



## Measuring the Impact of Mental Accounting on Financial and Investment Decisions among Investors

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### Abstract

*The study aims to identify the impact of mental accounting on financial and investment decision-making among Palestinian investors. The study used the descriptive analytical method, and the study was based on a questionnaire distributed to the sample of the study consisting of (136) Palestinian investors, and the results of the study found that mental accounting contributes to enhancing the risk assessment of financial and investment decisions of Palestinian investors, thus avoiding the risks associated with the decisions taken, and recommended the need to conduct simulation models to raise the financial culture of investors in light of the uses of mental accounting in financial and investment decisions in order to increase the skills and potential of investors in managing the information available to them in the portfolio management Finance.*

**Keywords:** Mental Accounting, Decision-making, Investors.

### Introduction

Mental or mental accounting and others call it psychological accounting, drafted by Richard Thaler, professor of behavioral economics at the University of Chicago's Booth School of Business, who won the Nobel Prize in Economics in 2017, and whose ideas inspired many scientists in various disciplines, and contributed to changing the way we think about human behavior, which pointed to the different value of money in people based on subjective criteria that lead them to negative results and exposure to irrational decisions in their spending and investment behavior.

Mental accounting is a set of cognitive processes used by individuals and families to organize, evaluate and track financial activities (Thaler, 1999), affecting how investors and other individuals spend and save their money, as well as how they deal with unexpected losses, and explain how investors make their financial and investment decisions by creating separate psychological accounts in their minds for the same type of resource, and how their psychological feelings about it prevent them from focusing on the final outcome of their financial and investment decisions.

Mental accounting often leads people to make illogical investment decisions and to act in ways that negatively or financially counterproductive, and investors have to treat the funds invested as permanently replaceable when invested between different accounts, whether in the calculation of the budget or the calculation of wealth (savings and investments); in order to avoid bias in mental accounting.

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Mental or psychological accountability has sometimes serious consequences in everyday life, it affects how investors spend money and how they save it, where the majority of investors make big mistakes when making their financial and investment decisions because of that psychological phenomenon, and this phenomenon affects how they deal with unexpected losses and gains, the source of money affects how it is spent.

## Study Problem

Many investors tend to be mentally accounting biases in investment, which plays a big role in influencing their decisions to trade in the financial markets. Investors' decisions are influenced by psychological factors, and sometimes investors separate their trades in different mental accounts, as they are seen as isolated islands, which negatively affects the efficiency of asset allocation, and this method is one of the most common mistakes in the stock market.

Investors look at their trades according to the final places where the funds are spent, many of them have different mental accounts that they follow according to their personal obligations.

It is clear here that investors who deal with their investments in the form of isolated shares will certainly face some liquidity problems, because they believe they need to hold cash in all their isolated accounts in order to support accounts that need such liquidity.

From this point of view, it is important to emphasize the importance of understanding the behavior of investors by knowing the psychological factors that lead to the decision to buy or sell securities.

Hence the problem of study, which looks at the impact of mental accounting on the decision-making of financial and investment decisions among investors, and then the study tries to answer the following questions:

- 1- Does mental accounting help investors develop a strategy for financial and investment decision-making?
- 2- Is there an impact of mental accounting on the behaviour of investors that leads them to make decisions to buy or sell securities?
- 3- Is there an impact of mental accounting on raising investors' financial culture and making the most appropriate and affordable financial decisions?

## The Objectives of the Study

The study seeks to achieve the following objectives:

- 1- Learn about mental accounting.
- 2- Highlight the contribution of mental accounting to help investors develop a strategy for financial and investment decision-making.
- 3- To show the impact of mental accounting on the behavior of investors that leads them to make decisions to buy or sell securities.
- 4- To show the impact of mental accounting on raising the financial culture of investors and making the most appropriate and affordable financial decisions.

## The Importance of Study

Mental accounting significantly influences the financial and investment decisions of investors' behaviour and has become the focus of attention for many researchers, academics and practitioners within financial markets. Because financial and investment decisions are individual decisions that belong to investors, these decisions depend on the range of mental and psychological elements of investors. It has

therefore become necessary to recognize those elements that lead to buying or selling decisions in financial markets, because understanding investors' behaviour helps to accurately understand and predict future movements of the financial markets, thus achieving higher-than-average returns or avoiding the risk associated with financial and investment decisions.

## Study Hypotheses

Based on the study's questions, we can formulate the following hypotheses:

- **The first hypothesis is** that there is a contribution to mental accounting in helping investors develop a strategy for making financial and investment decisions.
- **Second hypothesis:** There is an impact of mental accounting on the behaviour of investors that leads them to make decisions to buy or sell securities.
- **The third hypothesis:** there is an effect of mental accounting on raising the financial culture of investors and making the most appropriate and affordable financial decisions.

