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FUNGIBILITY BIAS AND DECISION-MAKING AMONG FOREX TRADERS IN NIGERIA

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ABSTRACT

The purpose of this study was to investigate how fungibility affects decision-making among forex traders in Nigeria. In particular, it analyzed how traders view and use various types of capital in the decision-making process of trading, which in turn affects the risk preferences and trading strategy. The survey was carried out on 112 forex traders in Nigeria. Purposive sampling was applied to select the respondents who had experience in forex trading and were available. Structured questionnaires were used to collect data, and the regression analysis was used to test the hypothesized relationship. The findings indicated that only the risk perception distortion ($t = 2.764$, $p < 0.01$) was statistically significant in determining the decision-making process, while the source sensitivity ($t = 0.528$, $p > 0.05$) and reinvestment bias ($t = 0.884$, $p > 0.05$) did not. The combined effects of source sensitivity, distortion of risk perception, and reinvestment bias on trading decision-making were however significant ($F = 35.943$, $p < 0.01$). This implies that the combination of the three elements had a great impact on the way forex traders made their decisions. The coefficient of determination ($R2 = 0.406$) demonstrated fungibility to explain 40.6 percent of the variation in decision-making. The research concluded that fungibility is a significant determinant of forex trading decisions, especially in risk-taking behaviour.

KEYWORDS: Fungibility, Mental Accounting, Forex Trading.

1. INTRODUCTION

Fungibility as a financial decision-making concept has become an increasingly important topic of study in the area of behavioural finance, especially with the growing involvement of retail investors in high risk markets in the developing economies. Classical financial theory presupposes that money is perfectly fungible- meaning that people make choices which are not dependent on the origin of money. Yet, behavioural finance disproves this supposition and proves that people systematically breach fungibility because of cognitive biases that include mental accounting and framing effects (Imas et al., 2020). Such biases cause people to give subjective value to money, according to its origin, thus, making a rational choice (Thaler, 1985).

The high rate of forex trading in Nigeria among the youth who are technologically inclined creates a special situation where behavioural biases are most likely to be enhanced. Forex markets are highly volatile, leveraged, and involve real time decision making where capital allocation must be highly disciplined. In emerging markets such as Nigeria, where financial literacy levels vary and formal training is limited, these biases may be even more pronounced, leading traders to make psychologically driven decisions rather than fully rational ones (Radianto et al., 2022). In this context, mental accounting is especially relevant, since traders sort funds, either initial capital or profits or recovered losses, into different mental accounts, which affects risk preferences (Paul et al., 2022).

One of the main behavioural implications is the so-called house money effect, when traders make less of profits and thus undertake more risk, whereas losses are often discussed in a limited way, promoting loss-chasing behaviour. This goes against fungibility and causes inconsistent position sizing and wasteful capital allocation (Imas et al., 2020). In spite of the fact that these behaviours are well-reported in experimental and developed-market settings, their expression in emerging, high-frequency trading settings is under-researched.

Critical gap is hence the fact that there is little empirical evidence to how fungibility violations work in real-time trading situations in developing economies, and especially Nigeria. The existing literature on mental accounting is predominantly confined to household finance or orchestras of conventional investment, where decisions are slow, intermittent, and emotionally passionate, whereas few studies have examined speculative markets like forex, in which decisions are fast, repetitive, and emotionally charged (Silva et al., 2023). This provides a disconnect between the theoretical knowledge of established behavioural finance and how it relates to dynamic and high-risk financial situations.

Moreover, Nigeria has socio-economic circumstances, which are related to income volatility, differences in financial literacy, and informal financial norms, which can exacerbate behavioural biases, causing traders to perceive gains and losses as psychologically separate resources. This implies that fungibility breaches are not just possible but contextually supported to be structurally sustained by market-specific contexts.

Against this backdrop, the motivation of the study is to examine how fungibility influences decision-making among forex traders in Nigeria. In particular, it examines the question of whether traders distinguish between money in terms of its origin and the perceived differences in money do influence risk-taking, frequency of trade, and capital allocation. The study addresses the literature gap by applying fungibility to behavioural finance and real time trading environment, which aligns theory with practice in new financial markets.

