

THE IMPACT OF MENTAL ACCOUNTING ON FINANCIAL MANAGEMENT WITH FINANCIAL LITERACY AS A MODERATOR: A STUDY ON MICROTRANSACTION BUYERS IN ONLINE GAMES

Erdana Dwiyatna Fauzilana ¹⁾; Agus Maulana ²⁾

1) erdanafauzilana@upnvj.ac.id, Universitas Pembangunan Nasional Veteran Jakarta

2) agus.maulana@upnvj.ac.id, Universitas Pembangunan Nasional Veteran Jakarta

Abstract

This study aims to analyze the influence of accounting mentality on financial management, with financial literacy as a moderating variable, on microtransaction buyers in online games. This study is based on the phenomenon of increasing microtransactions in online games that can affect individual financial management behavior. With an explanatory quantitative approach, data were collected through questionnaires to 100 respondents aged 18–35 years who had made microtransactions. The analysis was carried out using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) method to test the relationship between variables. The results showed that accounting mentality had a significant influence on financial management. However, financial literacy was not proven to strengthen the influence of accounting mentality on financial management. This study provides insight that although accounting mentality helps individuals manage their finances, increasing financial literacy alone does not always have an impact on the effectiveness of the relationship, especially in the context of microtransactions.

Keywords: Financial Management; Financial Literacy; Mental Accounting; Microtransactions; Online Games.

INTRODUCTION

Over the past few years, the gaming industry has experienced rapid growth, both in terms of the number of players and revenue. There are approximately 3.3 billion people from all over the world who play games, and the Asia-Pacific region has a total of 53% of players (Rahayu, 2023). The gaming industry in Indonesia is very promising because Indonesia is the country with the fourth largest population in the world. The projected revenue from the video game market in Indonesia in 2023 is USD1,117 million with a player base of 58.8 million, with the largest segment coming from games online with a market value reaching USD343 million (Rahayu, 2023).

One of the main business models supporting this growth is microtransactions. This is the purchase of virtual goods in games using real money with a small nominal value but is done repeatedly (Robbani et al., 2023). These microtransactions include items such as character cosmetics, weapons, ability upgrades, and access to exclusive content. This business model has become a significant source of revenue for many game companies, given the increasing number of players and the high frequency of purchases made by players.

Microtransaction market in games online has experienced rapid growth in recent years. The growth is estimated at USD73.27 billion in 2023 to USD80.88 billion dollars in 2024 (The Business Research Company, 2025). This growth is related to the growth of the gaming industry, digitalization of entertainment, free-to-play models, virtual items and cosmetics, and the proliferation of mobile gaming.

In meeting human needs, money is an important factor. In its management, money must be managed well. Financial management is the activity of individuals or groups to regulate finances in order to achieve financial goals (Melia & Yantiana, 2023). Money management refers to the current economic capacity while working which is managed for future financial security (Rahmadani, 2017). Personal financial management is one important aspect in maintaining individual well-being. Good management involves planning, organizing, and monitoring expenses so that they do not exceed the income earned. It also includes a basic



budget, savings, investments, and entertainment. However, in practice, many individuals have difficulty managing their finances effectively, especially when faced with the temptations of consumption offered by business models such as microtransactions.

In game online, spending on microtransactions is often considered a “small expense” that does not have a significant impact on the overall budget. Although each purchase in a microtransaction seems small, the accumulation of these purchases can reach a significant amount and affect an individual's financial condition. This phenomenon is interesting to study further, especially in the context of how players manage these expenses. One relevant approach in understanding this behavior is the theory of mental accounting.

Mental accounting is a set of steps to code, categorize, and analyze an individual or family's finances (Ardimansyah et al., 2023). Mental accounting describes how individuals categorize their money into different items (Melia & Yantiana, 2023). For example, a person uses separate funds allocated for daily needs, savings, investments, and entertainment. In the context of gaming online, players may separate the money they spend on microtransactions into a different line item from other expenses, which can impact how they manage their overall finances.

In the case of microtransactions, these expenditures are treated as part of a separate “entertainment budget” by many separate gamers, so the cumulative impact of these purchases tends to be overlooked in terms of their overall financial well-being. Players may not realize how much spending on microtransactions is putting a strain on their financial well-being.

There is a tragic case involving a University of Indonesia student who allegedly killed his junior because he was in debt from an online loan (pinjol). The perpetrator failed to play crypto stocks until he lost more than 80 million rupiah and was trapped in online loan debt (pinjol) (Ratnawati, 2024). Mental accounting often involves excessive optimism (overconfidence) in estimating the ability to repay debt. The perpetrator may underestimate the risk of default or feel that he will be able to manage the pinjol payments better than he actually is. When reality is the opposite, frustration and stress can increase.

Mental application accounting will facilitate financial management if done in a disciplined and rational manner (Ardimansyah et al., 2023). A person must be wise in making decisions in managing finances. The act of spending without having any use and benefits or what is commonly called waste can reduce consumer behavior that causes unorganized finances (Rosalina et al., 2021).

Mental accounting can influence a variety of financial decisions, including in the context of purchasing microtransactions in games. online. One of the main impacts of mental accounting is the emergence of irrational spending behavior. For example, someone may be more willing to spend money on microtransactions such as items and cosmetics/ skins in a game because they are considered insignificant “small money”, rather than buying another game that costs the same as the total purchase of microtransactions.

In addition, mental accounting can also make individuals more susceptible to impulse purchases, because they feel that the expenditure will not have a significant impact on their overall financial condition. The long-term impact of this behavior can include difficulty in meeting other financial needs, reduced savings, and even debt accumulation. For many players, microtransaction purchases become a habit that is difficult to control, especially when they have little awareness of how these expenses affect their finances.

Yuniarsih et al. (2024) found that mental accounting on financial management has a negative and insignificant influence. From his research, student financial management is bad because students are not yet able to manage finances properly. (Rohmawati & Widjatmiko, 2023) in the study, it was found that the application of mental accounting for financial management of generation Z is less precise or affected by mental bias accounting. Financial

records that are not carried out and inaccurate decision making by generation Z so that the financial management planning that has been made does not run properly.

However, Cristanti et al. (2021) concluded in his research that mental accounting has an impact on financial management and has been proven to be accepted. This is because the financial items needed have been classified by students so that consumer behavior can be reduced and financial management can be controlled. The study Zakka (2024) also revealed a significant positive impact between mental accounting in financial management. The results of this study revealed that the capability of mental High accounting in individuals in allocating funds, financial management will be better.