## Study Limits

The results of this study are determined by the following limits:

- Time limit: the period it takes to prepare this research during 2020.
- Human limit: investors.
- Spatial limit: The Association of Businessmen in the Gaza Strip.
- Objective limit: studying the impact of mental accounting on financial and investment decision-making among investors.

## Literature Review (Previous Studies)

By reviewing the literature of previous studies, researchers have found that there is a lack and scarcity of studies on mental accounting and financial and investment decision-making among investors, and previous studies can be listed as follows:

**The study of (Santi et al., 2019)** dealt with the impact of mental accounting on equity investment decisions, and the results of the study showed that the existence of the phenomenon of mental accounting among investors makes them use a larger part of their money to invest, where their monthly private funds are more important than bonus funds, and they are more afraid of the risk of investing in monthly private funds than bonus funds, and when there is a loss, the level of dissatisfaction with the losses resulting from their monthly funds is higher than the level of losses that we have sustained from investing bonus funds. The results of the study found that investors in financial markets show a bias towards mental accounting.

The study of (Obademi and Ogunlusi, 2019) Examining the impact of behavioral finance on investment decision-making, where the results of the study provided evidence of a positive impact between the decision of financing and behavioral investment, and there is a significant relationship between the potential client and the decision of individual investment; The relationship between probability theory and inference theory and investment decision is strong and negative, as recommended by the study investors should be made aware of the fact that there are many behavioral factors that can affect their investment decision-making process and they should be aware of these factors including inference theory and probability theory.

**The study of (Mascareñas, Yan, 2017)** discussed the concept of mental accounting, a combination of psychology and finance, and suggested that the investment portfolio should be determined by investors'

willingness to take risks and prefer profitability, not all investors want to risk to make profits, and not all investors will give up their profits because they are afraid of risk. Contrary to the traditional theory that investment portfolios with different levels of risk and returns are in line with investors' mental risk and profit calculations to meet their investment expectations, investors will carry out investment activities only when their psychological and mental needs are met.

In the same vein, the Mascareñas study, The results of the study showed that many investors do not want to risk profit, the investment portfolio must be determined by investors' willingness to take risks and preference for profitability, and that investors are different in making investment decisions.

**The study of (Anolam et al., 2015)** also focused on the impact of mental accounting on the profitability and performance of companies, and the results of the study revealed that all three components of mental accounting (transaction benefit, classification process, and choice between brackets) have significantly affected the profitability of the company, so the study recommends that each financial transaction should be optimally classified in the ledgers regardless of the impact of mental accounting on companies.

The study of (Ngoc, 2014) identified the behavioral factors of individual investors that influence the investment decisions of the stock market, namely the market factor, the herd factor, the theory of probability, the theory of inference, and high confidence among investors, and the results of the study indicated that the most influential factors in the investment decisions of individual investors in the stock market are the market factor, the herd factor, and the stock prices did not reflect the reality of understanding the decision of investors in the stock market.

**The study of (Bonner et al., Examined, 2014)** Whether the income list items will be detailed by company managers, and that managers prefer to group income list items in some situations and detail in other situations, where it is believed that corporate investor ratings will vary predictably depending on whether performance information is presented in a aggregated or detailed manner, where the study will conduct a set of relevant experiments in the context of behavioral finance and use tools to investigate whether managers' preferences specifically follow their expectations. To reflect mental accounting, the results of the study indicate that company managers believe that investors avoid loss relatively more than them even retroactively, and the results indicate that managers are considering additional factors that reflect mental accounting, classification based on income list elements, the relative size of income list items, and consideration of investor slate slates, such as accountability for profit results or the desire to retain them, and understanding of these additional factors will be beneficial in the future to investors.

**The study of (Thaler, 1999)** examined the concept of mental accounting as a set of cognitive processes used by individuals and families to organize, evaluate and track financial activities, and how individuals participate in mental accounting activities. The second component of mental accounting also includes the allocation of activities to specific accounts. The sources and uses of funds are classified in real and mental accounting systems. Expenditures are grouped into categories such as (housing, food, etc.), expenditure is sometimes constrained by implicit or explicit budgets, and the third component of mental accounting relates to the frequency with which accounts are assessed and "choice in parentheses".

## What Distinguishes the Current Study

Most of the studies on the subject of the study presented are foreign studies, and Arab studies dealing with mental accountability and financial and investment decision-making are still very limited and almost non-existent. Thus, this current study is characterized by the fact that it tests the impact of mental accounting on the decision-making of financial and investment decisions among Palestinian investors, where this study addressed the concept and components of mental accounting, and tested the impact of financial be-

havior theories on financial and investment decisions through the theory of probability, theory of inference, theory of inference, theory of mental accounting, market factor and herd factor, and then tested the impact of mental accounting on investment decisions.

