



RESEARCH ARTICLE

Effect of Mental Accounting on the Investment Decision-Making in Nigerian Economy

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ABSTRACT

This study examined the effect of mental accounting on investment decision-making in Nigeria's economy. The specific objective sought to examine the effect of opening and closing accounting to evaluate the effect of Fungibility on the investment decision-making process in Nigeria's economy. A survey research design was adopted for the study. The study adopts a primary source of data, a well-structured questionnaire was used to obtain the data, and it included multiple-choice and open-ended questions. The data collected were presented in tables and analyzed in percentages. The data was analyzed using Chi-square. SPSS 28.0 was used for coding and analyzing the data. The result revealed that closing accounting has a significant positive effect on the investment decision-making process with the calculated value of χ^2 (23.329), which is greater than the critical value of (3.45) while fungibility also has a significant positive effect on the investment decision-making process with the calculated value of χ^2 (19.441), which is less than the critical value (3.45) in Nigeria's economy. we concluded that mental accounting has a significant positive effect on investment decision-making in Nigeria. We commend that, investors should always consider the firm opening and closing balance and as well the fungibility before embarking on any investment decision-making.

Keywords: Mental Accounting; Investment Decision-Making; Nigerian Economy

Introduction

Mental accounting describes the various valuations a person assigns to the same quantity of money based on arbitrary standards, frequently with unfavorable outcomes. The discipline of behavioral economics includes the idea of mental accounting. The theory was put forth by economist Thaler (1999), who claims that because people categorize funds differently, they are more likely to make illogical decisions regarding their spending and investing. In the behavioral analysis of managing financial affairs, it is common to see a propensity to break the investing problem down into smaller decision units. The decision units, referred to as mental accounts, are handled separately rather than as a whole. For instance, Shefrin and Thaler (1988) describe that people frequently divide their income into three categories based on its source: pay income, asset income, and future income, and discover that each category's marginal propensity to spend the money varies. The fungibility of money is an economic premise that is broken by this activity. Because money in one mental

account cannot perfectly replace money in another (Rockenbach, 2004).

The breakdown of the investment problem into mental accounts is understood as the outcome of the prospect theory-described framing (editing) of the complex problem into simpler subproblems. Several "anomalies" that are regularly reported in behavioral finance can be explained by modeling investors' decision-making as being based on mental accounts. The concepts of cognitive categorization can be used to comprehend mental accounting (Zhang & Sussman, 2017). This method emphasizes significant factors that explain why people may engage in mental accounting, particularly in the area of investment decision-making. According to Xiao and O'Neill (2018), mental accounting makes it easier to process information to analyze spending possibilities that influence all investment decision-making. According to Xiao and O'Neill (2018) and Zhang and Sussman (2017), mental accounting principles place a strong emphasis on decisions made for a specific period and take into account how much should be spent after taking into account income and expenses, how much can be used for vacations or travel, and how much more will be spent on other expenses in that period.

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An investor's mental accounting mode involves constantly weighing the advantages and disadvantages of various options (Sharma & Prasad, 2018). Individuals who consistently assess the costs and rewards of all actions done when making decisions are said to engage in mental accounting (Zhang & Sussman, 2017). Investments are the activities which include investing some resources to get return in the future. Investments are basically placing some fund today in expected to get profits in the future. It is obvious that investors not only consider the estimate of the prospects of investment instruments alone in their investment behavior, but also involve psychological factors in making their investment decisions.

Statement of the Problem

Many investors have mental biases when it comes to accounting for investments, which greatly affects how they choose to trade on the financial markets. Psychological variables can have an impact on an investor's decision-making, and one of the most prevalent blunders in the stock market is when an investor separates their trades into separate mental accounts because they are perceived as isolated islands. Failure to know the Fungibility and opening and closing of the account of the company intended to trade with hider investment decision-making.

Objectives of the Study

The study's main objective is to examine the impact of Mental Accounting on Investment Decision-Making in Nigeria's Economic. The specific objective sought to

- i. To examine the effect of opening and closing accounting on the investment decision-making process in Nigeria's economy
- ii. To evaluate the effect of Fungibility on the investment decision-making process in Nigeria's economy

Hypothesis of the Study

- i. Opening and closing accounting has no significant positive effect on the investment decision-making process in Nigeria's economy.
- ii. Fungibility has no significant positive effect on the investment decision-making process in Nigeria's economy.