Previous research on mental accounting largely focuses on financial management in general. However, research that specifically explores whether mental accounting affects spending on in-game microtransactions online is still limited. With this research gap, there is hope that this research will contribute to the existing literature, especially on the focus of microtransactions in games. online and how mental accounting affects financial management in this context.

Everyone often faces various financial choices such as investment, savings, debt, and daily shopping. Financial literacy provides a foundation for understanding basic financial concepts such as risk management, budget planning, and investment that contribute to financial well-being.

The level of financial literacy of the Indonesian people is still relatively low. In 2019, Indonesia's financial literacy index reached 38.03% based on a survey by the Financial Services Authority (OJK, 2019). This proves that most people are limited in understanding basic financial concepts. Digital financial products such as online banking and e-commerce services that are increasingly easy to access make proper financial literacy skills very meaningful.

Financial literacy also has a significant function in more specific financial management, such as microtransactions in online games. Many gamers are impulsive in purchasing due to a lack of insight into the financial consequences of repeated small expenses. Financial literacy plays a role in making wiser purchasing decisions, helping individuals avoid consumptive behavior that is detrimental to personal finances.

Research on mental accounting and money management has been conducted in various contexts but is still limited in exploring its impact on microtransaction purchases in online games. Most previous studies, such as those by Marteniawati (2013) and Cristanti et al. (2021), have examined the influence of mental accounting on money management in college students, but have not specifically addressed the segment of gamers who engage in microtransactions. In such contexts, players may separate their budgets for microtransactions differently from their other spending budgets, which may obscure the financial impact of cumulative in- game spending.

Furthermore, previous studies often do not include financial literacy as a moderating variable that influences the relationship between mental accounting and financial management. Such studies (Zakka, 2024) do show a positive effect of mental accounting on financial management, but do not consider how financial literacy can strengthen or weaken this effect, especially in gamers who often engage in impulsive transactions. This is an important gap because financial literacy can influence how a person prepares and allocates a budget, including on microtransaction purchases.

LITERATURE REVIEW

Theory of Planned Behavior

Theory of planned behavior (TPB) is an extension of the theory of reasoned action (TRA) which was first formulated in 1985 by Icek Ajzen and Martin Fisgbein. TPB is one of



many theories used in social psychology to explain and predict human behavior in various conditions. TPB offers an adequate conceptual framework to understand how the intention to perform a behavior is driven by three fundamental elements: attitude toward the behavior, subjective norms, and perceived behavioral control. These three components play an important role in shaping a person's intention, which then predicts actual behavior.

Attitudes toward behavior reflect an individual's evaluation of a particular behavior, whether they view it as positive or negative. In the context of financial behavior, such as in-game microtransaction purchases online, this attitude can be influenced by how individuals view the benefits and consequences of the expenditure. Research shows that a positive attitude toward making a purchase decision will increase the level of intention to make a purchase (Ajzen, 1991). This attitude is often influenced by past experiences, knowledge, and beliefs about the outcomes of behavior. For example, if players believe that microtransaction purchases significantly enhance their gaming experience, they are more likely to have a positive attitude and stronger intention to make the purchase.

Subjective norms in TPB state that in social pressure experienced by individuals from people around them, such as friends, family, or community, which influences the consideration to do or not do a behavior. In the world of games online, these norms can be very influential. For example, if a gaming community in which an individual is a member tends to support and consider microtransaction purchases acceptable, the individual may feel compelled to follow these norms even if this conflicts with his or her personal financial plans. Previous research has shown that social norms can significantly influence purchasing behavior, especially in contexts where social participation and status within the group are important factors (Fishbein & Ajzen, 2011).

Perceived Control behavior or perceived behavioral control is a person's belief in their ability to carry out or control a particular behavior. This includes perceptions of the difficulty or ease of carrying out the behavior. In the context of financial management and microtransaction purchases, perceived behavioral control reflects how much players feel they are able to control their in-game spending. If they feel that spending on microtransactions is within their control and will not harm their overall financial condition, they are more likely to intend to continue making purchases. Conversely, if they find it difficult to control this urge, they may try to refrain despite social reinforcement or positive attitudes toward the purchase (Ajzen, 1991).

Intention is the primary predictor of actual behavior according to the TPB. Intention is formed from a combination of attitudes, subjective norms, and perceived behavioral control. In this study, the intention of microtransaction purchasing behavior was influenced by how players evaluated the purchase, the social pressure they felt, and their perception of their ability to control spending. Previous research has shown that the stronger a person's intention, the higher the probability of actually performing the action (Ajzen, 1991). In the context of microtransaction purchases, this intention can translate into repeat purchasing behavior, which in turn can affect players' personal financial management.

Theory of Planned Behavior (TPB) has been used in many studies to understand consumer behavior, including financial management and consumer behavior in games. online. There are case studies that show that the TPB is an effective framework for predicting purchasing behavior in a digital context, where positive attitudes toward technology, social norms in online communities, and perceived control over technology are key factors. In microtransaction research (Pavlou & Fygenon, 2006). TPB can help explain why certain gamers are more prone to making uncontrolled purchases, and how these factors can be modified to improve their financial management.

Financial Management

Management or administration is an effective and efficient use of resources in an activity. Financial management refers to an individual's actions in managing finances to support survival and achieve the goals desired or achieved by the individual himself (Rosalina et al., 2021). The activities of planning, analyzing, and controlling finances are the meaning of financial management or financial management. In living his life, a person always has a way of considering the income he has in a certain period of time to meet his living needs and activities is a component of financial management

Financial management has a function, namely the activity of seeking funds (obtaining funds) whose purpose is to meet daily needs. In addition, another function is the activity of managing funds (allocation of funds) which aims to manage the use of funds so that business activities can be maximized (Supriadi et al., 2023). In addition, financial management functions to prepare for financial anxiety in the future.

Based on Putra et al. (2023), financial management can be broken down into several stages of the management process, namely (1) Preparing financial goals, (2) Preparing income plans, (3) Preparing expenditure plans, (4) Conducting reviews, (5) Benefits of Financial Management. Based on Prasetyo (2024), management has benefits including meeting basic needs and long-term needs, preparing for sudden needs, avoiding excessive debt, achieving financial goals, improving quality of life.

Mental Accounting

Mental accounting deals with the process of assessing, organizing, and categorizing personal finance into separate accounts. Mental Accounting is the activity of grouping financial decisions into different accounts and each has its own rules or norms for spending the money (Thaler, 1985). This principle includes several elements such as budgeting mentality, allocation of expenses, and investment behavior.