2. LITERATURE REVIEW

Conceptual Review

Fungibility is a core economic concept that presupposes that every unit of money is identical and should be treated this way irrespective of the origin or the purpose of its utilization. However, behavioural finance refutes this by showing that people do not respect fungibility in a systematic way by displaying cognitive bias, especially mental accounting. Mental accounting is defined as the method whereby individuals classify, judge and handle money differently according to the personal standards of the source, purpose or previous results (Thaler, 1985).

In this paper, fungibility is conceptualised using three important elements. First, there is source sensitivity, or the propensity of people to give varying values to money in terms of the source (e.g., salary vs. trading profits). Second, risk perception distortion describes the asymmetric treatment of gains and losses and it frequently results in risk-seeking behaviour following gains and aversion towards risk following losses. Third, the reinvestment bias describes the impact of previous financial performance on future investment behavior including the propensity to reinvest profits more vigorously.

These elements are particularly applicable in forex trading because the market is volatile, leveraged, and does not require much time to make decisions.

Traders frequently split money into psychological accounts as safe capital and risk capital, which is inconsistent with rational financial theory. Although this type of categorisation might be effective at promoting discipline, it can also cause inefficient allocation of capital, high risks, and unstable trading policies. Therefore, mental accounting offers a crucial behavioural perspective of fungibility violations within the high-frequency trading systems.

Empirical Review

Empirical research gives significant evidence on the role of mental accounting and fungibility violation in making financial decisions, although results are inconsistent across settings.

Thaler (1985) carried out early experiments that used behavioural experiments to determine that people mentally divide money, which causes them to make inconsistent consumption and investment choices. Building on that, Imas, Loewenstein, and Morewedge (2020) used an experimental design approach and discovered that people do not spend money in the same way based on the perceived origin, which implies a high degree of violations of fungibility. These results are in line with Paul, Parker, and Dommer (2022) who employed a survey-based analysis to demonstrate that a higher role integration enhances fungibility, whereas a strong mental accounting minimizes the best financial decisions.

Rashwan (2021) used quantitative analysis in the context of investment and discovered that mental accounting considerably affects asset allocation and risk perception, which supports the behavioural effect on financial outcomes. On the same note, through empirical research of cryptocurrency markets, Ginting, Crystopher and Yunita (2023) demonstrated that traders experience reinvestment bias, placing more risk after prior gains. This is in agreement with Radianto et al. (2022), who employed survey and regression analysis to show that mental accounting can affect entrepreneurial financial decision-making, although these effects are mitigated by financial literacy.

There is counter evidence though. In comparative analysis, Li (2021) discovered that gender is one of the demographic factors that affect mental accounting tendencies, indicating that the biases are not universal among all individuals. In a systematic review, Silva, Moreira, and Bortolon (2023) stated that mental accounting eases the decision-making process but introduces inefficiencies that lessen financial performance.

Additionally, in support of this, Kahneman and Tversky (2013) employed experimental approaches to demonstrate that people have loss aversion and dependence on references, which supports distortion of risk perception. Mental accounting is more broadly applicable in finance; Barberis and Huang (2001), in their theoretical modelling, correlated mental accounting with asset pricing anomalies. Further on, Odean (1998) through trading data analysis determined that investors are irrational holding onto the losses too long and selling the gains too fast, which is a manifestation of the mental accounting behaviour.

Summarizing these studies, it is agreed that mental accounting plays an important role in financial decision-making in terms of source sensitivity, risk distortion, and reinvestment behaviour. Yet, there is still a major gap: the majority of research is household finance, stock market, or experimental, with little emphasis on real time, high-frequency trading, e.g. forex, especially in emerging economies, like Nigeria. Furthermore, the interplay between the fungibility violations and the contextual determinants (financial literacy and market volatility) is poorly studied.

This paper fills this gap by considering how the elements of fungibility influence decision-making between Nigerian forex traders and thus broadens the literature on behavioural finance to a dynamic and under-studied setting.

