Investigating spending behaviour using a mental accounting approach

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ABSTRACT

Overspending is a serious issue that causes high indebtedness and financial instability, especially among Muslims. One way to control this undesirable behaviour is through a mental accounting approach by grouping financial activities into different accounts. The wasatiyyah trait can strengthen this relationship. Finding out how Muslim demographic factors affect overspending, how mental accounts help control overspending, and how wasatiyyah affects the link between mental accounts and overspending are the main goals of this study. This study uses primary data collection through survey questions. We selected 500 Muslims, and 201 of them participated in the survey. This study uses SMARTPLS 3 to analyse the data. The contribution of this study comes from exploring how overspending behaviours are affected by mental accounting and wasatiyyah traits; to our knowledge, no previous studies have investigated these relationships. The findings confirmed the significant impact of age, income level, and mental accounting on certain overspending behaviours but not for a wasatiyyah. This study recommended that future research contemplate wasatiyyah as a direct indicator of spending behaviour. Understanding overspending behaviour provides an insightful approach to controlling the bad behaviour among Muslims.

Contribution/ Originality: To investigate overspending behaviour, we focused on Muslim groups, which is different from other studies on general consumers and households. We also incorporated the wasatiyyah/moderation practice in Islam, a concept that other scholars have not empirically tested, particularly from a mental accounting perspective.

1. INTRODUCTION

According to the 2019 World Bank Report, most Malaysians face the challenge of controlling their expenditures, which makes them highly indebted and financially vulnerable. According to (Achtziger, 2022 over-indebtedness refers to debts that are unrepayable or require extreme hardship to repay). Their inability to monitor spending and control debts places them at risk of going bankrupt. According to data from the Department of Insolvency, as of July 2020, there had been 4,151 bankruptcy declarations. Of these, 2,312 were Malays; 1,028 were Chinese; 307 were Indians; 490 were people of other ethnicities; and 14 were foreigners (Hoo, 2020). Among the factors behind high personal bankruptcy rates in Malaysia are credit card debts, car loans, and insufficient knowledge of personal financial management. The World Bank in the Malaysia Economics Monitor 2019 reported that households use credit card facilities and personal loans to improve their short-term standard of living and

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spend more than they can afford (Badrul Huzaini, 2019). The RinggitPlus (2020) online survey revealed that 46% of respondents are spending exactly what they earn or even more, which is an increase of 3% compared to 2019.

These statistics show that people are living beyond their financial capability and have poor debt management, especially among Muslims. With the high number of bankruptcies among Malays, Malay-Muslims are presenting as the majority of Muslims in Malaysia; hence, it shows the significant financial instability among this group. Islam does not forbid debt, but it requires fulfillment and encourages avoidance (Lebdaoui & Chetioui, 2021). Muslims are encouraged to be moderate, also known as wasatiyyah, in their day-to-day behaviour. Therefore, they should keep themselves away from excessive spending behaviour.

Furthermore, to further understand overspending behaviour and how Muslims manage their spending behaviour, this study applies the mental accounting approach that is used to help people organise their financial matters and money management. Mental accounting encourages people to categorise their financial activities into "mental accounts" and make decisions based on spending and saving categories. According to Shefrin and Thaler (1992) and Cheema and Soman (2006), mental accounting is often perceived as a self-control instrument to prevent overspending behaviour. It is a powerful restraint on impulsive spending when customers anticipate the unexpected amount of money they spend and prepare funds accordingly. It is a significant way to control their irrational spending level. Stilley, Inman, and Wakefield (2010). According to Di Domenico, Ryan, Bradshaw, and Duineveld (2022), there are groups of people who have overspent their expenses due to a lack of motivation to understand and manage their finances, either because they do not want to change or because they perceive that they are incapable of managing their financial matters. Overspending is an issue that needs to be addressed to avoid serious social problems due to financial strain (Othman, Bakar, Sani, & Sallim, 2020).

Therefore, this study extends the current study by exploring how overspending behaviours are influenced by the Muslims' demographic factors, mental accounting, and wasatiyyah trait. Our study makes three main contributions to understanding Muslim overspending behaviour. First, we consider overspending from three categories: income, expected, and credit overspending. We focus on Muslim spending behaviour because they are reported as the most vulnerable group in spending patterns in Malaysia. Moreover, Sui, Sun, and Geyfman (2021) summarised that most research on overspending focuses on unessential spending, lack of savings, overspending patterns of demographic groups, and analysis of overspending outcomes.

Second, we offer mental accounting as an indicator to examine its effect on overspending. Some scholars implied mental accounting as an underlying theory in their research (e.g., (Hou, Hsueh, & Zhang, 2021; Shah, Khan, & Khan, 2024; Stilley et al., 2010)), but others considered it as a variable and tested it empirically. As far as we are concerned, not many studies have investigated the influence of mental accounting on overspending, except (Sui et al., 2021). In fact, our study differs from theirs as we measure mental accounting as one variable, but Sui et al. (2021) assigned it to a different level of mental accounting.

Third, we chose to include wasatiyyah in our study since there are few studies on how watiyyah influences individuals' spending behaviour and our study differs from existing studies. The concept of wasatiyyah needs to be better explored by researchers; in fact, limited empirical studies have explored it in the research. Wasatiyyah has been discussed conceptually and deductively in previous studies (e.g., (Bakir & Othman, 2017; Hanapi, 2014; Kamali, 2014; Meerangani, Abdul Hamid, & Ramli, 2022; Mujani, Rozali, & Zakaria, 2015)). Nevertheless, there are few empirical studies that have applied the concept of wasatiyyah in the areas of consumption behaviour (Biplob & Abdullah, 2021) and time management (Islam, Ali, & Osmani, 2021). With the comprehensive concept of wasatiyyah, it can be used in studies from different angles, and due to the lack of empirical research on wasatiyyah, this study applies it to determine its effect on spending behaviour.