One example of mental accounting is when someone allocates a monthly salary for daily needs while the year-end bonus is for luxury expenses such as vacations. Although theoretically there is no difference between salary and bonus, mentally there is a difference in how to manage it.

Microtransactions in Online Games

Games Online is a type of game that connects various players from various corners of the world to play together via the internet network or internet connection (Kustiawan & Utomo, 2019). Games Online is a form of electronic game via devices such as computers, laptops, smartphones, game consoles and other devices and connected to the internet network and played by various players at the same time (Firdaus et al., 2018).

Games online in Indonesia, its development began in early 2000 when internet access also began to develop in big cities. At first, games online games are becoming popular among teenagers and young adults such as games Ragnarok Online and GunBound and at that time teenagers were just starting to adopt this new technology as a form of entertainment and social interaction. Over time, the significant growth of internet users in Indonesia due to the improvement of telecommunications infrastructure has encouraged the gaming industry online in Indonesia is expanding throughout the country.

Demographic factors are also one of the drivers of game growth. online in Indonesia. Young people who are open to new technologies are the majority of society. Based on the report of the Indonesian Internet Service Providers Association (APJII) in 2024, Indonesia's internet network penetration reached 79.5%, which directly supports the growth of the gaming industry online (Asosiasi Penyelenggara Jasa Internet Indonesia, 2025).

Microtransactions are financial transactions that are done online by purchasing virtual goods in games with real money (Syahmaulana & Indriani, 2022). Microtransactions are more



widely applied in games. free- to -play base The game is free but there are additional payments in it to provide higher quality service and the playing experience that players get when they have made a payment (Putra et al., 2023).

According to Beachside (2021), there are several types of microtransactions, namely (1) In-Game Currencies, or in -game currency, is one of the most common microtransactions. This type involves a fake in-game currency that players can use to redeem various rewards. Players “buy” the in-game currency with real money. The game uses real money and exchanges it for in-game currency to make the transaction seem better, which leads to bigger transactions. (2) Random Chance Purchases, namely players will be given grab random “bags” containing game prizes that can be worth more than the amount paid. Real money is used for the chance to open the bag. (3) In - Game Items, even though the game is free-to-play, in -game items may be available for purchase. These items are often far superior to what players can get without purchasing them. Of course, this provides an advantage for players who buy the item. One way to buy it is to use real money. (4) Expiration. Many games have game limits, items that can expire, or objects that can only be used a certain number of times before they are refreshed. Some games offer players the opportunity to pay to make the item reusable and also to refresh the object so that it can be used immediately.

Financial Literacy

Financial literacy refers to the right financial decisions due to individual skills and knowledge. This includes understanding of the individual. Financial literacy is defined as knowledge that is used competently and in real life is applied to achieve a better and more prosperous economy (Huston, 2010). There is research that low financial literacy is related to poor financial management, including in terms of savings and spending due to suboptimal decisions (Lusardi & Mitchell, 2011). Financial literacy has several main factors, including (1) Financial Knowledge, (2) Money Management, (3) Long-term Financial Planning, (4) Risk Management, (5) Investment Decision-Making.

The Influence of Mental Accounting on Financial Management

Theory of planned behavior (TPB) provides an explanation that actual behavior can be predicted from several things that form a person's intention, namely attitudes towards behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Mental accounting can influence how money is allocated by individuals for various desires and needs. TPB describes how attitudes, social norms, and perceived behavioral control have an influence on decisions related to financial management that are carried out through mental accounting. In - game microtransaction purchases online, someone who has a positive attitude towards mental health accounting, receiving social pressure that provides positive support for financial management, and feeling in control of spending, are more likely to have a positive mental attitude. Accounting is used effectively to manage finances.

The results of the research Marteniawati (2013), Cristanti et al. (2021) and Insani et al. (2018) prove that mental accounting has a positive influence on the financial management of the students studied. The study conducted by Silaya et al. (2021) also Ardimansyah et al. (2023) shows the influence of mental accounting on the financial management of teachers in high schools in Sirimau District, Ambon. In a study by Zakka (2024) concluded that there is a significant positive impact of mental accounting on the financial management of the millennial generation in his research.

Nuha et al. (2024) in his study concluded that there is an influence of mental accounting on financial management for the millennial women studied. Melia & Yantiana (2023) in his research found the impact of mental accounting on the financial management of the geprek generation. There is a mental accounting on financial management of individual gen Z in a study conducted by Rohmawati & Widjatmiko (2023). Mental accounting on financial behavior

has an influence on generation Z whose research was conducted by Kusnandar et al. (2022). Thus, based on the explanation presented, the hypothesis proposed in this study is:

H1: Mental accounting has a positive effect on financial management.

The Role of Financial Literacy in Strengthening the Influence of Mental Accounting on Financial Management

Financial literacy can influence attitudes, subjective norms, and perceived behavioral control which are elements of the theory of planned behavior (TBP). Financial literacy increases the level of understanding of financial concepts, thereby creating a positive attitude towards financial management. Social norms around can also influence an individual's financial literacy. When people around an individual encourage financial behavior and prioritize financial literacy, there will be a drive to improve financial skills and understanding. In addition, the higher an individual's financial literacy, the greater the sense of confidence in making financial decisions which is the ability to control the financial situation.

There is research that concludes that there is an impact of financial literacy on financial behavior (Kusnandar et al., 2022). In the study (Zakka, 2024) no significant influence was found between financial literacy towards financial management of the millennial generation of Surabaya. The researcher proposed a hypothesis based on the description above, namely:

H2: Financial literacy strengthens the influence of mental accounting on financial management.

METHODS

This study uses a quantitative approach with an explanatory research design to analyze the effect of mental accounting on financial management and the moderating variable used is financial literacy. Data were taken from microtransaction buyers in online games. Explanatory research is useful for explaining the relationship between independent variables (mental accounting) and dependent variables (financial management) through hypothesis testing to understand how financial literacy can strengthen or weaken the relationship between mental accounting and management.

Quantitative methods are used in this study because quantitative methods aim to find answers that are desired with scientific and systematic methods using statistical data analysis. To test the hypothesis, SEM-PLS in this study is used because SEM-PLS testing is more suitable than SPSS which only performs ordinary regression. SEM-PLS aims to estimate and expand theories, this is in contrast to covariance-based SEM which focuses more on testing and confirming existing theories (Sarwono, 2012). SEM-PLS is useful for estimating the main variables or endogenous latent variables identified when the research is exploratory research or development of existing theories. SmartPLS4 software and Microsoft Excel are used to process data in research testing.

