

Influence of Behavioural Bias on Investment Decisions among Pension Fund Administrators in Nigeria: The Moderating Role of Risk Tolerance

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Abstract

Investment decision-making is a vital aspect of financial management, directly shaping resource allocation, long-term growth, and organizational performance. However, such decisions are often affected by behavioural biases, even among institutional investors like Pension Fund Administrators (PFAs). A quantitative research design was employed, with data gathered from 106 respondents across 22 licensed PFAs in Nigeria. This study focuses on two specific biases—Status-Quo Bias and Disposition Effect—and examined their effect on the investment decisions of PFAs in Nigeria. Status-quo bias reflects a reluctance to change existing investments, while disposition effect involves holding on to losing assets and prematurely selling profitable ones. Drawing on Prospect Theory and Disappointment Theory, the study also investigated the mediating role of risk tolerance in these relationships. Data were collected from licensed PFAs using a structured survey and analyzed through Structural Equation Modeling (SEM). The findings show that both status-quo bias and disposition effect significantly influence investment decisions, often leading to sub-optimal outcomes. Furthermore, risk tolerance significantly mediates these effects, indicating that PFAs with higher risk tolerance are more likely to counteract these behavioural tendencies. The study underscores the importance of behavioural awareness, regular risk profiling, and structured decision-making frameworks within the pension fund sector. It offers practical recommendations for improving decision quality, with implications for PFAs, regulators, and policymakers aiming to enhance the efficiency and stability of Nigeria's pension investment landscape.

Keywords: Risk Tolerance, Status-Quo Bias, Disposition Effect, Pension Fund Administrator

1.0 Background to the Study

Investment decision-making is a critical component of financial management and a central function of Pension Fund Administrators (PFAs) in Nigeria (Ajadi, 2024). These decisions are ideally expected to be rational, but real-world outcomes often show the influence of behavioural biases, especially Status Quo Bias and Disposition Effect. PFAs,

while institutional and trained, are not immune to such biases due to the complexity and volatility of the Nigerian economic environment (Zainab, 2023).

Investment decisions form the cornerstone of corporate financial management, directly influencing long-term growth, profitability, and strategic direction (Weixiang & Rui, 2022; Wikartika et al., 2023). Traditionally, financial theory assumed rational decision-making driven by logical assessments of risk and return. However, the evolution of behavioural finance has challenged this notion, revealing that both individual and institutional investors are often influenced by cognitive and emotional biases (Kahneman & Tversky, 1979; Shefrin & Statman, 1985). Even institutional investors like Pension Fund Administrators (PFAs)—who are assumed to be rational and guided by professional standards—are susceptible to these biases. In Nigeria, PFAs play a critical role in the economy, managing over ₦23.26 trillion in pension assets as of February 2025, up from ₦16.11 trillion in May 2023. Despite this growth, the sector still faces challenges related to poor decision-making and economic volatility, resulting in widespread retiree poverty (Anaesoronye, 2024).

Status Quo Bias (SQB) refers to the tendency of investors to prefer existing investments over new ones, even if the latter offer better returns. This bias leads to inertia, as decision-makers resist change to avoid perceived risks (Mamidala et al., 2023). On the other hand, the Disposition Effect (DE), a cognitive bias, manifests when investors hold on to losing assets too long and sell winners too early due to fear of regret or an overemphasis on sunk costs (Shefrin & Statman, 1985). This study investigates how these two biases influence PFAs' investment decisions in Nigeria and evaluates how risk tolerance mediates these effects. It recognizes that PFAs with higher risk tolerance are better equipped to override such biases, leading to more rational and adaptive decision-making.

The tendency of PFAs to shift from government bonds to riskier assets like equities and real estate underscores a growing risk appetite—one that may not always be rational or well-aligned with market fundamentals. Risk tolerance, defined as an investor's capacity and willingness to endure loss in pursuit of returns, is increasingly seen as a mediating factor that either amplifies or mitigates the effects of behavioural biases (Kasoga, 2021; Soraya et al., 2023).