Our empirical results provide evidence that overspending behaviour is affected by age, mental accounting for expected and credit overspending, and income for credit overspending. Nonetheless, wasatiyyah did not moderate the association between mental accounting and any of the overspending categories. This finding is insightful for

future research to explore the spending pattern, considering mental accounting categories such as current assets, current income, saving goals, and expenditure forecasts (Mahapatra, Raveendran, & De, 2021; Sui et al., 2021). Apart from that, the practice of wasatiyyah within the Muslim community should be examined as a direct construct affecting spending behaviour.

The rest of this paper is arranged as follows: The next section discusses the literature reviews and hypotheses developed for mental accounting, demographic factors, spending behaviour and wasatiyyah. The following section then provides an explanation of the research methodology, analysis, and findings of the study. The last section focuses on the discussion and conclusion of the study.

2. LITERATURES AND RESEARCH HYPOTHESES

2.1. Mental Accounting

Mental accounting theory is used in behavioural finance for judgment and decision-making. Thaler (1999) refers to mental accounting as "the set of cognitive operations used by individuals and households to organise, evaluate, and keep track of financial activities" (p. 183). Hence, it is a process to monitor income and expenses by categorising financial activities and assigning them to specific budgets. In mental accounting theory, individuals employ and code gains and losses to make decisions. This theory encourages people to categorise their financial activities into "mental accounts" and make decisions based on spending and saving categories. Many pieces of mental accounting literature concern the budgeting process (Muehlbacher & Kirchler, 2019). People create mental accounts to manage their consumption decisions and purchase items within their "mental budget account" (Milkman & Beshears, 2009).

However, Thaler (1999) highlighted three components of mental accounting. The first component illustrates the perception and experience of outcomes, as well as the process of decision-making and assessment. Before making a purchase decision, the deal or bargain of transactions incorporates the consumer's choices. The second component involves allocating activities or funds to specific accounts. This component entails categorizing spending into distinct accounts, such as food, travel, etc. Individuals track their transactions to ensure their spending stays within their budget. The final aspect of mental accounting concerns the frequency of account evaluations. People check account balances either rarely or often. Tracking financial transactions and maintaining financial restraint through accounting is a cognitive process (Thaler, 1985) that may help households make better financial decisions, resulting in well-structured financial planning (Mahapatra & Mishra, 2020).

Zhang and Sussman (2018) found that mental accounting influences consumer decision-making regarding budgeting, spending, and investment decisions. Mental accounting assists households in preparing a financial budget, spending within the limit, and evaluating the best investment options. The mental accounting concept has been widely used in numerous financial decisions of individual psychology (Mahapatra & Mishra, 2020); this makes it appropriate for study in this research, but from a Muslim perspective, it may differ from other studies of mental accounting.

2.2. Demographic Factors and Spending Behaviour

Several studies on spending behaviour and financial planning focused on demographic characteristics, specifically age and income. Among others, Othman et al. (2020) examined the demographic attributes affecting overspending patterns among Malaysian households from different income categories to indicate the poverty level. Their study revealed four attributes—number of households, income, race, and state—that highly influence overspending behaviour. It showed that low-income households spent more on their earnings than middle- and high-income households.

Meanwhile, age and marital status are additional significant attributes for credit card holders' spending behaviour among Malaysians, according to the research conducted by Ming-Yen Teoh, Chong, and Mid Yong

(2013). Age, income, and marital status have a significant association with spending behaviour among credit card holders. Respondents over 61 who earned a high income were more likely to spend more on credit cards than other groups of respondents.Elderly people have more purchasing power because they have attained financial freedom and commitment.

Zainudin, Mahdzan, and Yeap (2019) also explored credit card spending among Malaysian Generation Y (Gen Y). The results revealed a significant correlation between credit card attitude and credit card misuse, indicating that credit cards are used for long-term financing rather than short-term ones. Due to significant debt commitments in the early years of life, the younger generation is more likely to use their credit cards excessively. Even when they are unable to pay the balance in full, some credit cardholders use the card to purchase the goods they want. Moreover, the younger generation, which fell into the middle-income group, was more likely to misuse credit cards as compared to the higher-income average. In their financial planning and saving research, Brounen, Koedijk, and Pownall (2016) found that younger households have a tendency to save in the present to spend for future well-being.

Likewise, Di Domenico et al. (2022), in their study on personal financial management, discovered that age and overspending have a strong inverse relationship. Mature people were able to manage their financial matters and spend less than they could. Furthermore, the research attested that income had a strong positive correlation with investing and saving, suggesting that high income may have allowed for higher savings. In the consumer study, Stilley et al. (2010) identified that high-income shoppers can easily exceed their budgets for unplanned items with high budget certainty.

Focusing on households' over-indebtedness in Thailand and Vietnam rural areas, Chichaibelu and Waibel (2018) found that over-indebtedness in both countries had a strong negative relationship with income and households headed by middle-aged people. It demonstrated over-indebtedness due to high social pressure, low education, and the perception of being worse off. Due to many discussions on the impact of age and income level, this study expects that both indicators influence overspending behaviour, and it gives rise to the first and second hypotheses.

H_{1a}: Age is associated with income overspending behaviour.

H_{1b}: Age is associated with expected overspending behaviour.

H_{1c}: Age is associated with credit overspending behaviour.

H_{2a}: Income is associated with income overspending behaviour.

H_{2b}: Income is associated with expected overspending behaviour.

H_{2c}: Income is associated with credit overspending behaviour.

2.3. Mental Accounting and Spending Behaviour

Overspending refers to the situation when an individual's expenditure exceeds their income, resulting in negative savings (Zan & Hanna, 2008). Sui et al. (2021) divided overspending behaviour into three different categories, income overspending, expected overspending, and credit overspending. Income overspending occurs when spending exceeds income earned. Expected overspending arises from spending exceeding a normal annual amount, and credit overspending results from the situation when an individual does not regularly pay off credit debts. Credit card overspending behaviour can also be measured by consumption amount, cash withdrawal amount, and over-due (Ming, Li, & Chen, 2020). For that reason, overspending affects the accumulation of wealth, decreases net worth, and causes financial insecurity (Bae, Hanna, & Lindamood, 1993; Zan & Hanna, 2008). To prevent overspending and maintain financial balance, individuals might use mental accounting as a self-control tool (Hou et al., 2021). Their study applied mental accounting theory to explain households' consumption using digital payments. Their findings indicated that individuals with better self-control can follow their financial planning and budgeting to avoid overspending when using digital payments.