Review of Related Literature

Conceptual Review

Mental Accounting

Mental accounting involves placing activities into certain accounts. Both sources and uses of money should be grouped in some accounts mentally like an accounting system. Mental accounting can be understood through the principles of cognitive categorization (Zhang & Sussman, 2017). This approach highlights important reasons why individuals may be involved in mental accounting, especially in the domain of consumer finance. Mental accounting helps facilitate information processing to evaluate spending opportunities that affect all consumption decisions (Xiao & O'Neill, 2018). The principles of mental accounting principles focus decisions on a certain period and consider how much to spend taking into account income and expenses, how much can be used for vacations or travel and how much more will be spent on other expenses in a certain period (Xiao & O'Neill, 2018; Zhang & Sussman, 2017). Mental accounting is investors' way of thinking who always consider the costs and benefits of decisions taken (Sharma & Prasad, 2018). Mental accounting is the behavior of individuals who always use mental calculations in making decisions by weighing the costs and benefits of all actions taken (Zhang & Sussman, 2017).

Opening and Closing Accounts

One of the discretionary components of an accounting system is the decision of when to leave accounts 'open' and when to 'close' them. Consider the example of someone who buys 1000 shares of stock at ₦10 a share. This investment is initially worth ₦10,000, but the value will go up or down with the price of the stock. If the price changes, the investor has a 'paper' gain or loss until the stock is sold, at which point the paper gain or loss becomes a 'realized' gain or loss. The mental accounting of paper gains and losses is tricky (and depends on timing), but one clear intuition is that a realized loss is more painful than a paper loss. When a stock is sold, the gain or loss has to be 'declared' both to the tax authorities and to the investor (and spouse). Because closing an account at a loss is painful, a prediction of mental accounting is that people will be reluctant to sell securities that have declined in value. In particular, suppose an investor needs to raise some cash and must choose between two stocks to sell, one of which has increased in value and one of which has decreased. Mental accounting favors selling the winner (Shefrin and

Statman, 1987) whereas a rational analysis favors selling the loser. Odean (1998) finds strong support for mental accounting prediction. Using a data set that tracked the trades of investors using a large discount brokerage firm, Odean finds that investors were more likely to sell one of their stocks that had increased in value than one of their stocks that had decreased. Other evidence of a reluctance to close an account in the 'red' comes from the world of real accounting.

Fungibility

Fungibility is the thought that money has no labels and that people do not associate money with anything specific. In mental accounting, this does not hold true. People will often give names to the money they have in hand. An example is a savings account and a credit card. Although people have an outstanding balance on their credit card and enough money in their savings account to cover it, they will not spend it due to the fact the money is labeled as savings. Relating to the question, the individual may need some extra necessities, but since the extra money is associated with her entertainment, she may be reluctant to spend the money on the necessities.

Implications of Violations of Fungibility

Whenever budgets are not fungible their existence can influence consumption in various ways. One example is the case in which one budget has been spent up to its limit while other accounts have unspent funds remaining. (This situation is common in organizations. It can create extreme distortions especially if funds cannot be carried over from one year to the next. In this case, one department can be severely constrained while another is desperately looking for ways to spend down this year's budget to make sure next year is not cut.) Heath and Soil (1996) provide several experiments to illustrate this effect. In a typical study, two groups of subjects were asked whether they would be willing to buy a ticket to a play. One group was told that they had spent ₦50 earlier in the week going to a basketball game (same budget); the other group was told that they had received a ₦50 parking ticket (different budget) earlier in the week. Those who had already gone to the basketball game were significantly less likely to go to the play than those who had gotten the parking ticket.

Using the same logic that implies that money should be fungible (i.e., that money in one account will spend just as well in another), economists have argued that time should also be fungible. A rational person should allocate time optimally, which implies 'equating at the margin'. In this case, the marginal value of an extra minute devoted to any activity should be equal. The jacket and calculator problem reveals that this rule does not describe choices about time. Subjects are willing to spend 20 minutes to save ₦10 on a small purchase but not a large one. Leclerc et al. (1995) extend this notion by reversing the problem. They ask people how much they would be willing to pay to avoid waiting in a ticket line for 55 minutes. They find that people are willing to pay twice as much to avoid the wait for a ₦55 purchase than for a ₦15 purchase. As in the original version of the problem, we see that people's implicit value of their time depends on the financial context.