Theoretical Review

The research is based on the theory of behavioural finance, especially the mental accounting theory, prospect theory, and bounded rationality to explain the breach of fungibility in the forex trade. The mental accounting theory holds that people group money into distinct mental accounts depending on its origin or application, which result in incoherent financial choices (Thaler, 1985). As empirical evidence reveals, this categorization leads to the skewed perception of risk and the inability to uphold the concept of fungibility (Paul et al., 2022). This theory is suitable because it simply explains why traders perceive profits, capital and losses differently.

Prospect theory also describes risky decision making focusing on loss aversion and reference dependence. Traders tend to take excessive risks after gains ("house money effect") and become risk-seeking after losses (Kahneman & Tversky, 2013; Imas et al., 2020). This justifies the research topic of risk-taking behaviour in forex trading.

Bounded rationality implies that people make use of heuristics because of cognitive constraints, particularly in complicated environments (Simon,

1955). It applies well in high frequency forex markets where it is necessary to make quick decisions.

Collectively, these theories describe how the fungibility of the Nigerian traders is broken by means of biased risk-taking, mental categorisation, and heuristic-driven decisions.

3. METHODOLOGY

3.1 Area of Study

The research was carried out in Nigeria, which is a significant retail forex trading centre in West Africa. Nigeria was also chosen because of the high density of retail traders, online forex traders, and financial education institutions. This region offered an appropriate sample to test the effect of fungibility on decision-making in real-time and high-frequency trading.

3.2 Research Design

The quantitative and cross-sectional survey was used to examine how fungibility affects decision-making among forex traders. This design enabled the systematic collection and statistical analysis of primary data to help find behavioural patterns and variable associations (Arora, Inani, and Vihari, 2023).

3.3 Population, Sample Size and Sampling Technique

The population of interest was active forex traders in Nigeria. Purposive sampling was used to select a sample of 150 respondents to make sure that only those respondents who have actual experience in trading and are available are included. This method enabled the research to obtain certain knowledge using the informed participants who are able to reflect on the real trading behaviour (Akhtar, Sharif, and Kamboh, 2024).

3.4 Research Instrument

Data collection was done through a structured questionnaire. It had three parts: Section A covered demographic data, Section B was used to measure the independent variable (fungibility), and Section C was used to measure the dependent variable (decision-making). Each was measured using a 5-point Likert scale and the response options were strongly disagree, strongly agree. The instrument was based on scales that had been previously validated in earlier behavioural finance research (Silva, Moreira, and Bortolon, 2023).

3.5 Validity of Research Instrument

Content and face validity were ensured through expert reviews in behavioural economics and finance. An initial pilot study was done on 20 respondents whose feedback was used to refine the questionnaire. The internal consistency of the instrument was established at a Cronbach's alpha of 0.81, which satisfies the reliability requirement in a social science study (Rashwan, 2021).

3.6 Measurement of Variables

The independent variable, known as fungibility, was assessed through three dimensions, including source sensitivity, distortion of risk perception, and reinvestment bias. The source sensitivity determined whether traders would not treat money differently depending on the origin. Risk perception distortion tested the role played by gains and losses in trading risk. Reinvestment bias discussed how previous gains or losses are used as the foundation of new trades. These constructs can be related to the mental accounting theory suggested by Thaler and developed further by Imas, Loewenstein, and Morewidethead (2020), which found that traders tend to attribute varying values to money based on its source or the situation.

The model for the study was expressed as:

$TDM = \beta_0 + \beta_1 SS_1 + \beta_2 RPD_2 + \beta_3 RB_3 + \varepsilon$

Y = trading decision-making, X 1 = source sensitivity, X 2 = risk perception distortion, X 3 = reinvestment bias.

3.7 Data Analysis Method

Data analysis was done using SPSS version 26. Demographic characteristics were summarised by using descriptive statistics (mean, frequency, percentage, standard deviation). The impact of the independent variables on the dependent variable was tested using inferential statistics and, in particular, multiple regression analysis. $p < 0.05$ was the level of significance.