A study by Stilley et al. (2010) categorised mental accounts into planned and unplanned portions. To test customers' in-store decision making, 400 customers were selected from two grocery stores in the United States of America (USA). The result revealed that spending on planned items rises in correlation with savings when in-store slack remains. It showed that when budget certainty is high, high-income consumers are still more inclined to go over their budgets for spending. Shah et al. (2024) investigated the impact of payment methods, either cash or digital, on overspending behaviour from a mental accounting perspective. The study examined how customers value the same amount of money differently when they use various payment methods. The findings confirmed that both payment methods significantly influenced spending behaviour, however, digital payments have a more significant effect on spending behaviour as compared to cash payments. Nevertheless, Stilley et al. (2010), Hou et al. (2021), and Shah et al. (2024) did not statistically test mental accounting as a construct but instead implied it as a theory underpinning their studies.

In contrast, Mahapatra, Raveendran, and De (2018) investigated the impact of mental accounting on influencing personal financial planning among households in India. The results empirically found that mental accounting significantly affected household financial planning. The study suggested that this significant impact would control the use of money for current and future necessities. It helped households manage, deal with, and react appropriately in various financial situations to prevent financial losses and uncertainties.

In another study, Mahapatra and Mishra (2020) analysed the effect of mental accounting on households' financial decisions, dividing it into mental budgeting, current income, current assets, and future income. The empirical results indicated that mental accounting essentially influenced households' financial decisions.

Similarly, Antonides, De Groot, and Van Raaij (2011) delved into the role of mental budgeting in households' financial management and financial status in the Netherlands. Mental budgeting is a narrow sense of mental accounting that involves labelling spending or saving categories in which a budget is used to monitor the spending. The survey revealed that a mental budget approach improved households' financial management and financial status. Therefore, mental budgeting, as expected, has a substantial effect on expenses and current accounts, ensuring no more spending than has been planned for.

Likewise, Huebner, Fleisch, and Ilic (2020) applied mental accounting to their field experiment on credit card consumers to investigate the effectiveness of using a smartphone application that makes credit card transactions more visible to control consumers' spending. Interestingly, the study employed mental accounting to operationalise a salience setting (control) construct. This implies that customers who classify and record each transaction would experience a reduction in their spending. The findings proved the impact of this technology on consumers' credit card spending. Customers would reduce their spending when credit card transaction salience increased by classifying transactions into ordinary and exceptional purchases.

Using a machine-learning-based method, Zainal Alam, Yong, and Mansor (2022) investigated an individual's saving adequacy based on the Malaysian Ageing and Retirement (MARS) survey data. They examined the predictive power of mental accounting on saving adequacy and categorised mental accounting into a wealth component and an expenditure component. The research advocated that mental accounting categories had predictive power for saving adequacy.

Most of the research on mental accounting and spending behaviour focused on customer demographic information and past buying behaviour to predict spending patterns (Singh, Freeman, Lepri, & Pentland, 2013) and credit card overspending (such as (Huebner et al., 2020; Ming-Yen Teoh et al., 2013)). However, our study applies the overspending categories provided by Sui et al. (2021) to gain a better understanding of overspending patterns that most likely happened among Muslims in Malaysia. Furthermore, this study incorporates mental accounting to understand its impact on overspending behaviour further. Therefore, this study proposes the following hypotheses:

H_{3a}: *Mental accounting is associated with income overspending behaviour.*

H_{3b}: *Mental accounting is associated with expected overspending behaviour.*

H$_{3c}$: Mental accounting is associated with credit overspending behaviour.

2.4. Wasatiyyah and Spending Behaviour

Al-Wasatiyyah, originally from the Arabic word "wasat," meaning "middle," brings forth a moderate. It refers to something in the position between two extremes that gives beneficial cause to Muslims (Hanapi, 2014). Islam teaches Muslims to be moderate, or wasatiyyah, in every aspect of their lives, including spending behaviour. Muslims are advised to save for the future and not to overspend on unnecessary things. Since excessive living is forbidden in Islam, wasatiyyah is seen as a way to control Muslim overspending behaviour among Muslims. It encourages Muslims to spend according to their capabilities (Biplob & Abdullah, 2021). Indeed, Muslims should use their wealth for future savings and give to the needy in terms of sadaqah, zakat, or wakaf.

Lebdaoui and Chetioui (2021) investigated indebtedness among Muslim consumers in Morocco. The findings revealed that attitudes toward debt and materialism had a significant impact on Muslim consumer's indebtedness. Nonetheless, their study did not consider wasatiyyah as an indicator.

In another study on financial literacy among Muslim university students in Malaysia by Md. Sapir@ Md. Shafik and Wan Ahmad (2020), Islamic measurements based on a tawhid worldview were used to figure out how much people knew about money. People who learned about tawhid-based financial literacy learned about syukur (gratitude), riba' (a loan with regular interest), takaful coverage (Islamic insurance), and how to avoid spending money that isn't necessary. The results demonstrated the importance of Islamic finance-business-related courses for students to improve their financial literacy.

Few studies have considered wasatiyyah in their study. Ramlee, Syed Mohd Zain, and Wan Husain (2019) found that wasatiyyah is an important factor that stands between materialism, financial literacy, and the choices Muslims in Malaysia make about their money. The research found that wasatiyyah partially mediated the association between materialism and financial decisions. Muslim consumers with the wasatiyyah trait made their financial decisions more consciously and spent according to their needs. On the contrary, Wan Husain, Ramlee, Zain, and Jan (2021) found that wasatiyyah had no mediation effect on Muslim students' financial decisions, although it had a significant negative impact. It indicated that students were more aware before making any important financial decisions.