Investment Decision-Making Process

Investments are activities that involved investing some resources in certain businesses in order to get returns or profit in the future. Investment is placing some funds today in a business in expecting to get profit or return in the future. In order to do investment activity in the capital market properly, an investor needs to have enough knowledge, skills, and intuition about business, to analyze which stock to buy or hold and which stock to be sold (Fitri ; Nelsi; and Kamaludin 2019). The investor is supposed to be rational in making stock-purchasing decisions. There are several reasons why individuals invest, for example, they pursue investment activity to get a better future life, to reduce inflation risk, and to get tax saving benefits. Basically, people pursue investment activity for the purpose of gaining or increasing their wealth. Bodie, Kane, and Marcus (2006) argue that there are two important aspects of investment: the expected return and the risk. The investment decision is a multi-dimension construct. It involves at least the following dimensions:

- i. How much money is to be invested, will we invest in a small portion or large portion of our money?
- ii. When will we invest? Do we invest sooner or later? Do we take an investment whenever we have much money, or whenever we thought that this is the best time to invest?
- iii. Investment decision involves decisions on what kind or type of investments will we take. Is it an investment in real assets or financial assets, short-term or long-term assets, or a combination of them?
- iv. Investment decision also involves decisions about the source of fund which will be invested.

Initially, in making an investment decision, an investor not only uses the estimates of investment instruments' prospects but also is influenced by psychological factors. Investment analysis which considers both the field of

psychological science and the field of finance science is known as behavioral finance (Fitri, Nelsi, and Kamaludin 2019).

Theoretical Review

Inference Theory:

Investors often make decisions using mind-based analyses that rely on the measurement of similar situations at the time of decision-making, rather than on inflexible rational analyses, which makes investors vulnerable to mistakes by relying on vague and unclear rules of decision-making, where investors always tend to set the initial purchase price at the time of sale, and therefore today's prices are often determined by past prices, making investors determine the range of the share price or the company's income based on the historical cost, leading to a weak reaction to the unexpected changes. (Waweru et al., 2008).

Mental Accounting Theory:

The theory of mental accounting is based on the tendency of investors to place certain events and transactions in different mental accounts, and this bias is often manifested when investors make investment decisions in financial markets when investors divide their money into separate accounts for different reasons, and give each part a different assessment depending on its source, instead of looking at the scene as a single component they look at individual decisions in a way Separately, this behavior greatly affects when creating portfolios and dealing with assets and shares, making investors deviate from what the portfolio theory suggests if they focus on the interaction between portfolio components to reduce risk by making models of financial assets in separate accounts based on risk rates, as the Study (Nofsinger, 2005) suggests, 116 That investors view the risks of the stock market only independently of other risks, including portfolio risks, and this narrow view of investors is one of the biases that greatly affect the reluctance of many to invest in the stock market.

Market Factor

The market factor, in turn, affects the decision-making of investors in the financial markets. (The Waweru study et al., 2008). Market factors influence investor decision-making in stock markets, such as price changes, market information, changes in stock prices during previous periods, customer preference, overreactions to changes in stock prices, and the nature of stocks that reflect the underlying market characteristics. Investors also do not react logically to the new information available but over trust and change their options when making minor changes in the presentation of investment information over the past few years, which may lead investors to make incorrect investment decisions (Caparrelli et al., 2004), (Waweru study et al., 2008) indicates that market information has a significant impact on investors' investment decision-making behavior and this somehow makes investors tend to focus on core stocks and other financial events that affect and attract attention and rely on information provided by the stock market, as many Investors depend entirely on the quality of the information available on the financial market or the shares that they have when making their investment decisions, and that the change in stock prices has an impact on their investment behavior at a certain level, as investors prefer to buy shares over selling them that have been experiencing higher changes in stock prices during the past two years, but mental accounting supports the sale of shares that make profits even though the rational decision is Selling stocks that make losses because holding losing shares is a weaker investment, where investors sell dividends to avoid the pain of realizing the loss is too great to bear, and this is the effect of aversion to loss that may prompt investors to make irrational decisions.

Empirical Review

Yuntong, et al. (2013) on the nonfungibility of mental accounting. Nonfungibility is taken to be the fundamental characteristic of mental accounting. In order to demonstrate that nonfungibility is not absolute, we propose the following hypothesis: there exists a money flow from an account that contains consumer goods with low psychological worth to an account that contains consumer goods with high psychological value. To evaluate the hypothesis, they designed 2 related experiments, and invited 236 undergraduates and 240 male workers to participate in the research. It was shown in Study 1 that there was a flow of money from a luxury account to either a communication or a food account, and from a communication account to a food account, but not in the opposite directions. In Study 2 it was found that with the increased attractiveness of a gamble, the flow of money into an

entertainment account from other accounts became more likely. The results of this study offer preliminary evidence of the agility of mental accounts.