In this context, investors with higher risk tolerance are more likely to maintain long-term investment focus, while those with lower tolerance may adopt conservative strategies driven by emotional reactions such as fear of loss or regret (Raheja & Dhiman, 2019). Despite extensive research on retail investors, little empirical work has focused on how behavioural biases affect institutional investors like PFAs—especially in emerging markets like Nigeria.

1.1 Research Questions:

- 1.2 The following research questions are posed in this study in an effort to offer empirical solutions to the issues covered above:
 - i. To what extent does Status-Quo bias affect investment decision of PFAs' in Nigeria?
 - ii. To what extent does Disposition affect affect investment Decision of PFA's in Nigeria?
 - iii. To what extent does Risk Tolerance influence investment Decision of PFA's in Nigeria?

- iv. To what extent does Risk Tolerance mediate the relationship between Status-quo bias and Investment Decision of PFAs' in Nigeria?
- v. To what extent does Risk Tolerance mediate the relationship between Disposition Effect and Investment Decision of PFAs' in Nigeria?

These research questions also reflect the research objective and provide a guide to the hypotheses which were stated in the null form.

2.0 Review of Literature:

The review of the body of academic research on behavioral biases is pertinent to this study because it supports discussions about the elements that affect investment decision-making, with a focus on the Status Quo Bias and Disposition Effect. The review examines how psychological factors influence institutional investors' decision-making processes, specifically those of Pension Fund Administrators (PFAs) in Nigeria, by drawing on behavioral finance theories including Prospect Theory and Disappointment Theory.

2.1 Status Quo Bias is an emotional bias that causes investors to avoid change, often irrationally. This bias is prevalent in institutional contexts where switching costs, fear of accountability, or lack of initiative discourage portfolio rebalancing (Kipsaat & Olweny, 2020). Mamidala et al. (2023) emphasize that inertia stemming from status quo bias undermines strategic investment shifts. Camilleri and Sah (2021) provide compelling evidence of status quo bias in their seminal work, illustrating how this bias can lead to sub-optimal decision-making. They found that when individuals are presented with choices that include an option to maintain their current situation, they disproportionately favour that option. This tendency can result in investors clinging to familiar but underperforming investments while prematurely selling assets that are performing well, thereby undermining their overall investment strategy. The preference for the status quo can thus lead to a portfolio that is misaligned with the investor's long-term goals and risk tolerance (Czaika & Reinprecht, 2022).

Addressing status quo bias in investment decision-making requires a comprehensive strategy that combines education, professional guidance, and structural tools. Financial education plays a vital role in helping investors recognize the need to periodically reassess and adjust their portfolios in response to evolving market conditions and personal financial goals (Raut, 2020; Klein et al., 2022). Financial advisors also contribute by offering objective insights and helping investors navigate the emotional discomfort often associated with change (Goyal & Kumar, 2020). Additionally, automated tools like portfolio rebalancing systems can counteract inertia by ensuring regular adjustments to maintain desired asset allocations (Muñoz-Murillo et al., 2020).

Creating decision environments that promote rational evaluation is essential for overcoming this bias. Techniques such as framing investment options to emphasize the benefits of change, as well as implementing routine portfolio reviews and incremental strategies like dollar-cost averaging, help investors make measured decisions without being overwhelmed (Hofman et al., 2022; Kirkby et al., 2020). Status quo bias often leads

investors to retain underperforming assets and exit successful ones prematurely, thereby compromising long-term returns (Hofmann, 2019; Miceli & Suri, 2022). By combining education, systematic strategies, and professional support, investors can reduce the impact of status quo bias and align their decisions more closely with long-term financial objectives.

2.2 Disposition Effect is conceptualized in this study based on the definition of Shefrin and Statman (1985), who opined that this effect's impact is well-documented in both individual and institutional investors. Investors tend to sell winning investments prematurely while holding onto losers—an outcome of emotional discomfort associated with realizing losses. Empirical studies show that PFAs are also prone to this behaviour, especially during market downturns (Rau, 2015; Choe & Eom, 2009).

