://doi.org/10.1016/j.enconman.2019.01.015>
- Poly, T. N., Islam, M. M., Yang, H. C., Nguyen, P. A., Wu, C. C., & Li, Y. C. J. (2019). Artificial intelligence in diabetic retinopathy: Insights from a meta-analysis of deep learning. In *Medinfo 2019: Health and Wellbeing e-Networks for All* (pp. 1556-1557). IOS Press. <https://doi.org/10.3233/SHTI190532>

- Prakash, P. K. S., Gandhi, N., & Jain, S. (2021). BayesRec: Personalize search ranking with customer attribute-level willingness-to-pay using heterogeneous booking choice data. *International Journal of Hospitality Management*, 94(16), 38–98. <https://doi.org/10.1016/j.ijhm.2021.102885>
- Rafique, S. (2021). Conceptualizing strategic risk-taking by small states under game theory (a constructivist analysis). *The Journal of Social Science*, 5(9), 16–33. <https://doi.org/10.30520/tjsosci.870897>
- Rausser, G. C., & Dean, G. W. (2021). Uncertainty and decision-making in water resources. In *California water* (pp. 233-250). *University of California Press*, 7(4), 123–167. <https://doi.org/10.1525/9780520316669-014>
- Richards, K. A. R., Killian, C. M., Graber, K. C., & Kern, B. D. (2019). Studying recruitment and retention in PETE: Qualitative and quantitative research methods. *Journal of Teaching in Physical Education*, 38(1), 22–36. <https://doi.org/10.1123/jtpe.2018-0010>
- Ritchie, K. (2021). Using IRB protocols to teach ethical principles for research and everyday life: A high-impact practice. *Journal of the Scholarship of Teaching and Learning*, 21(1), 90–134. <https://doi.org/10.14434/josotl.v21i1.30554>
- Robinson, O. C. (2019). A longitudinal mixed-methods case study of quarter-life crisis during the post-university transition: Locked-out and locked-in forms in combination. *Emerging adulthood*, 7(3), 167–179. <https://doi.org/10.1177/2167696818764144>

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research methods for business students* (7th ed.). Pearson Education.

Saxena, N., Sarkar, B., & Singh, S. R. (2020). Selection of remanufacturing/production cycles with an alternative market: A perspective on waste management. *Journal of Cleaner Production*, 24(5), 118–146.

<https://doi.org/10.1016/j.jclepro.2019.118935> Sharma, D. J., & Sarma, N. N.

(2022). Behavioural Finance—A study on its Bases and paradigms. *International Journal of Scientific Research and Management (IJSRM)*, 10(03), 3157–3170.

<https://doi.org/10.18535/ijrm/v10i3.em3> Singer, J. W. (2018). Strategies for employee turnover of Southeastern Wisconsin manufacturing workers. Walden Dissertation & Doctoral Studies.

<https://scholarworks.waldenu.edu/dissertations/4946/>

- Snay, C. F. (2019). Relationship between preparedness training and posttraumatic stress disorder severity in combat veterans (Doctoral dissertation, University of Walden). <https://www.scholarWorks@waldenu.edu>
- Soto, S. L. (2019). Information and communications technology strategies for improving global virtual teams' success rates (Doctoral dissertation, University of Walden). <https://www.scholarowrks@walden.edu>
- Staples, J. A., Liu, G., Brubacher, J. R., Karimuddin, A., & Sutherland, J. M. (2021). Physician financial incentives to reduce unplanned hospital readmissions: an interrupted time series analysis. *Journal of General Internal Medicine*, 36(11), 3431–3440. <https://doi.org/10.1007/s11606-021-06803-8>
- Sun, C. (2020). Research on investment decision-making model from the perspective of "internet of things+ big data." *Future Generation Computer Systems*, 107, 286–292. <https://doi.org/10.1108/BPMJ-11-2017-0328>
- Suomala, J., & Kauttonen, J. (2023). Computational meaningfulness as the source of beneficial cognitive biases. *Frontiers in Psychology*, 14, 67–91. <https://doi.org/10.3389/fpsyg.2023.1189704>
- Treiblmaier, H. (2022). What is coming across the horizon and how can we handle it? bitcoin scenarios as a starting point for rigorous and relevant research. *Future Internet*, 14(6), 112–162. <https://doi.org/10.3390/fi14060162>
- Tulloch, V., Grech, A., Jonsen, I., Pirotta, V., & Harcourt, R. (2020). Cost-effective mitigation strategies to reduce bycatch threats to cetaceans identified using return-

on-investment analysis. *Conservation Biology*, 34(1), 168–179.