Based on the discussion above, little is known about the role of wassatiyyah in spending behaviour among Muslims from a mental accounting perspective, and hence, we perceive this factor could influence the relationship. As far as we are concerned, no empirical study has been conducted to look at the wasatiyyah trait in spending behaviours. Thus, our study tries to address the gap and contribute to the literature. Therefore, we predict that wasatiyyah moderates the influence of mental accounting and overspending behaviour:

H$_{4a}$: Wasatiyyah moderates the relationship between mental accounting and income overspending behaviour.

H$_{4b}$: Wasatiyyah moderates the relationship between mental accounting and expected overspending behaviour.

H$_{4c}$: Wasatiyyah moderates the relationship between mental accounting and credit overspending behaviour.

The following is this study's conceptual framework (Figure 1), developed from previous literature. Mental accounting, as a theory of the study, is expected to have an impact on the overspending behaviour of Muslims. In addition, Muslim's age and income also affect their spending behaviour. Wasatiyyah is seen as a factor that can influence the relationship between mental accounting and spending behaviour.
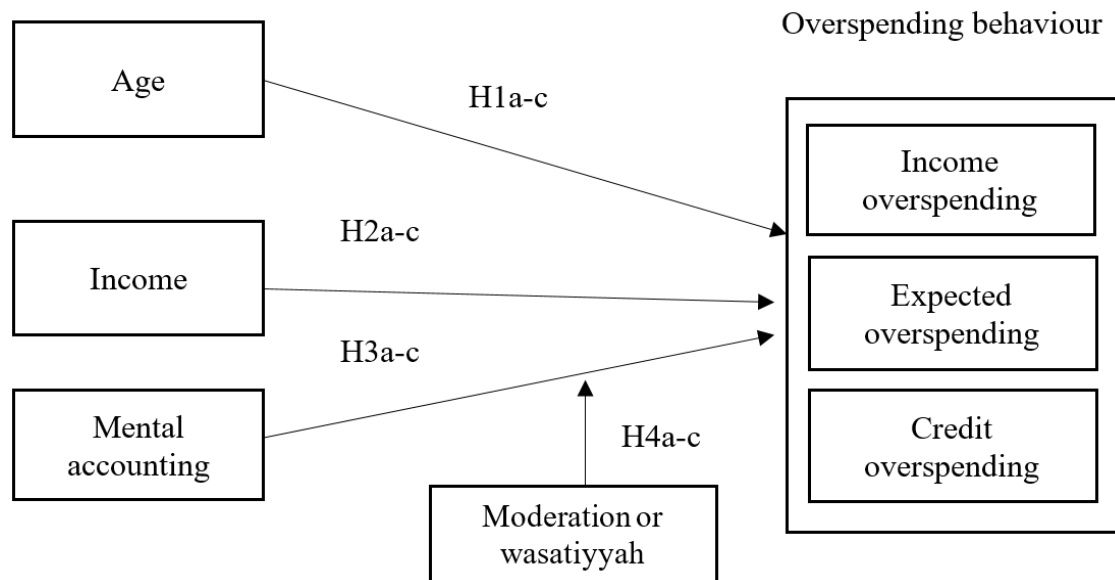
Figure 1. Conceptual framework of study.

3. METHODOLOGY

3.1. Samples

Probability sampling through simple random sampling was used, in which 500 Muslims were selected as respondents from the Muslim population of approximately 19 million in Malaysia. The list of respondents was gathered from directories of Islamic organisations in the Klang Valley area of Malaysia. The sample size of 500 respondents is accurate for a confidence level of 95%, assuming that data are collected from all cases in the sample (Saunders, Lewis, & Thornhill, 2009). As a result, 201 respondents participated in this study.

3.2. Instruments and Measurements

This study applied a quantitative approach to understand the relationship among variables or to assess a large number of people's responses (Creswell, 2014). Therefore, this study used a quantitative survey to achieve the research objectives and test the hypotheses, which involved a large number of respondents among Muslims in Malaysia to collect their responses on the issue of the study. A set of questionnaires was developed and divided into four different sections, consisting of one section for respondents' backgrounds and three sections representing the variables of the study. The questions were adopted and modified from past literature. Overspending behaviour items used three categorical questions as applied in Sui et al. (2021). For mental accounting, nine items were adopted from Antonides et al. (2011), Muehlbacher and Kirchler (2019), and Soman (2001). The items were developed from the research work conducted by Biplob and Abdullah (2021) to measure wasatiyyah, and factor analysis was run to confirm the validity of the items. All mental accounting and wasatiyyah items were measured on a Likert-type scale of five points, with the lowest point of 1 representing strongly disagree and the highest of 5 representing strongly agree.

Initially, the questionnaire was given to a panel of established researchers (i.e., five persons) to evaluate whether the measures of the research instruments include an adequate and representative set of items that tap the concept of spending behaviour. An instrument can be said to have content validity if a panel of judges evaluates it (Sekaran, 2000). Upon amendment, the questionnaire was sent for pilot testing to 30 Muslims drawn from the study sample. The purpose of the test was to detect weaknesses in the design of the questionnaire. Based on the pilot test results, one item for wasatiyyah was removed from the survey. The final survey version was sent for ethical consideration before being distributed to the respondents. Later, the survey was shared with the respondents through an online survey sent via email.

The cover letter accompanying the questionnaire stated clearly the purpose of the research. The letter also provided information about the duration required to complete the questionnaire. The purpose of limiting the time is to prevent the respondents from getting tired or bored while attempting the questionnaire (Sekaran, 2000). Simplifying the questionnaire and proposing a short completion time reduced this maturity effect. As such, the internal validity increased due to the reduced maturity effects.

4. RESULTS

4.1. Descriptive Analysis

Table 1 summarises the background information of the respondents. The majority of the respondents are female (136, 67.7%), aged between 25 to 35 years old (66, 32.8%), and married (142, 70.6%). Eighty-seven (43.3%) respondents fall within the monthly income range between RM2,501 and RM4.849.