4. RESULT AND ANALYSIS

Table 1 shows the demographic profile of the respondents. The data reflected that the largest group (51.7%) were aged 18-24, followed by 37.5% in the 25-34 age group. Lower percentages were registered in the older age bracket. The majority of the 85% respondents were men with 15% women. 61.6 percent of the respondents were B.M 25% Sc degree holders.The degree holders were 66.6% S degrees, and 13.4% secondary school. Most respondents (54.5%) earned less than ₦500,000 monthly while 38.4% earned between ₦500,000 and ₦5,000,000 monthly, and 7.1% earned above ₦5,000,000. Respondents that traded daily were 60.7 percent, weekly were 29.5 percent, monthly were 2.7 percent and those who had not traded were 7.1 percent.

Table 1: Respondents' profile.

Characteristics	Category	Frequency	Percent
Age	18 - 24	58	51.7
	26 - 35	42	37.5
	36 - 45	7	6.3
	46 - 55	4	3.6
	56 - 65	1	0.9
Gender	Male	95	85
	Female	17	15
Educational Level	B.Sc/ND	69	61.6
	M.Sc	28	25
	O'Level	15	13.4
Monthly Earnings	Below N500,000	61	54.5
	Between N500,000 and N5,000,000	43	38.4
	Above N5,000,000	8	7.1
Frequency of trading	Daily	68	60.7
	weekly	33	29.5
	monthly	3	2.7
	Never	8	7.1

Field survey (2025)

The analysis in Table 2 showed that 62.5% agreed that they treat profits differently from salary, and 71.4% agreed they feel more comfortable risking profits than savings. Approximately 71.4% said they use bigger risks when they have made bigger profits and almost 80.3% said they get more cautious when they have made losses. Moreover, 73.3% said they re-invest recent gains fast, and 73.2% made decisions based on past trades. These findings show that traders have great propensities towards source sensitivity, distorted perception of risk and bias in reinvestment. The high mean scores across items (ranging from 3.72 to 3.98) suggest that fungibility significantly influenced forex traders' behaviour.

Table 2: Independent Variable – Fungibility

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
Source sensitivity							
I treat profits from forex trades differently from my salary.	40 (35.7%)	30 (26.8%)	20 (17.9%)	15 (13.4%)	7 (6.2%)	3.72	1.25
I feel more comfortable risking profits than risking my personal savings.	45 (40.2%)	35 (31.2%)	15 (13.4%)	10 (8.9%)	7 (6.2%)	3.91	1.20
Risk perception distortion							
I take bigger risks when I am trading with past profits.	50 (44.6%)	30 (26.8%)	15 (13.4%)	10 (8.9%)	7 (6.2%)	3.95	1.22
I become more cautious after a trading loss.	55 (49.1%)	35 (31.2%)	10 (8.9%)	7 (6.2%)	5 (4.5%)	4.14	1.10
Reinvestment bias							
I often reinvest recent gains into new trades without hesitation.	48 (42.9%)	34 (30.4%)	15 (13.4%)	10 (8.9%)	5 (4.5%)	3.98	1.15
I base new trading decisions on the outcomes of previous trades.	44 (39.3%)	38 (33.9%)	16 (14.3%)	10 (8.9%)	4 (3.6%)	3.96	1.10

Author's computation (2025)

The analysis in Table 3 showed that 66.1% agreed that their decision to enter a trade is influenced by the source of funds; 67.9% agreed they make riskier trades with non-salary money; 66% agreed they avoid losses more when using personal savings; 75% agreed their risk perception changes based on recent outcomes; 74.1% agreed their trading behaviour is shaped by mental fund allocation; and 68.7% agreed they repeat trade patterns based on recent trades. These findings show that the way traders think and mentally handle their money has a lot of influence in decision-making. The mean scores ranging from 3.82 to 3.88 are high and indicate that mental treatment of money had a significant influence on trading decisions.