## Theoretical Framework of the Study

### *First: The concept of mental accounting*

Mental accounting is a combination of psychology and finance, as investors carry out investment activities when their psychological needs are met in the absence of all investors willing to take risks for-profit.

Richard Thaler defined it as "the set of cognitive processes that individuals and families use to organize, evaluate and track financial activities." (Thaler, 1999)

It was also known as: "It is a narrow framework that allows people to use limited brain resources to control or manage all transactions more efficiently." (Mascareñas, Yan, 2017)

It was also known as: "It is the process that individuals think and evaluate that allows investors to organize their investment portfolios." (Barberis, Huang, 2001, 1248)

The researchers also defined mental accounting as: "A psychological technique and a model for organizing and evaluating investors' financial decisions and changing their behavior and decisions in spending and investment based on self-assessments that have an impact on the direction of spending and the efficiency of allocating funds based on different and separate mental accounts."

### *Second: Mental accounting components*

There are three interrelated components of mental accountability (haler, 1999):

#### 1- The benefit of transactions

It is concerned with how results are perceived and experienced, and how decisions are made and evaluated later, as the accounting system provides the input needed to conduct past and subsequent cost and benefit analyses, and this component is illustrated by mental accounting involving the decision to purchase, consumer analysis, evaluation and discontinuation by applying the value of the purchased transaction (called transaction benefit).

#### 2- Classification process

It involves assigning activities to specific accounts, classifying sources and uses of funds in real and mental accounting, and collecting expenditures (housing, food, etc.) in the accounting system where expenditure is sometimes limited to implicit or explicit budgets. The funds to be spent are also classified as flows (ordinary income versus unexpected gains) and as stocks (cash in hand, home ownership, pension wealth, etc).

#### 3- Choose in parentheses

It relates to the repeated evaluation of accounts, and a balanced balance sheet can be prepared daily, weekly, annually, etc., and can be narrowly or broadly identified.

### *Third: Mental accounting bias and its impact on investors*

Mental accounting bias may lead to (Thaler, 1999):

- 1- It can cause unwanted results for investors.
- 2- Investors may resort to investing their money in negative, irrational ways.
- 3- Investors can be rewarded for making irrational, irrational investment decisions.

#### ***Fourth: The impact of financial behavior theories on financial and investment decision-making***

##### **1- Probability Theory (Expected Benefit)**

The theory of probability states that investors and others have irrational expectations because they are less willing to gamble with profits than losses (Ngoc, 2014) and that human behavior (investors) when they face risks in particular uncertainty, and the theory of probability focuses on self-decisions that are influenced by the psychological factors of investors. (Kempf; Ruenzi, 2006)

The theory of probability (projected benefit) is the basis for the emergence of the fear of losses, which is based on the fact that investors are more sensitive to losses rather than profits, which is a common behaviour for investors, as well as the tendency of investors to give a greater proportion of the results already achieved than expected results, avoid profit risk and seek risk for losses. (Waweru et al., 2008)

The theory of probability (expected benefit) focuses on investors' rational expectations and is the standard model of rational choice and the descriptive model of financial behavior that dominates decision-making under uncertainty (Filbeck, However, this theory has been criticized for failing to explain why investors are attracted to both insurance and gambling, where investors tend to underestimate the importance of potential outcomes compared to certain outcomes and respond differently to similar situations depending on the context of losses or gains that are offered, yet may lead to a wrong decision affecting the wealth of investors.

##### **2- 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)

##### **3- 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.

##### **4- 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 that 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.

### 5- Herd Factor

The herd factor in financial markets is determined by influencing investors' behaviors to simulate and imitate others when making investment decisions, and practitioners usually carefully consider the existence of the herd factor, given the fact that investors rely more on collective information than private information that can lead to changes in stock prices on value. Therefore, many good investment opportunities can be affected at the moment, and academic researchers pay attention to the herd factor, because its impact on stock price changes can affect risk and return models and this has implications for the views of asset pricing theories, stock valuation and pricing theories. ((Tan et al., 2008).

The herd factor can cause some psychological and mental biases, with investors preferring the herd factor if they believe that the herd factor can help them extract useful and reliable information (Kallinterakis et al., 2010), and the herd factor has clearly influenced financial market activity by investors building their investment decisions on traders' decisions to buy or sell shares (Caparrelli et al., 2004).