Table 1. Background information.

Demographic	n	%
Gender:		
Male	65	32.3
Female	136	67.7
Age:		
18 to 25 years old	24	11.9
25 to 35 years old	66	32.8
36 to 45 years old	57	28.4
45 to 60 years old	45	22.4
More than 60 years old	9	4.5
Marital status:		
Married	142	70.6
Single	59	29.4
Income per month:		
Less than RM2,500	53	26.4
RM2,501 to RM4,849	87	43.3
RM4,850 to RM10,959	55	27.4
RM10,960 to RM15,039	4	2.0
More than RM15,040	2	1.0

Table 2 presents the response to overspending. Overspending in this study has been categorised into three different types: income overspending, expected overspending, and credit overspending.

Table 2. Frequency distribution and mean of overspending's categories.

Categories of overspending	Mean	n	%
1. Income overspending	1.9	201	100
Spending equalled income	0.4	97	48.3
Spending exceeded income	0.2	35	17.4
Spending less than income	0.3	69	34.3
2. Expected overspending	1.8	201	100
Spending equalled expectation in a "normal" year	0.3	70	34.8
Spending exceeded expectation in a "normal" year	0.5	106	52.7
Spending was less than expectation in a "normal" year	0.1	25	12.4
3. Credit overspending	1.2	201	100
Always pay off credit card balance	0.8	166	82.6
Sometimes pay off credit card balance and hardly pay off credit card balance	0.1	23	11.4
Hardly pay off credit card balance	0.06	12	6.0

The table indicates that 97 (48.3%) respondents spend equal amounts of their income, but the spending was more than their expectations (106, 52.7%). Nevertheless, most respondents have no problem paying off their credit card amount (166, 82.6%). For the mean score, income overspending is higher than expected, while credit overspending is 1.9, 1.8, and 1.2, respectively. It demonstrates that respondents spend more than their earnings and exceed their normal expenditures.

4.2. Structural Equation Modelling

This study used SmartPLS 3 to perform the analysis. Formative measurements were used for the constructs of this study. This study's framework predicted wasatiyyah as a moderating variable in the relationship between mental accounting and all three overspending behaviours constructs. Based on the SmartPLS 3 protocol, wasatiyyah was added first to the model to evaluate its main effect. The model's internal consistency was evaluated using composite reliability (CR). Convergent validity was assessed using average variance extracted (AVE), while discriminant validity was evaluated using the Fornell-Larcker criterion, cross-loading, and heterotrait-monotrait (HTMT).

Following Hair, Hult, Ringle, and Sarstedt (2017), the cut-off value for the observed items' factor loading of 0.7 was used for the construct reliability assessment. This study's model includes two constructs, mental accounting and wasatiyyah, each measured by multiple items. We removed two items for the constructs of mental accounting and four items for wasatiyyah due to their low outer loadings. The model retained only items with outer loadings above 0.7. For internal consistency, CR for all constructs was at least 0.766, indicating a satisfactory level of internal consistency (Ramayah, Cheah, Chuah, Ting, & Memon, 2018).

In terms of convergent validity, the AVE scores demonstrated that all constructs were above 0.5, denoting adequate convergent validity (Hair et al., 2017). For discriminant validity, the cross-loading analysis indicates that all items' loadings on the related constructs are higher than those on the other constructs. Therefore, it can be concluded that the different constructs' indicators are not interchangeable. These results demonstrate excellent discriminant validity (Henseler, Ringle, & Sarstedt, 2015). Table 3 displays the Fornell-Larcker Criterion's results, which established that each construct adequately explained the variance of its own items compared to the variance of other constructs. The empty cell in the table reflects that "the AVEs of formatively measured constructs should not be compared with the correlations. In fact, the AVEs are not even reported for formative constructs in SmartPLS" (Hair et al., 2017). Finally, the results reveal that the HTMT excludes the value of 1, indicating that discriminant validity has been established.

Table 3. Fornell-Larcker criterion results.

Variables	Age	Credit over-spending	Expected over-spending	Income	Income over-spending	Mental accounting	Wasatiyyah
Age							
Credit over-spending	0.062	1.000					
Expected over-spending	0.240	0.121	1.000				
Income	0.373	-0.184	0.060				
Income over-spending	0.098	0.038	0.356	0.021	1.000		
Mental accounting	0.066	0.021	0.143	0.081	0.054		
Wasatiyyah	0.116	-0.184	0.092	0.162	0.097	0.385	0.714

Next, the R squares (R2) for the model using bootstrapping before the moderation effect of wasatiyyah on the relationship between mental accounting and all the overspending behaviour constructs were tested. The results in Table 4 show that the R2s for income overspending, expected overspending, and credit overspending were 0.039,

0.090, and 0.114, respectively. These results demonstrate a poor explanation for income overspending and expected overspending, while the independent variable offers a moderate explanation for credit overspending.

Subsequently, the structural equation modelling with the wasatiyyah moderation effect was carried out using bootstrapping. The analysis results in Table 4 display that all overspending behaviours constructs have an increase in the R2 value, respectively, for income overspending, expected overspending, and credit overspending. Although the income overspending and expected overspending are still poorly explained and the credit overspending is still moderately explained by the independent variables, the changes in the R2 value signify the potential role played by wasatiyyah as a moderator in the relationship between mental accounting and overspending behaviours' constructs.

Table 4. R squares results.

Dependent variables	R² before moderation effect	R² after moderation effect
Income overspending	0.039	0.087
Expected overspending	0.090	0.096
Credit overspending	0.114	0.136

4.3. Hypotheses Testing

The summary of results is displayed in Table 5. Five hypotheses were supported: H1b, H1c, H2c, H3b, and H3c. The findings show that age has a significant positive impact on expected overspending (β = 0.197; p-value = 0.008) and credit overspending (β= 0.162; p-value = 0.035), while having no effect on income overspending (p-value = 0.107). The result signifies that the older the respondents, the higher their expected credit overspending behaviour. Hence, H1b and H1c are supported. However, age does not affect the respondents' overspending behaviour in terms of income. As such, H1a was not accepted.