<https://doi.org/10.1111/cobi.13418>

Turnbull, D., Chugh, R., & Luck, J. (2021). Learning management systems: A review of the research methodology literature in Australia and China. *International Journal of Research & Method in Education*, 44(2), 164–178.

<https://doi.org/10.1080/1743727X.2020.1737002>

Uprichard, E., & Dawney, L. (2019). Data diffraction: Challenging data integration in mixed methods research. *Journal of Mixed Methods Research*, 13(1), 19–32.

<https://doi.org/10.1177/1558689816674650>

van-Daal, T., Lesterhuis, M., Coertjens, L., Donche, V., & De Maeyer, S. (2019). Validity of comparative judgement to assess academic writing: Examining implications of its holistic character and building on a shared consensus. *Assessment in Education: Principles, Policy & Practice*, 26(1), 59-74.

<https://doi.org/10.1080/0969594X.2016.1253542>

Vrbová, L., & Müllerová, B. (2021). Informal reasoning fallacies: Answered and unanswered questions from a decision-making perspective. *International Journal of Management and Decision Making*, 20(1), 112–134.

<https://doi.org/10.1504/IJMDM.2021.112360>

Vyas, V., Mehta, K., & Sharma, R. (2020). Investigating socially responsible investing behavior of Indian investors using structural equation modeling. *Journal of Sustainable Finance & Investment*, 4(3), 1–23.

<https://doi.org/10.1080/20430795.2020.1790958>

- Wang, W., Han, X., Ding, W., Wu, Q., Chen, X., & Deveci, M. (2023). A Fermatean fuzzy Fine–Kinney for occupational risk evaluation using extensible Marcos with prospect theory. *Engineering Applications of Artificial Intelligence*, *117*, 205–318. <https://doi.org/10.1016/j.engappai.2022.105518>
- Weaver, D. B. (2023). Tourisation theory and the pandiscipline of tourism. *Journal of Travel Research*, *62*(1), 259–265. <https://doi.org/10.1177/00472875221095217>
- Wei, P., Song, J., Bi, S., Broggi, M., Beer, M., Lu, Z., & Yue, Z. (2019). Non-intrusive stochastic analysis with parameterized imprecise probability models: I. Performance estimation. *Mechanical Systems and Signal Processing*, *124*, 349–368. <https://doi.org/10.1016/j.ymsp.2019.01.058>
- Wilkin, C. L., & Chenhall, R. H. (2020). Information technology governance: Reflections on the past and future directions. *Journal of Information Systems*, *34*(2), 257–292. <https://doi.org/10.2308/isys-52632>
- Wu, B., Jiang, H. J., Wang, C., & Dong, M. (2021). Knowledge and behavior-driven fruit fly optimization algorithm for field service scheduling problem with customer satisfaction. *Complexity*, *2021*(17), 210–345. <https://doi.org/10.1155/2021/8571524>
- Yang, N. (2022). Financial big data management and control and artificial intelligence analysis method based on data mining technology. *Wireless Communications and Mobile Computing*, *2022*, 02–57. <https://doi.org/10.1155/2022/7596094>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage.

- Zeng, H., Dong, B., Zhou, Q., & Jin, Y. (2021). The capital market reaction to central environmental protection inspection: Evidence from China. *Journal of Cleaner Production*, 279, 123–486. <https://doi.org/10.1016/j.jclepro.2020.123486>
- Zhou, W., & Xu, Z. (2020). Investment decision-making is based on the asymmetric hesitant fuzzy sigmoid preference relations. In *Qualitative investment decision-making methods under hesitant fuzzy environments* (2nd ed., pp. 21–48). https://doi.org/10.1007/978-3-030-11349-0_2
- Zhu, B., Wang, F., Su, X., Lu, Y., & Zhang, H. (2021). Effect of different amounts of food and female resources on competitive strategy and agonistic behavior of swimming crab (*Portunus Trituberculatus*). *Aquaculture*, 536, 87–124. <https://doi.org/10.1016/j.aquaculture.2021.736471>.