There are many factors that encourage the presence of the herd factor in financial markets and affect investor behaviour, for example: high investor confidence, the size of investments, etc. The more confident investors are, the more they rely on their own information in making investment decisions. In this case, investors seem to be less interested in herd worker behaviors, while when investors place a large amount of capital in their investments, they tend to follow the behaviour of others in order to reduce risk, but individual investors' attitude towards the herd factor remains greater than that of large enterprises. (Goodfellow et al., 2009)

Many previous studies indicate that buying and selling decisions for investors are heavily influenced by other decisions, and that the behaviour of the herd factor helps investors to feel alienated from their decisions, as for other decisions regarding stock selection, the size of the shares traded, the length of time to hold inventory, and the volume of inventory trading, investors appear to be less affected by the behaviour of the herd factor (Waweru et al., 2008).

Behavioural factors also influence the investment decisions of investors in financial markets, particularly in stock markets, where individual investors tend to sell high-value shares compared to the original purchase price rather than selling undervalued shares. However, it is difficult to establish this phenomenon on a rational basis. It is not really reasonable to conclude that investors sell winning stocks rationally because they can predict their poor performance. (Barberis and Thaler, 2003: 1103)

### ***Fifth: Mental accountability and its impact on investment decisions***

Investments are intended for activities that involve investing certain resources in certain businesses in order to obtain future returns or profit. Investment is also meant to put some money today in the work of traders and expects to get a profit or return in the future.

In order to make an investment activity in the capital market correctly, the investor needs sufficient knowledge, skills and experience about the business, to analyze the shares to be bought or retained and which shares will be sold, and the investor is supposed to be rational in making the decision to buy the shares. There are many reasons why individuals invest their money, for example: pursuing investment activity to get a better future life in order to reduce the risk of inflation in order to obtain the benefits of basically paying taxes, as investors pursue investment activity in order to earn or increase their wealth. (Santi, et al, 2019)

(Bodie and Marcus, 2006, 12) revealed that there are two important aspects of investment, the expected return, the risk that affects the investment decision and includes the following dimensions:

- 1- How much money will be invested, and will we invest in a small or large part of our money? .
- 2- When will we invest? Do we invest sooner or later? .
- 3- The investment decision contains decisions on the type or type of investments we will make. .
- 4- The investment decision also includes decisions on the source of the funds to be invested at the outset, and when making an investment decision the investor not only uses estimates of the prospects of investment instruments, but is also influenced by psychological factors.

(Nofsinger, 2001: 9) also presented a range of problems that intellectual accounting can cause to investors:

- **First, it** can make an individual think or imagine that his investment operates separate "packages" or accounts.
- **Secondly, it can cause investors to** irrationally distinguish between income and capital increases. Many investors feel the need to maintain capital amounts and prefer to spend interest.
- **Third, it** can cause investors to allocate assets differently, especially when it comes to the company's stock.
- **Fourth, it can cause investors to fail to** resist the impact of "home funds", where risk behaviour escalates as wealth grows.
- **Fifthly, this can cause investors to hesitate to sell investments that were previously making** significant gains but whose price has subsequently declined over time as a result of the emerging market situation, where investors become accustomed or familiar with **The methodology and procedures of the study:**

### **The Methodology of the Study and the Sources of Data Collection**

The researchers used the descriptive analytical approach for the occasion of this approach to the nature of the study and its objectives to know the impact of mental accounting on the decision-making of financial and investment decisions among Palestinian investors, and the sources of data collection were:

- a- Secondary sources: such as books, scientific references, previous studies, periodicals and specialized scientific and professional journals related to the subject of the study, as it contributes to enriching the study scientifically and to see the latest developments in the field of study.
- b- Preliminary sources: Preliminary data were obtained through the questionnaire as a key tool for the study, which was prepared after the researchers reviewed many of the literature of previous



studies and scientific books related to the subject of the study, and was formulated in accordance with the environment of the study in order to reach results that answer the questions of the study, and the statistical package program (SPSS) was used to analyze the data of the study.

### The Study Community and its Appointed:

The study community consists of Palestinian investors and 261 Palestinian businessmen. The questionnaire was distributed among a sample of the study community equal to (180) researches, and (136) was recovered with a response rate (75.5%), of the total questionnaires distributed, and the following table shows the number and characteristics of the study sample:

From the table (1) it is clear that:

- 1- (63.2%) Of the study sample, their bachelor's degree was bachelor's degree, while the percentage of those with a master's degree (25%) and those with a PhD qualification (11.8%), and the above results show that the study sample of bachelor's degree holders is the largest outcome, while the graduate students are approximately (36%). This reflects on the quality of the respondents' responses to the study tool as they are scientifically qualified and aware of the concept of mental accounting and its effects.
- 2- (66.9%) From the sample of the study their scientific specialization accounting, while his specialization in business management came (13.2%), the specialization of financial and banking management was (6.6%), and the rest of the specialties (13.2%). Almost from the sample of the study of those with financial and administrative specialties enable them to answer the study questions accurately, efficiently and professionally, which directly reflects on the results of the study in terms of the quality of its outputs and realism.
- 3- (25%) From the sample of the study their years of service were less than (5) years, while the ratio for the group between (5) and less than (10) years (44.1%), while the ratio was (30.9%) For more than 10 years of service, the results reflect the diversity of the years of experience of the researchers, ensuring that the views of different age levels are recognized with their diverse and accumulated experiences that enable them to form more accurate positive or negative opinions about the subject matter of the study.