The disposition effect is a widespread behavioural bias that causes investors to irrationally hold onto losing investments while prematurely selling winning ones—contrary to rational investment strategies aimed at maximizing returns. This behaviour is primarily driven by loss aversion and anchoring. Loss aversion, introduced by Kahneman and Tversky (1979), explains that investors feel the pain of losses more intensely than the satisfaction of equivalent gains, prompting them to delay realizing losses in hopes of recovery (Mukherjee & Srinivasan, 2021). On the other hand, fear of forfeiting gains leads to the early sale of profitable assets (Dawson, 2023). Anchoring reinforces this pattern, as investors cling to the purchase price of an asset and hesitate to sell below it—even when recovery is unlikely (Chiang et al., 2020; Jain et al., 2023). These emotional and cognitive biases skew the risk–reward balance and reduce overall portfolio performance (Nabi et al., 2019; Nada, 2013).

Research has confirmed that the disposition effect affects not only individual investors but also institutional and professional traders (Guenther & Lordan, 2023; Abreu & Mendes, 2020). Its widespread presence can distort market dynamics, suppressing the prices of rising stocks and inflating those of underperforming assets (Barberis & Xiong, 2009; Ahmad & Wu, 2022). To mitigate this bias, investors need financial education, pre-set trading rules (e.g., stop-loss orders), and periodic portfolio reviews (Kajol et al., 2020; Odean, 1998). Additionally, algorithmic tools and robo-advisors can help enforce discipline and reduce emotion-driven decisions (Tan, 2020; Baker & Ricciardi, 2014). Acknowledging and addressing the disposition effect is essential for enhancing investment performance and ensuring market efficiency (Bazerman & Moore, 2022).

2.3 Underpinning Theory: The theoretical foundation for both biases lies in Prospect Theory, which explains how investors overweigh losses relative to gains (Kahneman & Tversky, 1979), and Disappointment Theory, which links investment behaviour to the fear of negative emotional outcomes such as regret and disappointment.

Based on Prospect Theory and Disappointment Theory, this study explains how status-quo bias and the disposition effect affect investing decisions, with risk tolerance acting as a mediator. Prospect Theory emphasizes the disposition effect, which occurs when investors sell winners too soon and hold losing assets for too long because they are more sensitive to

losses than gains. According to the Disappointment Theory, status-quo bias is the tendency of investors to shun change out of a fear of being let down, which leads to lethargy and inadequate diversification. The Efficient Market Hypothesis (EMH), on the other hand, rejects the existence of such biases and makes the assumption that markets are completely efficient and that investors are rational. However, actual behavior usually differs from EMH assumptions, particularly when it comes to institutional investors like PFAs. This study backs up the behavioral finance theory by demonstrating how psychological biases do influence institutional judgment and fuel market inefficiencies.

2.4 Empirical Review: this empirical review is focused on SQB and Disposition effect as it relates to investment decision. Mamidala et al. (2023) investigated the impact of behavioural biases on retail investors' investment decisions through a mixed-method approach in India, combining qualitative interviews and quantitative survey data from Indian retail investors. The study using a two-stage methodology found out that SQB amongs other biases significantly influence investment intentions. Though they proposed a moderated-mediation framework, this study effectively highlights the multifaceted nature of investor behaviour and the complex interplay between various biases and investment attitudes in the Nigerian context. Similarly, Kipsaat and Olweny (2020) explored the influence of behavioural biases; status quo bias inclusive, on professional investment decisions in Kenya. Utilizing a cross-sectional research design, the study employs multiple regression analysis to determine that these biases collectively explain 64.5% of the variation in professional investment decisions. Their findings suggest that professional investors should be more aware of these biases and incorporate analytical tools to mitigate their effects. Nonetheless, while the study provides valuable insights into the Kenyan context, it might not fully capture the nuances of investment behaviours in different market environments or among retail investors, suggesting a need for broader comparative studies.