Researchers use primary data obtained directly in the study. Primary data is taken directly from the sample group. Primary data is obtained from the results of questionnaires compiled by researchers. In this study, primary data was obtained from questionnaires filled out by respondents. Data from this study were collected through questionnaires, which are a technique for collecting data from prepared statement answers. Data were obtained from online questionnaires shared on social media and online gamer communities. The use of online survey platforms such as Google Forms was chosen to facilitate the distribution of questionnaires and collect data in a relatively short time.

Operationalization of Variables

The dependent variable or bound variable of this study is financial management. Financial management is an individual's ability to plan, control, and allocate financial resources effectively so that current and future needs are met. Measurement of financial management



variables is obtained by conducting a questionnaire with a Likert scale and range score 1 – 5 starting from Strongly Disagree (STS), Disagree (TS), Neutral (N), Agree (S), Strongly Agree (SS). The indicators and statements in this research questionnaire adopt the questionnaire from the research (Natan & Mahastanti, 2022).

Mental accounting is an independent variable (X) or independent variable in this research. Mental accounting is a cognitive process in which individuals divide and sort funds into different mental categories, namely entertainment funds, emergency funds, or savings.

Table 1: Measurement of Financial Management Variables

No.	Indicator	Statement
1.	Financial management	I separate accounts for daily needs and for savings. I set aside some money for unexpected expenses. I pay my electricity and water bills on time. I pay my wifi bill on time I manage expenses so that they do not exceed income Before I decide to buy a product, I always do a price survey. I make a good spending budget

Source : Natan & Mahastanti (2022)

For the mental accounting variable, measurements are made using a Likert scale with a score range from 1 to 5. The Likert scale measures statements in this questionnaire starting from Strongly Disagree (STS), Disagree (TS), Neutral (N), Agree (S), Strongly Agree (SS). There are a number of statements and indicators that are useful for measuring mental accounting variables according to Mahapatra & Mishra (2020) the following:

Table 2: Measurement of Mental Accounting Variables

No.	Indicator	Statement
1.	Current Assets	I tend to keep my money in term deposits to get guaranteed returns on a regular basis. All incentives received from my office will be saved directly I believe that the money saved has the benefit of getting more money.
2.	Current Income	I monitor my savings regularly to know my current asset position. New expenses for purchases or entertainment only occur when there is a salary increase or other income. If there is no increase in income, I may not choose to incur new expenses.
3.	Future Income	I set aside part of my salary for investment for future income. I don't spend the money saved for future investments. I don't like spending the money I've saved for my retirement. I always set aside some money from my salary to meet my future needs.
4.	Mental Budgeting	I usually make planned expenses for personal and family needs. I always keep track of how much money I spend on things. I have a good idea of how much I spend on monthly bills, savings, and other expenses. I plan in advance how much money I will spend each month. I know how much I will spend on different expense categories each month.

Source : Mahapatra & Mishra (2020)

The moderating variable in this study is financial literacy. Financial literacy is an individual's knowledge and understanding of basic financial concepts that are useful for making



efficient and effective financial decisions. The financial literacy variable is measured based on an understanding of budget management, investment, and debt control. Data were collected using a questionnaire and each questionnaire item was measured on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). A number of indicators and statements from the study Natan & Mahastanti (2022a) were adopted into this study to measure the financial literacy variable.

Table 3: Measurement of Financial Literacy Variables

No.	Indicator	Statement
1.	Basic knowledge of personal finance	College is part of investment
		Consumption levels are influenced by income
		Personal financial planning is very useful
		The decrease in assets is due to the expenditure of mandatory payments
2.	Knowledge about savings and investment	A safe way to save money is to save it in a bank.
		The way to make profits in the future is by investing early.
		If you want to have a share of ownership in company B, you have to buy shares in company B.
3.	Knowledge of financial management	Planning or thinking about finances is an important way
		Preparing money for unexpected needs is important.
		There needs to be consideration regarding the amount of expenditure incurred
		In determining a shopping budget, the most important thing is needs, not wants.

Source : Natan & Mahastanti (2022a)

Population and Sample

Population is a description of a large and broad amount of data and is a collection of possible people, objects, and other things that are the objects of a study (Purwanza et al., 2022). The population of this research is all online game players in Indonesia who have made microtransactions in the game.

A sample is a part of a population selected by researchers based on certain criteria such as the problems faced, the objectives to be achieved, methods, hypotheses, and instruments of a study (Purwanza et al., 2022). This study uses a purposive sampling method to determine samples with certain criteria such as online game players aged 18-35 years, have made microtransactions in online games. The lemeshow formula is used to determine the number of samples with an unknown population so that it uses a formula like the one below:

$$n = \frac{z^2 \times P(1-P)}{d^2}$$

Information :

n = number of samples

z = z score at 95% confidence = 1.96

P = maximum estimate

d = error rate

According to Putra et al. (2023), the formula uses sample determination with a maximum estimate of 50% with an error rate of 10%.

$$n = \frac{196^2 \times 0,5(1 - 0,5)}{0.1^2}$$

$$n = \frac{3,8416 \times 0,5(1 - 0,5)}{0,01}$$

$$n = 96,04 \sim 97$$



The calculation above yielded a minimum number of respondents of 97 people. Therefore, the researcher determined a minimum sample of 100 respondents.

RESULTS AND DISCUSSION

Data Description and Respondent Demographics

The object of this research is focused on online game microtransaction buyers in Indonesia with an age range of 18-35 years. Microtransactions are defined as purchases of virtual goods in games using real money, such as cosmetic items, weapons, or access to premium features. This phenomenon is of concern because of its potential impact on individual financial management, especially in age groups that actively use technology and online games.

Data were obtained through the distribution of questionnaires using Google Form media which makes it easier and increases the effectiveness of data acquisition. The questionnaire was distributed in the period from November 17, 2024, to December 8, 2024. The target respondents were 100 respondents. With this proportion, the author managed to obtain data from 100 respondents. Therefore, the success rate is 100%.