**Table(1) Functional and personal characteristics of the study sample**

Statement		Iteration	Percentage%
<b>Scientific qualification</b>	Bachelor	86	63.2
	Master	34	25.0
	Doctor	16	11.8
<b>Scientific specialization</b>	Accounting	91	66.9
	Business management	18	13.2
	Financial and banking management	9	6.6
	Other	18	13.2
<b>Years of experience</b>	Less than 5 years	34	25.0
	5 to under 10 years	60	44.1
	10 and above	42	30.9
<b>Total</b>		<b>136</b>	<b>100.0</b>

Source: Preparing researchers based on resolution data, 2020M.

### The Study Tool

To measure the impact of mental accounting on the decision-making of financial and investment decisions among Palestinian investors, the researchers prepared a questionnaire based on a set of questions that were formed by reading the previous researches and studies that dealt with the subject of the study, which covered the answer of verifying the validity of the study's duties or not.

### The Sincerity and Consistency of the Study Tool

The sincerity and consistency of the study tool has been verified through the following procedures:

- 1- **Since the end of the cold war**, the united states has been able to provide a new and more timely response to the challenges of the current international community.
- 2- **The validity of the scale:** it is represented by measuring the internal consistency of the resolution paragraphs as well as the sincerity and stability of the resolution as in the following table:

**Table(2) Transactions of the honesty of the scale between the paragraphs of the resolution axes and the total grade**

Axes	Number of paragraphs	Stability factor	Factor Honesty Building	Link coefficient	Moral level
There is a contribution to mental accounting in helping investors develop a strategy for financial and investment decision-making.	7	0.846	0.920	0.947**	0.000
There is an impact of mental accounting on the behaviour of investors that leads them to make decisions to buy or sell securities.	7	0.758	0.871	0.819*	0.000
There is an impact of mental accounting on raising the financial culture of investors and making the most appropriate and affordable financial decisions.	7	0.850	0.922	0.951**	0.000
<b>Total grade of all axes</b>	<b>21</b>	<b>0.928</b>	<b>0.963</b>	<b>-</b>	<b>-</b>

Source: Preparing researchers based on resolution data, 2020 M.

The table above shows the following:

- 3- **Internal consistency of resolution paragraphs:** The correlation coefficients between each of the questionnaire selections and the total grade of the same field were calculated, and it was found that all the terms had a correlation coefficient and therefore the paragraphs were true to what was developed to measure it, with the value of the Pearson correlation coefficient ranging from (0.819-0.951).
- 4- **Constructive honesty:** It was tested using the Pearson Correlation Coefficient and found that the constructive honesty of each axis is greater than (0.6), which shows the sincerity of the terms that make up each of these axes and that they have a strong correlation coefficient in the overall degree of the resolution paragraphs, where the values of the correlation coefficients for the fields ranged between (0.871 - 0.922) and therefore the correlation between each area of the questionnaire and the overall degree of statistical function, so the areas are considered honest for what was developed to measure it.
- 5- **Resolution stability:** The researcher verified the stability of the study's questionnaire by calculating the stability factor called the Cronbach Alpha coefficient, where the stability coefficients for each of the resolution axes ranged from (0.758 to 0.850).

### The Scale Used in the Study

The researchers adopted the use of the Penkert Pentameter to determine relative weights, to judge the direction of the answers and the degree of approval for each paragraph and each area of resolution, and weights range from (1) to (5) so that the score (5) of the response (very large) while the response (1) indicates a response score (very low), and therefore the relative weight of each score is according to the following table:

**Table(3) 500-degree lekert scale score**

The degree of approval	Too big.	Big.	Medium	A few.	Very little.
Class	5	4	3	2	1
Arithmetic medium	4.20 - 5	3.40 - 4.19	2.60 - 3.39	1.8 - 2.59	1 - 1.79
Relative weight	More than 84%	68% - 83.9%	52% - 67.9%	36% - 51.9%	Less than 36%

Source: Leckert, 1932.

To interpret the results of the study and judge the level of response, the researchers relied on the order of

mathematical averages at the level of fields and the level of paragraphs in each area, and the researcher determined the degree of approval according to the test adopted for the study.

The One Sample T test has been used to analyze the questionnaire paragraphs, and the paragraph is positive in the sense that sample members agree with its content if the calculated t value is greater than the t-table value of 1.97 or the probability value less than (0.05) and The relative weight is greater than (60%), and the paragraph is considered negative in the sense that sample members do not agree with its content if the calculated t value is smaller than the t-table value of 1.97 (or probability value greater than 0.05 and the relative weight is less than 60%).