Table 5. Summary of results.

Hypotheses		Path coefficient, β	t values	P values	Decision
H1a	Age -> Income overspending	0.103	1.246	0.107	Unsupported
H1b	Age -> Expected overspending	0.197	2.418	0.008*	Supported
H1c	Age -> Credit overspending	0.162	1.819	0.035**	Supported
H2a	Income -> Income overspending	-0.032	0.383	0.351	Unsupported
H2b	Income -> Expected overspending	-0.072	0.950	0.171	Unsupported
H2c	Income -> Credit overspending	-0.242	3.414	0.000*	Supported
H3a	Mental accounting -> Income overspending	0.061	0.750	0.227	Unsupported
H3b	Mental accounting -> Expected overspending	0.131	1.713	0.044**	Supported
H3c	Mental accounting -> Credit overspending	0.121	1.520	0.065***	Supported
H4a	Mental accounting*wasatiyyah -> Income overspending	-0.223	1.073	0.142	Unsupported
H4b	Mental accounting*wasatiyyah -> Expected overspending	0.079	0.571	0.284	Unsupported
H4c	Mental accounting*wasatiyyah -> Credit overspending	0.133	0.705	0.241	Unsupported

Note: * At 1% significance level; ** At 5% significance level; *** At 10% significance level.

Meanwhile, H2c is supported, signifying that income level has a significant negative effect on credit overspending behaviour (β= -0.242; p-value = 0.000). The result indicates that the lower the income level, the higher the respondents' credit overspending behaviour. On the other hand, income level has no significant effect on income overspending (- value = 0.351) and expected overspending (p-value = 0.171). These results indicate that income level does not cause income and expected overspending behaviour of the respondents. As such, H2a and H2b are not supported.

In addition, Table 5 displays that mental accounting has a significant positive effect on expected overspending behaviour (β= 0.131; p-value = 0.044) and credit overspending behaviour (β= 0.121; p-value = 0.065). These results demonstrate the connection between these constructs and denote that the higher the level of mental accounting of the respondents, the higher their expected and credit overspending behaviour. Therefore, H3b and H3c are accepted. In contrast, mental accounting has no significant effect on income overspending behaviour (p-value = 0.227). This means that mental accounting does not cause the respondents to exhibit income-overspending behaviour. Hence, H3a is not supported.

Finally, the results show that wasatiyyah has no moderating effect on the relationships between mental accounting and the respondents' overspending behaviour (income overspending: p-value = 0.142; expected overspending: p-value = 0.284; credit overspending: p-value = 0.241). As such, H4a–45c are not supported.

Nonetheless, based on the main effect analysis, wasatiyyah is found to have a significant negative effect on credit overspending behaviour (β= -0.201; p-value = 0.017), indicating that the higher the level of wasatiyyah of the respondents, the less they would engage in credit overspending behaviour. This finding is essential as it shows the direct impact of wasatiyyah on overspending behaviour instead of only its indirect role as a moderator, as predicted by this study.

5. DISCUSSION AND CONCLUSION

This study aims to examine the overspending behaviour among Muslims using a mental accounting approach. This study took into consideration the role of the wasatiyyah concept in influencing the relationship between mental accounting and overspending behaviour. Findings from this study provided several key insights. First, age and income level showed mixed findings. Age was significantly associated with expected and credit spending. This relationship showed a positive impact, suggesting that older Muslims are more inclined to exceed their normal spending. When they exceeded their normal expenditures, it could lead them not to pay off credit debts. This could be attributed to higher commitments and expenditures among older Muslims. This result affirmed a study by Ming-Yen Teoh et al. (2013), who unearthed that older people in Malaysia had greater spending on their credit cards compared to younger users who had fewer credit cards. They argued that older people had financial freedom; hence, they had high purchasing power.

The level of income result had a negative and significant relationship with credit overspending only and not with the other two types of overspending. It showed that low-income Muslim earners did not regularly pay off credit debts. This inability is probably due to their higher debts than their earnings. Low education, financial literacy, and money management were perceived as contributing to high debts among low-income households (Chichaibelu & Waibel, 2018; French & McKillop, 2016). In addition, the earnings and savings of high-income earners enabled them to settle their debts. This finding validated the one by Othman et al. (2020). Di Domenico et al. (2022) relate it to the ability of high-income people to manage their financial affairs.

Second, mental accounting significantly influenced both expected and credit overspending, although the relationship was positive. Our study exhibited that allocating budgets into "mental accounts", such as saving and spending categories, increased overspending behaviour. By practising mental accounting, Muslims were unable to control their budgets by spending more than normal or not paying off debts, which differed from previous research mentioning that people who followed a mental accounting approach might have self-control (Hou et al., 2021) by not spending above their normal expenditures and having no difficulty paying their debts, or that mental accounting could prevent people from impulsive and unplanned spending (Stilley et al., 2010).

Our results contradicted prior studies such as Mahapatra and Mishra (2020), Huebner et al. (2020), and Zainal Alam et al. (2022), who found a significant effect of mental accounting on financial decisions and saving behaviour. Even mental accounting can help people manage their finances, but some people may use their budget for unlisted purposes. Furthermore, the majority of respondents identified the age range of middle- to older adults and low-

income earners as groups prone to impulsive spending beyond their budgets. Particularly, based on a mean score of 52.7% and 6%, respondents had difficulty spending below expectations and paying their debts.

Third, income overspending was not affected by any of the variables, which was unlike the findings of Sui et al. (2021), who discovered that mental accounting was correlated with three types of overspending. Specifically, age, income level, and mental accounting do not correlate with income overspending. These results indicated that people can spend more than they earn, regardless of their background and with or without personal financial planning.