Almansour et al. (2023) investigated the impact of behavioural finance factors on investment decisions in the Saudi equity markets, using risk perception as a mediating variable. Their study, conducted via online questionnaires with 134 respondents, employed structural equation modelling (SEM) to analyze the data. They found amongst other things that disposition effect significantly influenced risk perception, which in turn had a positive impact on investment decision making. While insightful, the study is limited to a specific cultural context (Saudi Arabia) and focuses on a select set of behavioural factors. It highlights the importance of understanding risk perception in investment decisions but may overlook other potential mediators or moderators influencing these relationships.

Ahmed et al. (2022) investigated the direct and indirect links between behavioural biases and investment decisions among individual investors in the Pakistan Stock Exchange, focusing on risk perception as a mediator. Their study, based on 450 questionnaires collected through purposive sampling, found that risk perception mediated the relationship between blue-chip stocks and investment decisions. Interestingly, risk perception did not mediate between herding bias, disposition effect, and investment decisions, indicating varied impacts of different biases on decision making. The study suggests that addressing

risk perception through investor education and strategic decision-making processes could mitigate biased investment behaviours.

This theoretical model below provides a clear roadmap for empirical testing and interpretation in later chapters, particularly in relation to PFAs’ behavioural tendencies in Nigeria's pension sector.

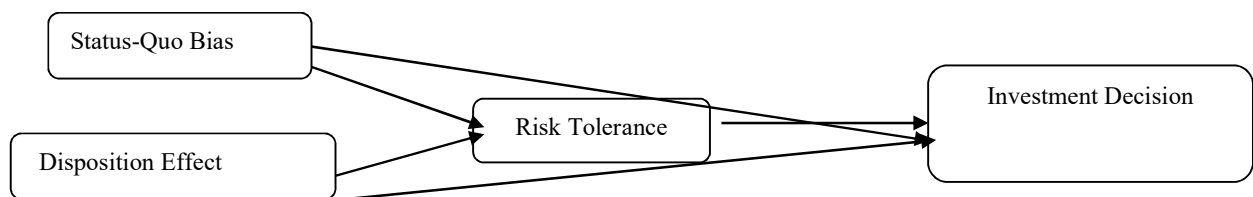


Figure 2.1 Illustrates that Status-Quo Bias and Disposition Effect both exert direct influence on investment decisions, while Risk Tolerance also mediates these relationships.

3.0 Methodology:

A quantitative research design was employed, with data gathered from 106 respondents across 22 licensed PFAs in Nigeria. The study focused on Pension Fund Administrators (PFAs) in Nigeria who hold licenses from the National Pension Commission (PenCom). Wide institutional coverage was ensured in obtaining valid replies from investment experts across the 22 licensed PFAs. Respondents had important decision-making roles in fund allocation and investment planning, including senior executives, compliance officers, portfolio managers, and investment analysts. Additionally, a sizable percentage of respondents (more than 65%) have worked in institutional investing or pension fund management for more than seven years. The majority of respondents had at least a bachelor's degree, and more than 60% had professional qualifications, guaranteeing that the conclusions reflect the strategic viewpoints and behavioral patterns of those directly in charge of influencing investment choices in the Nigerian pension industry.

A structured questionnaire was used to capture responses on various behavioural biases and risk tolerance using a 7-point Likert scale. Risk Tolerance was measured using 7 items adapted from Ritika and Kishor (2020), assessing the organisation’s willingness to take investment risks, while investment decision was measured with 3 items based on Chen (2007), examining how frequently and confidently the organisation makes investment choices.

Preliminary data analysis included tests for missing values, outliers, normality, and multicollinearity using SPSS Version 22. The main analysis was conducted using Partial

Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3.2. This technique is well-suited for examining complex relationships among latent constructs. For Hypothesis Testing, Bootstrapping method (5,000 samples) was used to test significance. The measurement Model was evaluated using tests of reliability (Cronbach’s Alpha and Composite Reliability), convergent validity (Average Variance Extracted), and discriminant validity (Fornell-Larcker Criterion, HTMT Ratio). The Structural Model Evaluation was assessed using path coefficients, R² values (explained variance), and f² effect sizes.