## Testing the Study's Hypotheses and Answering Their Questions

To analyse the resolution paragraphs, calculations, standard deviations and relative weight were calculated, as well as one sample T test to analyze the resolution paragraphs and test hypotheses as shown below:

### 1- Analysis of the first hypothesis paragraphs (there is a contribution to mental accounting in helping investors develop a strategy for financial and investment decision-making):

Calculation averages, standard deviations and relative weight, as well as the Test (T) for one sample (One Sample T test) were calculated as in table 4, which shows the opinions of members of the study community in the first hypothesis paragraphs dealing with mental accounting and its role in financial culture and decision-making.

**Table(4) Analysis of the paragraphs of the independent variable mental accounting**

Paragraph	Average arithmetic	Standard deviation	Relative arithmetic average	Value t	Value .sig	Order
Mental accounting helps avoid the risk associated with financial decisions.	4.13	0.593	82.69	22.30	0.000	3
Mental accounting helps to develop a clear strategy for arranging and regulating financial matters with investors.	4.07	0.462	81.45	27.09	0.000	6
Mental accounting affects how investors spend money and how they save it.	3.95	0.644	79.05	17.26	0.000	7
Mental accounting affects how investors save their money, and how they deal with unexpected losses.	4.12	0.935	82.35	13.93	0.000	4
Mental accounting depends on the behavioral and psychological aspects that affect financial decision-making.	4.10	0.872	82.06	14.76	0.000	5
Mental accounting helps investors overcome behavioral errors that can obscure rational thinking and influence investors' financial decisions.	4.14	0.845	82.79	15.73	0.000	2
Mental accounting is based on helping investors assess the degree of risk involved in financial decisions.	4.18	0.893	83.53	15.36	0.000	1
Total	4.10	0.554	81.99	23.15	0.000	-

Source: Preparing researchers based on resolution data, 2020M.

From the previous table can be drawn the following:

- The relative weight of the first hypothesis is "mental accounting" (81.99%) It is larger than the default value of 3, i.e. greater than (60.0%) The probability value (0.00) was less than (0.05), which meant that the responses of the respondents in this area were "significantly positive".
- Paragraph (7) "Mental accounting helps investors to estimate the degree of risk involved in financial decisions" was first in the order of paragraphs in this area, with a relative weight (83.53%) It is larger than (3) i.e. greater than (60.0%), and the probability value is equal to (0.00) and is less than (0.05), which indicates that the opinions in this paragraph were positive according to the researchers, and that the degree of support for this paragraph is "significant".

- The least paragraph was paragraph 3: "Mental accounting affects how investors spend money and how they save it", where the relative weight (79.05%) is relative. It is larger than (3) or greater than (60.0%) The probability value of the paragraph was (0.00) and is less than (0.05), indicating that the views in this paragraph are positive and that the degree of support for this paragraph is "substantial".

We conclude from the above that all the responses of the study sample showed a general trend towards large approval of all paragraphs of the first hypothesis and thus the acceptance of the first hypothesis: "There is a contribution to mental accounting in helping investors develop a strategy for financial and investment decision-making", as shown by the general arithmetic average of 4.10, with a general variation factor of 0.554, and that the value of the test (t) was positive and the value of the moral level (0.0000). There searcher attributes this to the fact that mental accounting contributes to the strengthening of the financial culture of investors as a result of raising their skills and thus efficiency in making financial and investment decisions.

**2- Analysis of the second hypothesis paragraphs (there is an effect of mental accounting on the behavior of investors that leads them to make decisions to buy or sell securities):**

**Table(5) Analysis of mental accounting paragraphs and investors' behavior in making decisions to buy and sell securities**

Paragraph	Average arithmetic	Standard deviation	Relative arithmetic average	Value t	Value .sig	Order
Mental accounting has a significant impact on the financial and investment decisions that result from investor behaviour.	4.05	0.659	81.03	18.61	0.000	6
Understanding investors' behavior helps to accurately understand the predictability of future movements of financial markets.	4.06	0.555	81.18	22.26	0.000	5
Psychological factors affect the behavior of investors when deciding to buy or sell securities.	4.18	0.732	83.68	18.85	0.000	1
Mental accounting influences the psychological decision-making of investors' behavior for a number of investment opportunity options that have different risks.	4.12	0.597	82.35	21.83	0.000	3
There is an important role for mental accounting in the financial decision-making process related to the behavioural finance of investors.	4.17	0.639	83.38	21.34	0.000	2
Mental accounting is one of the most important influences and motives that affect the behavior of investors and encourage the purchase and sale of shares.	4.12	0.597	82.35	21.83	0.000	3
Investors' decisions are influenced by behavioral factors that depend on their emotions and thinking that play a key role in influencing the price and trends of securities.	3.81	1.007	76.18	9.36	0.000	7
<b>Total</b>	<b>4.07</b>	<b>0.462</b>	<b>81.45</b>	<b>27.09</b>	<b>0.000</b>	<b>-</b>

Source: Preparing researchers based on resolution data, 2020M.