Fourth, this study indicated that wasatiyyah had no impact on mental accounting and overspending behaviour. It did not strengthen the connection between these variables. However, it had a significant direct relationship with credit overspending behaviour. This finding could explain the likelihood of people controlling their overspending through the wasatiyyah trait, which was insignificant, but it supported the concept of wasatiyyah as a way to control debts and credit management. It supported the findings of Wan Husain et al. (2021), who showed that wasatiyyah had a direct influence on financial decisions rather than having an intervention effect. It is interesting to note that both our findings and the aforementioned research concluded that wasatiyyah had a major influence when considered as an independent variable rather than an intervening factor. Finally, in terms of overspending behaviour categories, as reflected in the mean scores, people were inclined to spend more than their income and exceeded their normal expenditures.

In conclusion, this study contributes to the body of knowledge and addresses gaps in overspending behaviour that have been given less attention, especially among the Muslim community. Research on the topic of overspending behaviour among Muslims is relevant to understanding why Muslims have a problem controlling their spending and following Islamic laws. Islam encourages Muslims to practise moderation, or wasatiyyah, in all aspects of their lives; hence, by practising it, Muslims should not be burdened by over-indebtedness and spending.

Although in this study, wasatiyyah may not empower mental accounting and overspending, it is nonetheless a tactful way to monitor a Muslim's debt management. It can help Muslims gain greater control over their financial issues and assist them in having a healthy financial well-being, as promoted by the United Nations' Sustainable Development 3. Also, this study found that age and income level have an impact on overspending behaviour although in different categories. This behaviour could be controlled if Muslims practiced mental accounting by planning and preparing budgets for their savings and expenditures. Understanding the social-demographic factors could help the government monitor vulnerable groups and give attention to programs that could enhance their financial literacy and social support.

Theoretically, mental accounting is pertinent as a tool to develop self-discipline and self-control in spending. As reported, credit card debts, personal car loans, and insufficient knowledge of personal financial management are the reasons for high bankruptcy rates in Malaysia (Badrul Huzaini, 2019; Hoo, 2020). An important factor influencing credit card holders' spending is the rewards and payment facilities offered by the banks (Ming-Yen Teoh et al., 2013).

This study comes with limitations and can be considered for future research. First, the role of wasatiyyah was not addressed as a direct variable in overspending behaviour. Second, the tools used to measure the wasatiyyah were based on a single piece of literature. They may not accurately reflect the meaning of the wasatiyyah, which is another reason why the correlation is not very strong. Thus, more research studies from different researchers should be taken into consideration to reflect the holistic meaning of wasatiyyah.

REFERENCES

Achtziger, A. (2022). Overspending, debt, and poverty. *Current Opinion in Psychology, 46,* 101342. https://doi.org/10.1016/j.copsyc.2022.101342

Antonides, G., De Groot, I. M., & Van Raaij, W. F. (2011). Mental budgeting and the management of household finance. *Journal of Economic Psychology, 32*(4), 546-555. https://doi.org/10.1016/j.joep.2011.04.001

Badrul Huzaini, N. (2019). *60 percent of bankrupts are young people - world bank daily news.* Retrieved from https://www.bharian.com.my/bisnes/lain-lain/2019/12/637714/60-peratus-muflis-adalah-golongan-muda-bank-dunia

Bae, M., Hanna, S., & Lindamood, S. (1993). Patterns of overspending in US households. *Financial Counseling and Planning, 4*(1), l-30.

Bakir, M., & Othman, K. (2017). Wasatiyyah Islamic moderation. *Journal of Islamic Thought and Civilization, 7*(1), 13-30.

Biplob, H., & Abdullah, M. F. (2021). The concept of wasatiyyah in consumption: An analysis from Islamic financial jurisprudence. *ICR Journal, 12*(1), 11-26. https://doi.org/10.52282/icr.v12i1.810

Brounen, D., Koedijk, K. G., & Pownall, R. A. (2016). Household financial planning and savings behavior. *Journal of International Money and Finance, 69,* 95-107. https://doi.org/10.1016/j.jimonfin.2016.06.011

Cheema, A., & Soman, D. (2006). Malleable mental accounting: The effect of flexibility on the justification of attractive spending and consumption decisions. *Journal of Consumer Psychology, 16*(1), 33-44. https://doi.org/10.1207/s15327663jcp1601_6

Chichaibelu, B. B., & Waibel, H. (2018). Over-indebtedness and its persistence in rural households in Thailand and Vietnam. *Journal of Asian Economics, 56,* 1-23. https://doi.org/10.1016/j.asieco.2018.04.002

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches* (4th ed.). Thousand Oaks: SAGE Publication.

Di Domenico, S. I., Ryan, R. M., Bradshaw, E. L., & Duineveld, J. J. (2022). Motivations for personal financial management: A self-determination theory perspective. *Frontiers in Psychology, 13,* 977818. https://doi.org/10.3389/fpsyg.2022.977818

French, D., & McKillop, D. (2016). Financial literacy and over-indebtedness in low-income households. *International Review of Financial Analysis, 48,* 1-11. https://doi.org/10.1016/j.irfa.2016.08.004

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Thousand Oaks, CA: Sage Publications Inc.

Hanapi, M. S. (2014). The wasatiyyah (moderation) concept in Islamic epistemology: A case study of its implementation in Malaysia. *International Journal of Humanities and Social Science, 9*(1), 51-62.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hoo, E. (2020). *Are we staring at a bankruptcy storm the sun daily.* Retrieved from https://www.thesundaily.my/local/are-we-staring-at-a-bankruptcy-storm-MN2690835

Hou, L., Hsueh, S.-C., & Zhang, S. (2021). Digital payments and households' consumption: A mental accounting interpretation. *Emerging Markets Finance and Trade, 57*(7), 2079-2093. https://doi.org/10.1080/1540496X.2021.1887727

Huebner, J., Fleisch, E., & Ilic, A. (2020). Assisting mental accounting using smartphones: Increasing the salience of credit card transactions helps consumer reduce their spending. *Computers in Human Behavior*, *113*, 106504. https://doi.org/10.1016/j.chb.2020.106504