Table 3: Dependent Variable – Decision-Making

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
My decision to enter a trade is influenced by the source of funds I use.	42 (37.5%)	32 (28.6%)	18 (16.1%)	12 (10.7%)	8 (7.1%)	3.79	1.38
I make more risky trades when I'm trading with money I didn't earn as salary.	46 (41.1%)	30 (26.8%)	20 (17.9%)	10 (8.9%)	6 (5.4%)	3.89	1.48
I avoid losses more strongly when using personal savings in trading.	38 (33.9%)	36 (32.1%)	22 (19.6%)	10 (8.9%)	6 (5.4%)	3.80	1.30
My perception of risk changes depending on recent gains or losses.	50 (44.6%)	34 (30.4%)	16 (14.3%)	8 (7.1%)	4 (3.6%)	4.05	1.53
My trading behaviour is influenced by how I mentally allocate funds.	48 (42.9%)	35 (31.2%)	15 (13.4%)	9 (8.0%)	5 (4.5%)	4.00	1.52
I tend to repeat trade patterns based on recent outcomes.	40 (35.7%)	37 (33.0%)	18 (16.1%)	10 (8.9%)	7 (6.2%)	3.83	1.38

Author's computation (2025)

To test the hypothesis concerning the impact of fungibility, which is evaluated by source sensitivity, distortion in risk perception, and bias in reinvestment on forex trading decision-making, a multiple regression analysis was conducted. The analysis in Table 4 shows the regression results indicating the impact of each component on trading decisions.

The findings revealed a positive relationship between each of the individual components of fungibility and trading decision-making, indicating that decision-making became better or varied with increase in intensity of each behavioural tendency. Nevertheless, the statistically significant role in influencing decision-making was only played by risk perception distortion ($t = 2.764$, $p < 0.01$), but not by source sensitivity ($t = 0.528$, $p > 0.05$) and reinvestment bias ($t = 0.884$, $p > 0.05$). This means that the way traders viewed and reacted to new gains or losses contributed more to their decision making. Therefore, the improvement of rational trading behaviour should be more aimed at the moderation of risk perception biases.

Moreover, the joint influence of source sensitivity, risk perception distortion, and reinvestment bias on trading decision-making was significant ($F = 35.943$, $p < 0.01$). This implies that the three elements when put together had a major impact on the decision making process of forex traders. The coefficient of determination ($R^2 = 0.406$) revealed that fungibility explained 40.6% of the variation in decision-making. These findings imply that fungibility played a major role in the trading decision-making process of forex traders in Nigeria. Thus, the hypothesis was rejected.

Table 3: Multiple Regression Analysis of the Influence of Fungibility on Forex Trading Decision-Making

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.637	0.406	0.387	2112.87
a. Predictors: (Constant), Source_Sensitivity, Risk_Perception_Distortion, Reinvestment_Bias				

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	245679392.78	3	81893130.93	35.943	.000b
Residual	215897329.22	109	1980709.44		
Total	461516722.00	112			
a. Dependent Variable: Trading_Decision_Making					
b. Predictors: (Constant), Source_Sensitivity, Risk_Perception_Distortion, Reinvestment_Bias					

Coefficients

Model	Independent Variables	Unstandardized Coefficients B	Std. Error	Beta	t	Sig.
1	(Constant)	2785.45	1203.74		2.315	0.023
	Source_Sensitivity	73.152	251.288	0.078	0.528	0.599
	Risk_Perception_Distortion	420.231	133.261	0.454	2.764	0.007
	Reinvestment_Bias	110.601	164.217	0.161	0.884	0.379
Dependent Variable: Trading_Decision_Making						

Author's computation (2025)

DISCUSSION OF FINDINGS

The results of the research showed that the distortion of risk perception seriously affected the decision making of forex traders but source sensitivity and reinvestment bias had no effect. It confirms the argument by Imas, Loewenstein, and Morewindows (2020), who demonstrated that when subjected to mental laundering, people tend to behave differently with ethically and unethically obtained money, which is a clear breach of fungibility. On the other hand, Rashwan (2021) had argued that mental accounting tends to improve the decision-making process by increasing the risk assessment, suggesting a stabilising effect on trading behaviour. This opposition indicates that some mental categorisations can increase awareness of risk whereas others like emotional reactions towards current gains or losses can distort it.