Online game microtransaction buyers in Indonesia are respondents in this study. Various criteria are owned by each respondent such as gender, age, and having made microtransaction purchases in online games. The criteria are set with the aim of making it easier for researchers to interpret the research data received in order to make appropriate conclusions. Furthermore, the respondent criteria can be seen from gender, which is divided into two groups, namely male and female. The following is the distribution of respondents based on these criteria:

Table 4: Respondent Demographics by Gender

Gender	Amount	Percentage
Man	99	99%
Woman	1	1%
Total	100	100%

Source: Processed data (2024)

From a total of 100 respondents, it can be seen that men are the majority of the research respondents. This is because the majority of men like to play online games compared to women. The respondents of this study were also grouped into age criteria. The division based on age is divided into four age groups, namely 18-23, 24-29, and 30-35 years. The following is the distribution of respondents by age:

Table 5: Respondent Demographics by Age

Age	Amount	Percentage
18-23	55	55%
24-29	42	42%
30-35	3	3%
Total	100	100%

Source: Processed data (2024)

The results of data processing show that the majority of respondents are in the age range of 18-23 years, which is 55 respondents or 55% of the total respondents. The age range of 24-29 years is in second place with 42 respondents or 42%. Meanwhile, the age group of 30-35 years has the fewest number of respondents, which is 3 respondents or 3% of the total respondents. This distribution shows that this study is dominated by respondents who are in the young age group, especially those aged 18 to 23 years, who are most likely students or individuals who have just entered the workforce.

The description of the variable frequency also contains the average value (mean) of the respondent's response. Where the average value and total will be based on the score value of

the Likert scale as follows:

Score 1 = Strongly Disagree (STS)

Score 2 = Disagree (TS)

Score 3 = Neutral (N)

Score 4 = Agree (S)

Score 5 = Strongly Agree (SS)

Frequency distribution for financial management variables contains 7 positive statements. Furthermore, the frequency distribution for financial management variables is as follows

Table 6: Frequency Distribution of Financial Management Variables

No.	Question	STS	TS	N	S	SS	Amount	Mean
1.	I separate accounts for daily needs and for savings.	6	12	21	21	40	377	3.77
2.	I set aside some money for unexpected expenses.	1	3	11	51	34	414	4.14
3.	I pay my electricity and water bills on time.	1	0	15	46	38	420	4.2
4.	I pay my wifi bill on time	1	0	21	43	35	411	4.11
5.	I manage expenses so that they do not exceed income	1	1	17	45	36	414	4.14
6.	Before I decide to buy a product, I always do a price survey.	0	2	6	46	46	436	4.36
7.	I make a good spending budget	0	7	17	52	24	393	3.93
	Total	10	25	108	304	253	2865	28.65
	Mean							4.09

Source: Processed data (2024)

Based on the results of the questionnaire, the analysis of the respondents' financial management behavior showed an average value of 4.09. This value indicates that most respondents have good financial management behavior. High awareness of spending management is an important point of this finding. In the respondents' responses above, it can be seen that the item with the highest score is item number 6. This indicates that respondents agree to conduct a price survey before buying a product, with the highest mean value, which is 4.36. This reflects wise behavior in making purchasing decisions.

The item with the lowest score is item number 1. This states that respondents separate accounts for daily needs and savings. This statement has a mean value of 3.77, which indicates that this practice is quite often done, although there is still variation in the level of agreement. The frequency distribution for the mental accounting variable has 15 positive statements. The following is the distribution of the mental accounting variable.

Table 7: Frequency Distribution of Mental Accounting Variables

No.	Question	STS	TS	N	S	SS	Amount	Mean
1.	I tend to keep my money in term deposits to get guaranteed returns on a regular basis.	0	8	31	32	29	382	3.82
2.	All incentives received from my office will be saved directly	0	5	31	37	27	386	3.86
3.	I believe that the money saved has the benefit of getting more money.	1	4	15	48	32	406	4.06
4.	I monitor my savings regularly to know my current asset position.	0	3	22	32	43	415	4.15

5.	New expenses for purchases or entertainment only occur when there is a salary increase or other income.	0	9	34	34	23	371	3.71
6.	If there is no increase in income, I may not choose to incur new expenses.	0	10	24	32	34	390	3.90
7.	I set aside part of my salary, pocket money, or income for investment for future income.	0	3	23	43	31	402	4.02
8.	I don't spend the money saved for future investments.	1	0	19	53	27	405	4.05
9.	I don't like spending the money I've saved for my retirement.	0	3	28	48	21	387	3.87
10.	I always set aside some money from my salary to meet my future needs.	0	0	19	55	26	407	4.07
11.	I usually make planned expenses for personal and family needs.	0	3	23	41	33	404	4.04
12.	I always keep track of how much money I spend on things.	0	9	27	33	31	386	3.86
13.	I have a good idea of how much I spend on monthly bills, savings, and other expenses.	1	5	20	47	27	394	3.94
14.	I plan in advance how much money I will spend each month.	1	7	27	42	23	379	3.79
15.	I know how much I will spend on different expense categories each month.	0	2	28	44	26	394	3.94
Total		4	71	371	621	433	5908	59.08
Mean								3.94

Source: Processed data (2024)

From the table above, it shows that the majority of respondents' responses to the mental accounting variable got an average score of 3.94. This reflects a high level of awareness and discipline in mental accounting. The respondents' responses above show the highest score from statement item number 4 of 4.15. This shows a high level of attention to personal financial position. While the lowest score is 3.71 in statement number 5. This reflects that respondents tend to only make new expenses for purchases or entertainment when there is an increase in income. The frequency distribution for the financial literacy variable has 11 positive statements. Furthermore, the frequency distribution for the financial literacy variable is as follows.

Table 8: Frequency Distribution of Financial Literacy Variables

No.	Question	STS	TS	N	S	SS	Amount	Mean
1.	College is part of investment	0	1	7	52	40	431	4.31
2.	Consumption levels are influenced by income	0	0	14	35	51	437	4.37
3.	Personal financial planning is very useful	1	0	2	39	58	453	4.53
4.	The decrease in assets is due to the expenditure of mandatory payments	0	1	28	30	41	411	4.11
5.	A safe way to save money is to save it in a bank.	0	6	23	26	45	40	4.10

6.	The way to gain profits in the future is by investing early.	0	2	17	33	48	427	4.27
7.	If you want to have a share of ownership in company B, you have to buy shares in company B.	0	1	20	44	35	413	4.13
8.	Planning or thinking about finances is an important way	0	0	7	40	53	446	4.46
9.	Preparing money for unexpected needs is important.	1	1	5	35	58	448	4.48
10.	There needs to be consideration regarding the amount of expenditure incurred	1	0	2	58	39	434	4.34
11.	In determining a shopping budget, the most important thing is needs, not wants.	0	2	6	40	52	442	4.42
	Total	3	14	131	432	520	4752	47.52
	Mean							4.32

Source: Processed data (2024)

Overall, the mean value of the financial literacy variable is 4.32, indicating a high level of financial literacy among respondents. This result reflects a good understanding of basic financial concepts and wise financial management practices. The majority of respondents strongly agree with item statement number 3 that personal financial planning is very beneficial, with the highest mean value of 4.53, indicating a strong awareness of the importance of financial management. The lowest value of 4.10 in item number 5 that banks are a safe place to save money, indicating trust in formal financial institutions.