From the previous table can be drawn the following:

- The relative weight of the second hypothesis "investor behavior" (81.45%) It is larger than the default value of 3, i.e. greater than (60.0%) The probability value (0.00) was less than (0.05), which meant that the responses of the respondents in this area were largely positive.
- Paragraph (3) "Psychological factors affect the behavior of investors when deciding to buy or sell securities" ranked first in the order of paragraphs in this area, where the relative weight (83.68%) was the highest in the ranking. It is larger than (3) i.e. greater than (60.0%), and the probability value is equal to (0.00) and is less than (0.05), which indicates that the opinions in this paragraph were positive according to the researchers, and that the degree of support for this paragraph is "significant".
- The few paragraphs were paragraph 7: "Investors' decisions are influenced by behavioural factors that depend on their emotions and thinking that play a key role in influencing the price and trends

of securities", with relative weight (76.18%) It is larger than (3) or greater than (60.0%) The probability value of the paragraph was (0.00) and is less than (0.05), indicating that the views in this paragraph are positive and that the degree of support for this paragraph is "substantial".

We conclude from the above that all the responses of the study sample showed a general trend towards large approval of all paragraphs of the second hypothesis and thus the acceptance of the second hypothesis: "There is an effect of mental accounting on the behaviour of **investors that leads them to make decisions to buy or sell securities**", shown by the general arithmetic average of 4.07, with a general variation factor of 0.462, and that the value of the test (t) was positive and the value of the moral level (sig.0000). There searcher attributes this to the fact that investors practice mental accounting (behavioral finance) in an innate way because they are influenced by behavioral psychology, which is reflected in a great way on the financial and investment decisions they make, in addition to being experienced in the field of investment and financial decision-making, which gives them the opportunity to understand financial movements in light of understanding the behavior of investors.

### 3- Analysis of the paragraphs of the third hypothesis: (There is an effect of mental accounting on raising the financial culture of investors and making the most appropriate and affordable financial decisions):

**Table(6) Analysis of mental accounting clauses, raising investors' financial culture and making the most appropriate and affordable financial decisions**

Paragraph	Average arithmetic	Standard deviation	Relative arithmetic average	Value t	Value .sig	Order
Mental accounting affects the raising of investors' financial culture by searching for similar information that helps make rational decisions.	3.72	1.159	74.41	7.25	0.000	7
Mental accounting helps investors make the most appropriate financial decisions about their investments.	3.92	0.903	78.38	11.87	0.000	5
Mental accounting provides cultural and psychological factors that have a significant impact on investor decisions.	4.25	0.664	85.00	21.96	0.000	1
Investors usually rely on mental accounting to determine the expected returns and risks of investments to make good decisions.	3.93	1.023	78.53	10.56	0.000	3
Mental accounting helps increase investors' experience and knowledge in the decision-making process for available investments and trade-offs.	4.06	0.823	81.18	15.00	0.000	2
Mental accounting affects investors' behavior and awareness of the information they have in portfolio management.	3.87	0.787	77.35	12.86	0.000	6
Mental accounting is based on the cognitive factors and feelings of investors and affects their culture of investment behavior.	3.93	0.757	78.53	14.28	0.000	3
<b>Total</b>	<b>3.95</b>	<b>0.644</b>	<b>79.05</b>	<b>17.26</b>	<b>0.000</b>	<b>-</b>

Source: Preparing researchers based on resolution data, 2020 M.

From the previous table can be drawn the following:

- The relative weight of the third hypothesis is "investors' financial culture" (79.05%) It is larger than the default value of 3, i.e. greater than (60.0%) The probability value (0.00) was less than (0.05), which meant that the responses of the respondents in this area were largely positive.
- Paragraph (3) "Mental accounting provides cultural and psychological factors that have a significant impact on investor decisions" ranked first in the order of paragraphs in this area, with a relative weight (85.00%) It is larger than (3) i.e. greater than (60.0%), and the probability value is equal to (0.00) and is less than (0.05), which indicates that the opinions in this paragraph were positive according to the researchers, and that the degree of support for this paragraph is "very large".
- The least paragraph was paragraph 1: "Mental accounting affects the raising of investors' financial

culture by searching for similar information that helps to make rational decisions", with a relative weight (74.41%) It is larger than (3) or greater than (60.0%) The probability value of the paragraph was (0.00) and is less than (0.05), indicating that the views in this paragraph are positive and that the degree of support for this paragraph is "substantial".