Fitri, Nelsi, and Kamaludin (2019) examined the effect of mental accounting on student's investment decisions. Data were collected through the use of questionnaires. The study used simple linear regression analysis to test the hypothesis. The findings demonstrate that investors indeed possess the MA. The average responses from respondents show that they invest monthly money and bonus money differently. When using monthly money as capital, they typically use a smaller portion of their monthly income for investment. However, when using bonus money as capital, they typically use a larger portion of their monthly income for investment. The respondents' monthly income is more significant to them than their bonus income, and they are also more afraid of the risks associated with investing their monthly income than they are with investing their bonus income. When there is a loss, the respondents express more regret over their monthly income losses than they do over their bonus income losses. The outcome demonstrates that the MA exists among investors and has a big impact on stock investment choices.

Weisong (2021) investigated the application of mental accounts of behavioral finance in internet economy. With the development of e-commerce platforms, online shopping has brought many conveniences and benefits to consumers, and more and more consumers have joined the ranks of online consumption. Large-scale e-commerce and frequent merchant promotions have stimulated consumption, causing transaction records to be constantly updated. At the same time, there are many uncertainties in online shopping, leading to very subtle and complex changes in consumer psychology, making consumers aware of risks. This article explores the use of mental accounts in behavioral finance in the Internet economy, examines the impact of mental account characteristics on the Internet economy, and then uses experiments to demonstrate the use of mental accounts in behavioral finance in the Internet economy. Internet products can be positioned based on mental accounts because the experimental results demonstrate that the allocation of monies to various mental accounts differs.

Abd El Rahman and Khalil (2022) on measuring the impact of mental accounting on financial and investment decisions among investors. The results of the study found that mental accounting contributes to improving the risk assessment of financial and investment decisions made by Palestinian investors, helping them avoid risks associated with those decisions. The study used the descriptive analytical method, and it was based on a questionnaire distributed to the study's sample, which consisted of (136) Palestinian investors.

Methodology

For this study, survey research design was adopted to ensure originality and reliability. The population of this research work consists of the management and staff of selected Nigeria financial institutions. The total population is 58. In order to minimize sampling error, this study applied simple random sampling technique in selecting and interacting with staff of the considered financial institutions. A sample of 50 was selected based on Yamane sample size determination. The questionnaires were used in the study to achieve the desired result. The questionnaire included multiple-choice and open-ended questions. They were used to assist respondents in expressing their opinions, allowing this study to obtain the necessary information. The data collected will be presented in tables and analyzed in percentages. The hypothesis will be analyzed by the use of Chi-square. SPSS 28.0 will be used for coding and data analysis.

Data Presentation and Analysis

In screening and analyzing of data collected, the use of tables and percentages will be of paramount significance. The data collected will be presented in tables and analyzed in percentages. The hypothesis will be analyzed by the use of Chi-square. SPSS 28.0 will be used for coding and data analysis.

Table 1: Demographic Data Presentation

	<i>Frequency</i>	<i>Percentage</i>
Gender		
Male	32	64%
Female	18	36%
Marital Status		
Single	15	30%
Married	29	58%
Divorced	4	8%
Age		
20-29 years	7	14%
30-39 years	14	28%
40-49 years	18	36%
>50 years	11	22%
Working Experience		
< 5 years	13	26%
5-10 years	21	42%
11-20 years	12	24%
>20 years	4	8%
Qualification of Respondents		
Bachelor's Degree	31	62%
Master's degree	9	18%
PhD	3	6%
Secondary Certificates	7	14%

Source: Field Work 2022

Table 1 is the demographic profile of the respondents, 64% of the respondents are male while 36% of the respondents are female. Marital status showed that married people responded more to the questionnaire with 58% response rate followed by single with 30% response rate. In terms of age most of the respondents are within the age bracket of 40-49 years, while the least response was within 20-29 years.

Most of the respondents have a working experience between 5-10 years which recorded a response rate of 42%, while the least working experience is >20 years. Lastly when considering the academic qualification of the respondents most of them are bachelor's degree holders with 62% response rate, followed by master degree holders with 18% response rate, secondary certificate and PhD with 14% and 6% response rate respectively.

Research Question 1:

Is there any effect of opening and closing accounting on the investment decision-making process in Nigeria's economy?

Table 2: Response Rate for research hypothesis 1

<i>Option</i>	<i>Frequency</i>	<i>Percentage</i>
Yes	36	72%
No	14	28%
Total	50	100%

The above table shows that 72% of the total respondents are of the opinion that there is an effect of opening and closing accounting on the investment decision-making process in Nigeria's economy while 28% of the total respondents don't believe that there is an effect of opening and closing accounting on the investment decision making process in Nigeria economy.