Descriptive statistical tests aim to see the picture of the data that has been collected through minimum, maximum, average (mean) and standard deviation values. This descriptive statistical test is conducted using Microsoft Excel. The following are the results of this descriptive statistical test.

The test results above show that the financial management variable has a minimum value of 1 and a maximum value of 5. In addition, the average value is 4.09 with a standard deviation of 0.88. This shows a large and heterogeneous data distribution. This means that respondents indicate that the statements have diverse answers.

Table 9: Results of Descriptive Statistical

Variables	N	Min	Max	Mean	Standard Deviation
Financial Management	100	1	5	4.09	0.88
Mental Accounting	100	1	5	3.94	0.86
Financial Literacy	100	1	5	4.32	0.75

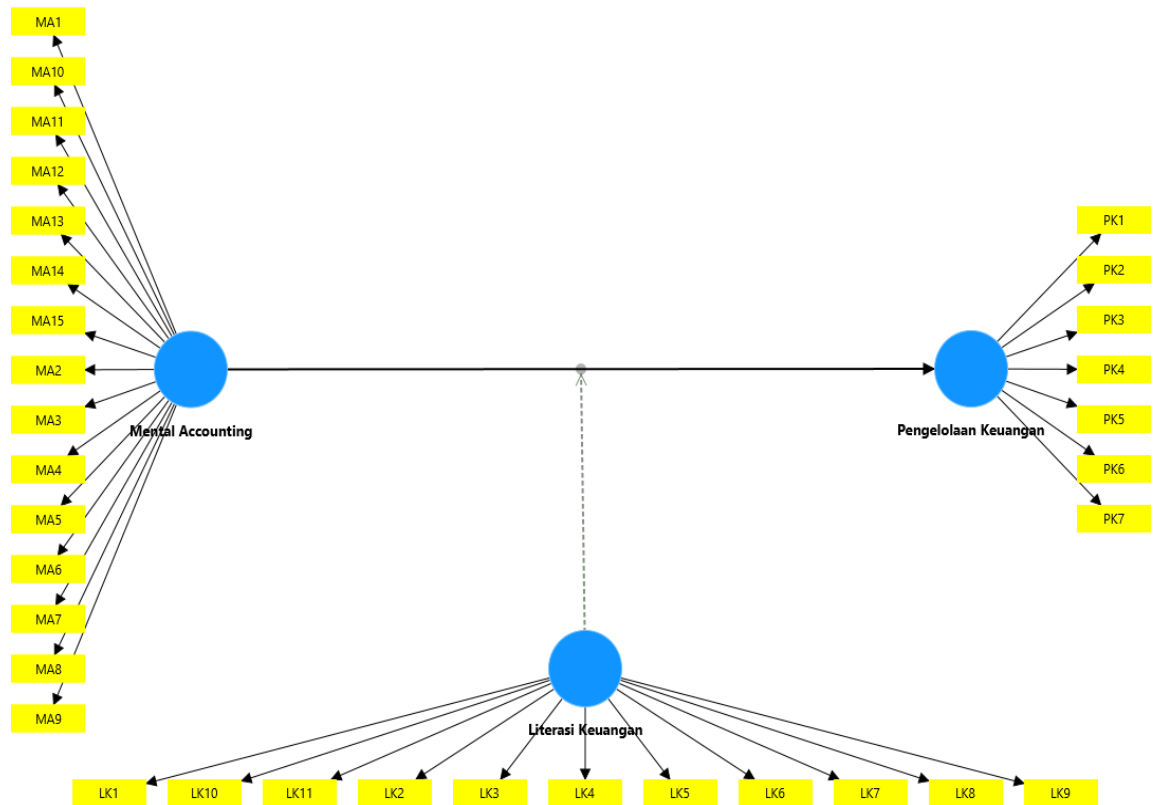
Source: Processed data (2023)

In the mental accounting variable, there is a minimum value of 1 and a maximum value of 5. The average of the variable is 3.94 with a standard deviation of 0.86. This also shows that the distribution of data tends to have a higher variation, with some values possibly further from the average. The financial literacy variable also shows a minimum value of 1 and a maximum value of 5. The average variable is 4.32 and a standard deviation of 0.75. This also shows that the distribution of values is somewhat further from the average.

Outer Model Analysis (Measurement Model)

Outer model analysis is a model that shows the relationships between indicators and their variables.

Figure 1 : Measurement Model



Source: Processed data (2024)

Convergent Validity

Convergent validity is used to see how far the correlation is between indicators and the same variable.

Loading Factor (LF)

Loading factor shows the correlation of measurement items with variables. The results of the LF test can be seen in the following table:

Table 10: Loading Factors Test Results

	Literasi Keuangan	Mental Accounting	Pengelolaan Keuangan
LK1	0.719		
LK2	0.751		
LK3	0.776		
LK4	0.738		
LK5	0.705		
LK6	0.713		
LK7	0.734		
LK8	0.715		
LK9	0.747		
LK10	0.798		
LK11	0.765		
MA1		0.806	
MA2		0.829	
MA3		0.724	
MA4		0.774	
MA5		0.793	
MA6		0.787	
MA7		0.771	
MA8		0.752	
MA9		0.759	
MA10		0.722	
MA11		0.702	
MA12		0.732	
MA13		0.748	
MA14		0.740	
MA15		0.713	
PK1			0.814
PK2			0.794
PK3			0.790
PK4			0.798
PK5			0.790
PK6			0.779
PK7			0.793

Source: Processed data (2024)

According to Hair Jr. et al. (2021) factor loadings value is more than 0.7. However, a value of 0.5-0.7 is still acceptable in some cases, especially if the validity of other constructions has met the requirements. Therefore, based on these provisions, it can be concluded that all statement items can be declared convergent valid.