Moreover, Paul, Parker, and Dommer (2022) found that individuals with integrated life roles displayed more fungible financial behaviour, supporting this study's evidence of low influence from reinvestment bias and source sensitivity. Silva, Moreira, and Bortolon (2023) have however warned that mental accounting is extremely circumstantial and may lead to behavioural inconsistency, depending on the financial situation. This demonstrates that the impact of fungibility is subtle and forex education should pay more attention to dealing with emotional triggers than simple mental classifications.

5. CONCLUSION AND RECOMMENDATION

The research found that the fungibility was a major determinant of forex trading in Nigeria, with distortion of risk perception having the strongest impact. Recent gains and losses made traders more likely to change their behaviour whereas the influence of source sensitivity and reinvestment bias was less significant. This implies that forex decision making is more influenced by emotional feelings about previous performance as opposed to the source or reutilization of funds.

According to these results, behavioural education on how to deal with emotional biases should be a priority of financial educators and trading platforms. The rational decision-making and trading results can be improved with the help of programs that make traders more aware of risk perception.

REFERENCES

1. Akhtar, S., Sharif, S., & Kamboh, M. (2024). Role of Corporate Social Responsibility between Mental Accounting and Investment Decision Making. NICE Research Journal. https://doi.org/10.51239/nrjss.v17i1.424.
2. Arora, S., Inani, S., & Vihari, N. (2023). Unravelling the Landscape of Mental Accounting Research Using Machine Learning: A Topic Modelling Approach. 2023 International Conference on Innovative Computing, Intelligent Communication, and Smart Electrical Systems (ICSES), 17. https://doi.org/10.1109/ICSES60034.2023.10465561.
3. Barberis, N., & Huang, M. (2001). Mental accounting, loss aversion, and individual stock returns. the Journal of Finance, 56(4), 1247-1292.
4. Ginting, R., Crystopher, D., & Yunita, K. (2023). Revealing the Meaning of Indonesian Cryptocurrency Investment Decisions Based on Mental Accounting: A Phenomenological Study. Jati: Jurnal Akuntansi Terapan Indonesia. https://doi.org/10.18196/jati.v6i1.18042.
5. Imas, A., Loewenstein, G., & Morewedge, C. (2020). Mental Money Laundering: A Motivated Violation of Fungibility. Journal of the European Economic Association. https://doi.org/10.1093/jeea/jvaa059.
6. Kahneman, D., & Tversky, A. (2013). Prospect theory: An analysis of decision under risk. In Handbook of the fundamentals of financial decision making: Part I (pp. 99-127).
7. Li, Z. (2021). The Gender Psychology of Mental Accounting Financial Decision Making. 2021 5th International Conference on Business and Information Management. https://doi.org/10.1145/3483794.3483804.
8. Mahapatra, M., & Mishra, R. (2020). Behavioral influence and financial decision of individuals: A study on mental accounting process among Indian households. Cogent Economics & Finance, 8. https://doi.org/10.1080/23322039.2020.1827762.
9. Odean, T. (1998). Are investors reluctant to realize their losses?. The Journal of finance, 53(5), 1775-1798.
10. Paul, I., Parker, J., & Dommer, S. (2022). Role Integration Increases the Fungibility of Mentally Accounted Funds. Journal of Marketing Research, 60, 263 - 277. https://doi.org/10.1177/00222437221112058.
11. Radianto, W., Salim, I., Christian, S., Efrata, T., & Dewi, L. (2022). Does Mental Accounting Play an Important Role in Young Entrepreneurs? Studies on Entrepreneurship Education. Journal of

Educational and Social Research. https://doi.org/10.36941/jesr-2022-0040.
12. Rashwan, A. (2021). Measuring the Impact of Mental Accounting on Financial and Investment Decisions among Investors.
13. Silva, E., De Lacerda Moreira, R., & Bortolon, P. (2023). Mental Accounting and Decision Making: a systematic review of the literature. Journal of Behavioral and Experimental Economics. https://doi.org/10.1016/j.socec.2023.102092.
14. Simon, H. A. (1955). A behavioral model of rational choice. The quarterly journal of economics, 99-118.
15. Thaler, R. (1985). Mental accounting and consumer choice. Marketing science, 4(3), 199-214.