Items measuring Status Quo Bias included three indicators (e.g., SQB1–SQB3), all of which had high factor loadings (≥0.88), a Cronbach's Alpha of 0.89, and an AVE of 0.82—indicating strong internal consistency and validity. For Disposition Effect, six indicators (DE1–DE6) were used, yielding high loadings and a composite reliability of 0.94 with AVE of 0.73. Structural Equation Modeling (SEM) was used to evaluate both direct and indirect (mediated) effects through risk tolerance.

4.0 Estimation of Results:

The SEM results show that Disposition Effect had the stronger direct effect on investment decision-making among the two biases, with a path coefficient of $\beta = 0.28, p = 0.00$. This confirms that PFAs tend to irrationally retain poor-performing assets, validating Shefrin and Statman’s theory. Similarly, Status Quo Bias also had a significant direct effect on investment decisions ($\beta = 0.14, p = 0.02$). PFAs demonstrated a clear preference for maintaining current investment options rather than exploring potentially superior alternatives—often a response to perceived risks of change (Kipsaat & Olweny, 2020). In terms of mediation, risk tolerance significantly mediated both relationships:

Disposition Effect → Risk Tolerance → Investment Decision ($\beta = 0.09, p = 0.00$)
 Status Quo Bias → Risk Tolerance → Investment Decision ($\beta = 0.04, p = 0.02$)

These results imply that PFAs with high risk tolerance are more capable of breaking away from the status quo and better manage the disposition effect. Conversely, those with low tolerance may succumb more easily to emotional discomfort and inertia.

Table 4.1: Item Loadings, Internal Consistency, and Average Variance Extracted

Constructs	Indicators	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Disposition Effect	DE1	0.82	0.92	0.94	0.73
	DE2	0.82			
	DE3	0.87			
	DE4	0.88			
	DE5	0.89			
	DE6	0.82			
Investment Decision	ID1	0.89	0.92	0.95	0.87
	ID2	0.95			
	ID3	0.95			
Risk Tolerance	RT2	0.90	0.85	0.91	0.77
	RT3	0.89			

	RT5	0.83			
Status-Quo Bias	SQB1	0.92	0.89	0.93	0.82
	SQB2	0.93			
	SQB3	0.88			

Source: Researcher's Study, 2025.

Table 4.2: Descriptive Statistics of Construct: Mean and Standard Deviation

Indicators	N	Mean	Std. Deviation
SQB	106	3.57	0.79
DE	106	3.55	0.74
RT	106	3.42	0.75
ID	106	3.73	0.77
Valid N (listwise)	106		

Source: Researcher's Study, 2025.

Table 4.3: Hypotheses Test

Relationship	Beta Values	Standard Deviation (STDEV)	T (O/STDEV)	Statistics P Values
Disposition Effect -> Investment Decision	0.28	0.08	3.81	0.00
Risk Tolerance -> Investment Decision	0.23	0.05	4.66	0.00
Status-Quo Bias -> Investment Decision	0.14	0.06	2.42	0.02
Disposition Effect -> Risk Tolerance-> Investment Decision	0.09	0.03	3.33	0.00
Status-Quo Bias -> Risk Tolerance-> Investment Decision	0.04	0.02	2.33	0.02

Source: Researcher's Study, 2025.

Table 4.4: Coefficient of Determination (R2)

Constructs	R Square	R Square Adjusted
Investment Decision	0.75	0.75
Risk Tolerance	0.78	0.77

Source: Researcher's Study, 2025

Table 4.5: Effect size (f2)

Constructs	Investment Decision	Effect Size	Risk Tolerance	Effect Size
Disposition Effect	0.033	Small	0.072	Small
Risk Tolerance	0.047	Small		
Status-Quo Bias	0.012	None	0.02	Small

Source: Researcher's Study, 2025

4.1 Discussion of Findings:

The findings validate the significant impact of Status Quo Bias and Disposition Effect on the investment decisions of Nigerian PFAs. While disposition effect was the most dominant, status quo bias also significantly shaped risk-averse behaviour. Both biases led PFAs to make suboptimal decisions, such as clinging to underperforming assets or refusing to diversify portfolios. Importantly, risk tolerance emerged as a key mediator. PFAs with higher risk tolerance demonstrated more disciplined and flexible investment strategies, in contrast to their risk-averse counterparts who relied heavily on emotional shortcuts.