Average Variance Extracted (AVE)

Average Variance Extracted (AVE) test is conducted to evaluate the extent to which the indicators used can reflect each variable. The AVE value shows the correlation between the indicator and its variables. The following are the results of the AVE test:

Table 11: Average Variance Extracted (AVE) Test Results

	Average variance extracted (AVE)
Literasi Keuangan	0.551
Mental Accounting	0.574
Pengelolaan Keuangan	0.631

Source: Processed data (2024)

The value of AVE received is ≥ 0.5 . Overall, all variables in this study have an AVE value above 0.5, which means that the indicators used are valid to reflect each variable. Thus, the constructs in this research model have adequate convergent validity.

Discriminant Validity

This test uses the Fornell-Larcker Criterion. This method is used to see how far a latent variable differs from other latent variables in the model. The Fornell-Larcker Criterion compares the square root value of AVE (Average Variance Extracted) of a latent variable with the correlation between other latent variables (Rasoolimanesh, 2022). The following are the results of the Fornell-Larcker Criterion test:

Table 12: Fornell-Larcker Criterion Test Results

	Literasi Keuangan	Mental Accounting	Pengelolaan Keuangan
Literasi Keuangan	0.742		
Mental Accounting	0.574	0.758	
Pengelolaan Keuangan	0.534	0.520	0.794

Source: Processed data (2024)

Based on the results of the analysis using the Fornell-Larcker Criterion, all latent variables in this study meet the criteria for discriminant validity. The square root value of AVE for each variable is greater than its correlation value with other variables, indicating that each variable has a unique construct and does not overlap significantly with other variables. This supports the validity of the measurement model used in the study.

Reliability Test

Reliability test is useful to measure how far the measurement instrument produces consistent results. The goal is to ensure that the research instrument produces consistent and reliable data when used repeatedly or under various conditions. The following are the tests carried out in the reliability test:

Composite Reliability (CR)

Composite reliability is used to measure how reliable the entire latent construct is, including the internal consistency of the indicators. The value of the composite reliability test results of this study is:

Table 13: Composite Reliability Results

	Composite reliability (rho _a)	Composite reliability (rho _c)
Literasi Keuangan	0.945	0.931
Mental Accounting	0.950	0.953
Pengelolaan Keuangan	0.910	0.923

Source: processed data (2024)

A variable is said to be reliable if the composite reliability value is more than 0.7 (Hair Jr. et al., 2021). Therefore, the results of this research test can be said to be reliable where the composite reliability results exceed 0.7.

Cronbach's Alpha

Cronbach's alpha is used to measure the internal consistency of a series of items in an instrument. Here are the results of the Cronbach's alpha test:

Tabel 14. Cronbach's Alpha Results

	Cronbach's alpha
Literasi Keuangan	0.921
Mental Accounting	0.947
Pengelolaan Keuangan	0.903

Source: (Data processed 2024)

Good Cronbach's alpha value is more than 0.7. The test results show that the Cronbach's alpha value has met that value. This indicates that all variables can be said to be reliable in this test.

Inner Model Analysis (Structural Model)

Inner model analysis shows the relationship between one variable and another. The tests that will be carried out are the R square and F square tests.

R square

R square or coefficient of determination is a statistical measure in regression analysis that is used to assess how well a regression model can explain variation in the data. This value indicates the percentage of variation in the dependent variable (Y) that can be explained by the independent variables (X) in the model. Here are the R square results:

Table 15: R square results

	R-square	R-square adjusted
Pengelolaan Keuangan	0.385	0.366

Source: processed data (2024)

The results of the test show that the R-square value is 0.385. This concludes that the influence of the mental accounting variable with the financial literacy variable on the financial management variable is 38.5%. Based on existing provisions, it can be concluded that the influence is weak.

F test

F or effect size is used to evaluate the relative contribution of independent variables to dependent variables in a model. F square helps measure how much influence an independent variable has on R-Square if the variable is added or removed from the model. Here are the results of the F test:

Table 16: F test results

	f-square
Mental Accounting -> Pengelolaan Keuangan	0.121
Literasi Keuangan x Mental Accounting -> Pengelolaan Keuangan	0.052

Source: Processed data (2024)

Based on the results above, the influence of the mental accounting variable on financial management is 0.121. This indicates that mental accounting has a weak influence on financial management. The mental accounting variable on financial management moderated by financial literacy shows a value of 0.052. This also indicates a weak relationship between these variables.

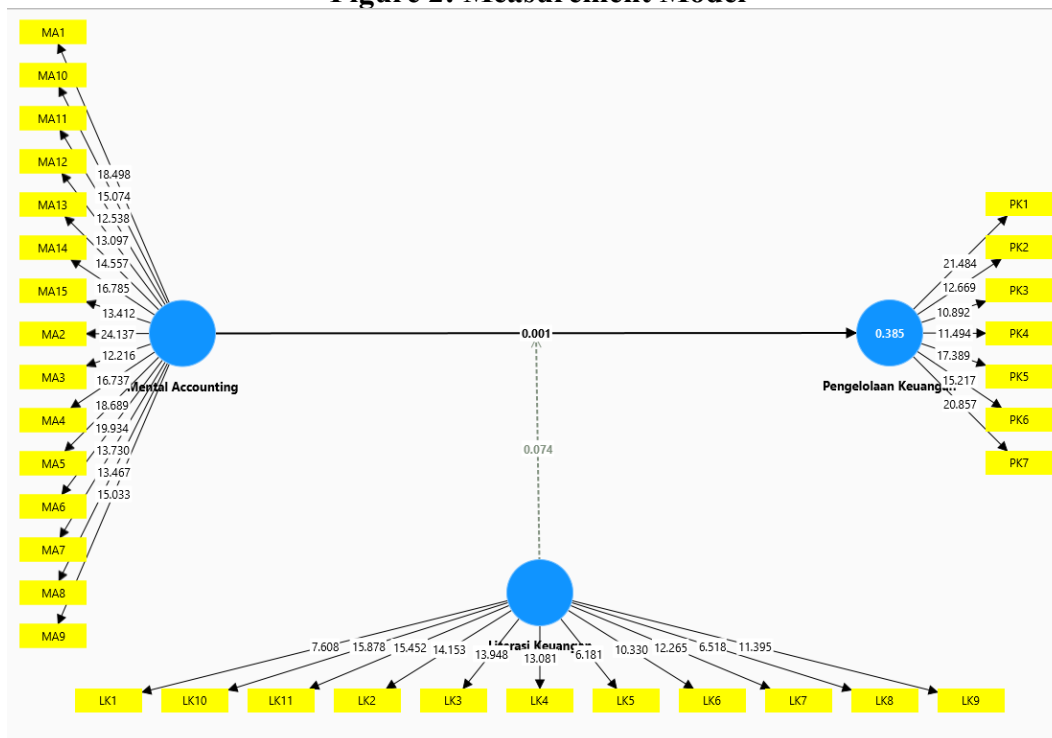
Hypothesis Testing

The following are the results of testing to see whether the hypothesis is accepted or not in the research:

Path Coefficients

Path coefficients are used to see the results of p value and t statistics. The results of the research model diagram with p value are as follows:

Figure 2: Measurement Model



Source: Processed data (2024)

P value is analyzed using a comparison with alpha (10%). The hypothesis result will be accepted if the p value is less than alpha, for a significant level of 10% then the t value is 1.65. The hypothesis is accepted if the t statistic result is greater than the t value. The following are the results of the Path coefficients test:

Table 17. Path coefficients test results

	Original sample (O)	T statistics (O/STDEV)	P values	f-square
Mental Accounting -> Pengelolaan Keuangan	0.333	3.186	0.001	0.121
Literasi Keuangan x Mental Accounting -> Pengelolaan Keuangan	-0.142	1.444	0.074	0.052

Source: Processed data (2024)

Based on the results in the table above, it is known that the test results of the influence of mental accounting on financial management produce a t statistic value of 3.186 which means it is greater than the t value of 1.65. In addition, the p value is 0.001 smaller than the alpha value of 0.1. In addition, the direction of the influence is positive at 0.333. So it can be concluded that mental accounting has a positive effect on financial management and **H1 is accepted**.

The results of testing the influence of mental accounting on financial management with financial literacy as moderation produced a t statistic value of 1.444 which means it is smaller than the t value of 1.65. In addition, the p value of 0.074 is smaller than alpha 0.1. So it can be concluded that financial literacy does not strengthen the influence of mental accounting on financial management and **H2 is rejected**.

Confidence Interval

Confidence interval is used to see the magnitude of the interval of influence of increase and decrease between variables. The test results are as follows:

Table 18: Confidence Interval Results



	Original sample (O)	Sample mean (M)	10.0%	90.0%
Mental Accounting -> Pengelolaan Keuangan	0.333	0.327	0.192	0.459
Literasi Keuangan x Mental Accounting > Pengelolaan Keuangan	-0.142	-0.104	-0.197	0.035

Source: Processed data (2024)

From the path coefficients test and the confidence interval test, it can be seen that at this interval it shows that with a confidence level of 80%, the influence of mental accounting on financial management is significant because the interval does not include the value of zero. This means that mental accounting has a positive influence on financial management. The magnitude of the influence of mental accounting on financial management is between 0.192 and 0.0459. This indicates that if there is a decrease in the value of mental accounting, the value of financial management can decrease to 0.192. Conversely, if there is an increase in the value of mental accounting, the value of financial management will increase to 0.99.

This interval shows that the moderating effect of financial literacy is not significant at the 80% confidence level because the interval includes the value of zero. This means that financial literacy as moderation does not provide a strong or consistent influence on the relationship between mental accounting and financial management.

The Influence of Mental Accounting on Financial Management

The test conducted to see the influence of mental accounting on financial management produced t statistic $>$ t value ($3.186 > 1.65$) and p value $<$ alpha ($0.001 < 0.1$) with a direction of influence of 0.333, then H1 is accepted. This indicates that mental accounting has an effect on financial management. The results of this study are in line with the results of research from (Zaniyani et al., 2022), where the better a person's mental accounting, the better a person is in managing their finances. Conversely, if a person has poor mental accounting, they will also be bad in managing their finances.

Theory of planned behavior also supports the results of this study. The combination of mental accounting with TPB shows that dividing money into certain categories helps strengthen the intention and behavior of managing money wisely. Positive attitudes towards money management, support for social norms, and high perceptions of control play an important role in explaining how mental accounting affects individual financial behavior. Therefore, financial education programs based on TPB can be designed to increase mental accounting awareness and financial management effectiveness among the community.

Financial Literacy Strengthens the Influence of Mental Accounting on Financial Management

The results of the test to see financial literacy strengthen the influence of mental accounting on financial management produce t statistic $<$ t value ($1.444 < 1.65$) and p value $<$ alpha ($0.074 < 0.1$), then H2 is rejected. This is in line with research Zakka (2024), where financial literacy does not have the power to influence financial management. Whether a person has good financial literacy or not, it will not affect how a person manages their finances too much.

This study shows that within the framework of the theory of planned behavior, these results can be explained by the aspect of perceived behavioral control. Although financial literacy can improve an individual's understanding of financial concepts, it does not necessarily guarantee that individuals feel they have greater control over their financial management. In other words, even if someone has good financial literacy, if they already have a strong mental accounting structure, they may not feel the need to rely on financial literacy in making financial

decisions.

In addition, the subjective norm aspect in TPB is also relevant. Individual financial decisions are often influenced by social norms, such as family or community habits in managing finances, which may be more dominant than the influence of financial literacy. This reflects that financial literacy, although important, does not always have a major role in moderating the relationship between mental accounting and financial management.

CONCLUSIONS

This study aims to determine the effect of mental accounting on financial management, and financial literacy will strengthen the effect of mental accounting on financial management. This study was conducted on microtransaction buyers in online games in Indonesia. Researchers collected data from 100 respondents through questionnaires. Based on the results of the mental accounting variable test on financial management, it was concluded that mental accounting has a positive effect on financial management. This finding shows that individuals who divide their money into certain categories tend to be wiser in managing their finances. The test results also show that financial literacy does not strengthen the relationship between mental accounting and financial management. Which means that the high or low level of a person's financial literacy, there is no significance in improving financial management if the structure of their mental accounting is already strong.

This study has several limitations that need to be considered, including the majority of respondents in this study were male (99%) and aged 18-23 years (55%), so this study may not fully represent a more heterogeneous population. This study only uses one independent variable, namely mental accounting, without considering other factors such as economic conditions, income, or lifestyle that may affect a person's financial management. Online questionnaire-based data collection techniques can present a risk of response bias, especially if respondents are not completely honest or understand the questions well.

For further research, it is expected to involve respondents with more diverse demographic characteristics. Add other variables to further explore the factors that influence financial management. Use other data collection methods to provide more understanding of a person's financial management behavior.

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