We conclude from the above that all the responses of the study sample showed a general trend towards large approval of all paragraphs of the third hypothesis, and therefore acceptance of the third hypothesis: **"There is an effect of mental accounting on raising the financial culture of investors and making the most appropriate and affordable financial decisions"**, which is shown through the general arithmetic average of 3.95, with a general variation factor of 0.644, and that the value of the test (t) was positive and the value of the moral level (sig 0.000). There searcher attributes this to the fact that mental accounting works to increase the experience and knowledge of investors and thus increase the ability to determine the returns and risks of making financial and investment decisions based on the study of similar events and realities that contribute to rational decision-making and thus raise the financial culture of investors.

### Analysis of Regression of Study Variables

To measure the impact of mental accounting (independent variable) on investors' behaviour in making securities buying or selling decisions, promoting investors' financial culture and making the most appropriate and affordable financial decisions. (Child variables) as shown below:

- 1- Mental accounting has a statistically significant impact at the level of significance ( $0.05 \geq \alpha$ ) on the behaviour of investors in making decisions to buy or sell securities.
- 2- Mental accounting has a statistically significant impact at the level of significance ( $0.05 \geq \alpha$ ) in raising the financial culture of Palestinian investors in making financial and investment decisions.

To test these hypotheses, a simple linear regression analysis was used, and the regression model showed that the level of investor behavior and financial culture, which represents the dependent variables, is fundamentally and statistically significantly influenced by mental accounting, as shown in table 7:

**Table(7) Analysis of the simple decline of the variable following investor behavior and the financial culture of investors**

Independent variables	Regression coefficients	Standard error	Standard regression coefficients	value t	Probability value	Indication level at (0.05)	
			Beta		itself.		
<b>Analysis of the simple slope of the variable "Investors' behavior in taking the purchase or selling of securities"</b>	Hard	0.1836		8.150	0.000		
	Mental accounting	0.546	0.654	10.017	0.000	Slab	
	ANOVA Contrast Analysis						
	F test value	100.333		R-2	0.428	Probability value	0.000
<b>Analysis of the simple regression of the variable "raising the financial culture of investors and making the most appropriate and affordable financial decisions".</b>	Hard	0.331		1.819	0.071		
	Mental accounting	1.045	0.899	23.738	0.000	Slab	
	ANOVA Contrast Analysis						
	F test value	563.484		R-2	0.808	Probability value	0.000

Source: Preparing researchers based on resolution data, 2020 M.

From the previous table can be drawn the following:

- 1- The mental accounting of the continuing people has a statistically significant impact on the level of significance ( $\alpha \leq 0.05$ ) in the behavior of investors as well as the financial culture in making financial and investment decisions.
- 2- **The equation of the impact of** mental accounting on investors' behaviour can be formulated as follows: **Investor behavior** = 0.18362 + 0.546.
- 3- **The equation of the impact of** mental accounting on the financial culture of investors can be formulated as follows: **Investor financial culture** = 0.331 + 1.045

The researchers attribute this to the fact that there is a direct impact of mental accounting on the behavior of investors and raising the financial culture for them as a result of the skills and administrative and psychological capabilities provided by mental accounting that control stake in financial and investment decisions, hence it is clear that there is a direct and statistically significant relationship between mental accounting on the field of financial investors' behavior and culture.

## The Results and Recommendations of the Study:

### *Results*

- 1- Mental accounting contributes to enhancing risk assessment of financial and investment decisions among Palestinian investors and thus avoiding the risks associated with the decisions made.
- 2- Mental accounting contributes to overcoming behavioral errors that affect rational thinking, which works on the quality of financial and investment decisions.
- 3- Psychological and behavioral factors influence decisions related to the behavioral financing of investors related to the sale and purchase of securities.
- 4- Mental accounting works in the psychological decision-making of investors, thus affecting the culture of investment behavior for them through cognitive factors and feelings.
- 5- Mental accounting helps increase experience, knowledge and trade-offs in decision-making on financial and investment decisions.
- 6- Palestinian investors rely on mental accounting to estimate the returns and risks of investment decisions.

### *Recommendations*

- 1- The Chambers of Commerce and the Ministry of National Economy promote knowledge of mental accounting and raise the financial culture of Palestinian investors because of its importance in the behavior of investors in making financial and investment decisions.
- 2- Palestinian universities, professional associations and civil society organizations promote a culture of mental accountability, behavioral finance and the qualification of interested businessmen and students of financial and business management colleges.
- 3- Simulation models to raise investors' financial culture in light of the uses of mental accounting in financial and investment decision-making in order to increase the skills and potential of investors in managing the information available to them in portfolio management.

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