The coefficient of determination was assessed in order to evaluate the amount of variance

explained by the exogenous latent variables on the endogenous latent variables. The high coefficients of determination (R^2) for both Investment Decision ($R^2 = 0.75$) and Risk Tolerance ($R^2 = 0.78$), indicating that the predictive model has strong explanatory power. The R^2 value of 0.75 for Investment Decision signifies that 75% of the variance in investment decision-making is explained by the predictors, such as behavioral biases and risk tolerance. The adjusted R^2 remains consistent at 0.75, confirming the robustness of the model and demonstrating that the addition of predictors has not introduced overfitting. These results underscore the significant role that psychological biases and risk preferences play in influencing the financial decisions of Pension Fund Administrators (PFAs). Such findings are consistent with behavioral finance theories, particularly those of Kahneman and Tversky (1979), which emphasize the interplay of heuristics and emotions in financial decision-making.

For Investment Decision, the Disposition Effect ($f^2 = 0.033$) and Risk Tolerance ($f^2 = 0.047$) exhibit small effect sizes, indicating they play a modest but significant role in shaping investment decisions. These findings align with behavioral finance theories, such as those by Shefrin and Statman (1985), which emphasize the role of psychological biases and risk preferences in decision-making. In contrast, Status-Quo Bias ($f^2 = 0.012$), has a smaller or negligible effects, suggesting its limited direct influence.

For Risk Tolerance, the Disposition Effect ($f^2 = 0.072$) exhibit small but meaningful effect size, highlighting its importance in determining an individual's willingness to take risks. This suggest that tendencies to hold onto losses or attribute success to personal skills significantly shape risk preferences, which, in turn, influence investment decisions. Status-Quo Bias also contributes with a small effect size ($f^2 = 0.02$), indicating that a preference for maintaining the current state modestly affects risk tolerance.

5.0 Conclusions, Recommendation and Gaps Filled:

The study reinforces behavioural finance theory by showing how biases distort institutional investment decisions—even among professionals. The role of risk tolerance as a psychological moderator provides a new dimension for managing behavioural distortions. These insights directly challenge traditional assumptions from the Efficient Market Hypothesis, instead supporting Prospect Theory and Disappointment Theory as more realistic models of decision-making in financial institutions (Kahneman & Tversky, 1979). This study therefore recommends that PFAs should undergo bias-awareness and cognitive flexibility training, especially focused on identifying and managing status quo and disposition tendencies. In addition, the adoption of regular risk tolerance assessments in portfolio planning and decision support systems should be embedded.

PenCom could also implement regulations that mandate PFAs to reveal their portfolio adjustment procedures in other to encourage accountability and also guarantee that investment strategies are flexible rather than fixed. Thus, regulatory bodies like PenCom should implement guidelines to counter inertia and reward proactive investment strategies. Pencom can encourage this by encouraging and monitoring internal audits should

periodically in order to swiftly identify and provide solutions to bias-driven patterns in investment schemes that affect the pension industry.

Although a large portion of the literature discusses behavioral biases among individual investors, this study expands on the knowledge to include institutional investors—more especially, PFAs—in the Nigerian setting, an area that has not received enough attention. Furthermore, the fact that risk tolerance is used as a mediator rather than only a moderator suggests that it plays a significant role in elucidating how and why these biases influence choices. As a result, this gap contributes to behavioral finance research in emerging markets by illuminating the psychological processes by which biases influence institutional behavior and by offering additional empirical support for the connections between biases, risk tolerance, and investment choices.

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