Research Question 2:

Does fungibility have an effect on the investment decision-making process in Nigeria's economy?

Table 3: Response Rate for Research hypothesis 2

Option	Frequency	Percentage
Yes	39	78%
No	11	22%
Total	50	100%

The above table shows that 78% of the total respondents are of the opinion that fungibility has an effect on investment decision-making in Nigeria’s economy while 22% of the total respondents believed that fungibility has no effect on investment decision-making in Nigeria’s economy.

Testing of Hypotheses

At this point tests, the hypothesis formed is either to accept or reject them and as well as determining the extent of their reliability. In other to achieve this, we shall use the chi-square method which is the chi-square (X^2) test.

Hypothesis One

H₀₁: Opening and closing accounting has no significant positive effect on the investment decision-making process in Nigeria’s economy.

Test Statistic

X^2 = Chi-square

Formula = $X^2 = \sum (O - E)^2/E$

O = observed frequency

E = expected frequency

Assumption:

The level of significance used is 5%, Which is 0.05.

Degree of Freedom

The degree of freedom is given as $DF = (P-1) (Q-1)$

Were

P = rows, Q = columns

$DF = (2-1) (2-1) = 1$

Table 4: Chi-Square Table for Hypothesis 1

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	23.329 ^a	1	.000		
Continuity Correction	21.052	1	.000		
Likelihood Ratio	28.109	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	26.619	1	.000		
N of Valid Cases	50				

The value of 1 at 0.05 significant level is = 3.45. Using the chi-square table.

Thus: the critical value is given as $X^2 = 3.45$.

Since the calculated value of X^2 (23.329), is greater than the critical value (3.45), we reject the null hypothesis and accept the alternative hypothesis. We, therefore, conclude that the opening and closing accounting has a significant positive effect on the investment decision-making process in Nigeria’s economy

Hypothesis Two

H₀₂: Fungibility has no significant positive effect on the investment decision-making process in Nigeria’s economy.

Test Statistic

X^2 = Chi-square

Formula = $X^2 = \sum (O - E)^2/E$

O = observed frequency

E = expected frequency

The level of significance used is 5%, Which is 0.05.

Degree of Freedom

The degree of freedom is given thus: $DF = (P-1) (Q-1)$

Were

P = rows Q = columns

$DF = (2-1) (2-1) = 1$

Table 5: Chi-Square Table for Hypothesis 2

Chi-Square Tests									
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)				
Pearson Chi-Square	19.441 ^a	1	.000						
Continuity Correction	15.119	1	.000						
Likelihood Ratio	24.019	1	.000						
Fisher's Exact Test				.000	.000				
Linear-by-Linear Association	19.004	1	.000						
N of Valid Cases	50								

The value of 1 at 0.05 significant level is = 3.45. Using the chi-square table.

Thus: the critical value is given as $X^2 = 3.45$.

Since the calculated value of X^2 (19.441), is less than the critical value (3.45), we reject the null hypothesis and accept the alternative hypothesis. We, therefore, conclude that fungibility has a significant positive effect on the investment decision-making process in Nigeria's economy.

Summary of Findings

Percentages of respondent's opinion

Research Question One

(Yes = 36=72%; No = 14=28%)

Research Question Two

(Yes = 39=78%; No = 11=22%)

Chi-Square Test

Hypothesis One

$X^2 = \text{Chi-square} = 23.329$; $\alpha = 0.05$; critical value=3.45; p-value = < 0.05.

(Alternative hypothesis accepted)

Hypothesis Two

$X^2 = \text{Chi-square} = 19.441$; $\alpha = 0.05$; critical value=3.45; p-value = < 0.05.

(Alternative hypothesis accepted)

Conclusion

The study conducted was to examine the effect of mental accounting on investment decision-making in Nigeria's economy, the result obtained using the chi-square statistic is entirely the opinion of the respondents within the considered financial institution and it suggests that at 5% level of significance opening and closing accounting, with fungibility has a statistically significant positive effect on the investment decision making process in Nigeria's economy. We therefore, we concluded that, mental accounting has significant positive effect on investment decision-making in Nigeria.

Recommendation

We commend that, investors should always consider the firm opening and closing balance and as well the fungibility before embarking on any investment decision making. In addition, we recommend the following:

- i. Investors should endeavor to carefully observe the firm opening and closing before making any investment decision.
- ii. Investors should always have in mind fungibility implication before embarking on investment decision making.

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