Islam, R., Ali, M. Y., & Osmani, N. M. (2021). Time management for better job performance: An analysis from al-wasatiyyah perspective. *Asian Academy of Management Journal*, *26*(1), 171-196. https://doi.org/10.21315/aamj2021.26.1.7

Kamali, M. H. (2014). A lifestyle of moderation, or wasatiyyah: The Islamic perspective. *ICR Journal*, *5*(1), 7-24. https://doi.org/10.52282/icr.v5i1.419

Lebdaoui, H., & Chetioui, Y. (2021). Antecedents of consumer indebtedness in a majority-Muslim country: Assessing the moderating effects of gender and religiosity using PLS-MGA. *Journal of Behavioral and Experimental Finance*, *29*, 100443. https://doi.org/10.1016/j.jbef.2020.100443

Mahapatra, M., Raveendran, J., & De, A. (2018). Are financial plans orchestrated by mental accounts? An empirical investigation into the role of mental accounting on personal financial planning. *In 2019 Academic Research Colloquium for Financial Planning and Related Disciplines.*

Mahapatra, M., Raveendran, J., & De, A. (2021). *Are financial plans orchestrated by mental accounts? An empirical investigation into the role of mental accounting on personal financial planning. Global Business Review, 20*(4), 996–1009.

Mahapatra, M. S., & Mishra, R. (2020). Behavioral influence and financial decision of individuals: A study on mental accounting process among Indian households. *Cogent Economics & Finance*, *8*(1), 1827762. https://doi.org/10.1080/23322039.2020.1827762

Md. Sapir@ Md. Shafik, A. S., & Wan Ahmad, W. M. (2020). Financial literacy among Malaysian Muslim undergraduates. *Journal of Islamic Accounting and Business Research*, *11*(8), 1515-1529. https://doi.org/10.1108/JIABR-10-2017-0149

Meerangani, K. A., Abdul Hamid, M. F., & Ramli, M. A. (2022). Application of wasatiyyah in the social interaction of plural society in Malaysia. *Journal of Academic Research in Business and Social Sciences*, *12*(1), 1553-1562. http://dx.doi.org/10.6007/IJARBSS/v12-i1/12045

Milkman, K. L., & Beshears, J. (2009). Mental accounting and small windfalls: Evidence from an online grocer. *Journal of Economic Behavior & Organization*, *71*(2), 384-394. https://doi.org/10.1016/j.jebo.2009.04.007

Ming-Yen Teoh, W., Chong, S. C., & Mid Yong, S. (2013). Exploring the factors influencing credit card spending behavior among Malaysians. *International Journal of Bank Marketing*, *31*(6), 481-500. https://doi.org/10.1108/IJBM-04-2013-0037

Ming, Y., Li, C., & Chen, J. (2020). Acquisition mode and credit card overspending behavior: An empirical analysis of the credit card industry. *Journal of Consumer Affair*, *55*(1), 232-253.

Muehlbacher, S., & Kirchler, E. (2019). Individual differences in mental accounting. *Frontiers in Psychology*, *10*, 2866. https://doi.org/10.3389/fpsyg.2019.02866

Mujani, W. K., Rozali, E. A., & Zakaria, N. J. (2015). The wasatiyyah (Moderation) concept: Its implementation in Malaysia. *Mediterranean Journal of Social Sciences*, *6*(4), 66-72. https://doi.org/10.5901/mjss.2015.v6n4s2p66

Othman, Z. A., Bakar, A. A., Sani, N. S., & Sallim, J. (2020). Household overspending model amongst B40, M40 and T20 using classification algorithm. *International Journal of Advanced Computer Science and Applications*, *11*(7). https://doi.org/10.14569/ijacsa.2020.0110751

Ramayah, T. J. F. H., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). Partial least squares structural equation modeling (PLS-SEM) using smartpls 3.0. *An Updated Guide and Practical Guide to Statistical Analysis*, 967-978.

Ramlee, R., Syed Mohd Zain, S. R., & Wan Husain, W. R. (2019). Are muslims practising moderation in their financial decisions? *Asian Academy of Management Journal*, *24*(Supp. 1), 157–170. https://doi.org/10.21315/aamj2019.24.s1.11

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). London: Pearson Education Ltd.

Sekaran, U. (2000). *Research methods for business*. United States of America: John Wiley & Sons.

Shah, M. U. D., Khan, I. U., & Khan, N. U. (2024). The role of digital payments in overspending behavior: A mental accounting perspective. *International Journal of Emerging Markets*. https://doi.org/10.1108/IJOEM-08-2023-1313

Shefrin, H. M., & Thaler, R. H. (1992). Mental accounting, saving, and self-control. in G. Loewenstein and J. Elster (eds), Choice over time. In (pp. 287–330). New York: Russell Sage Foundation.

Singh, V. K., Freeman, L., Lepri, B., & Pentland, A. S. (2013). *Predicting spending behavior using socio-mobile features.* Paper presented at the In 2013 International Conference on Social Computing, 174-179. https://doi.org/10.1109/SocialCom.2013.33

Soman, D. (2001). The mental accounting of sunk time costs: Why time is not like money. *Journal of Behavioral Decision Making, 14*(3), 169-185. https://doi.org/10.1002/bdm.370

Stilley, K. M., Inman, J. J., & Wakefield, K. L. (2010). Spending on the fly: Mental budgets, promotions, and spending behavior. *Journal of Marketing, 74*(3), 34-47. https://doi.org/10.1509/jmkg.74.3.034

Sui, L., Sun, L., & Geyfman, V. (2021). An assessment of the effects of mental accounting on overspending behaviour: An empirical study. *International Journal of Consumer Studies, 45*(2), 221-234. https://doi.org/10.1111/ijcs.12613

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science, 4*(3), 199-214. https://doi.org/10.1287/mksc.4.3.199

Thaler, R. H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making, 12*(3), 183-206.

The RinggitPlus. (2020). Malaysian financial literacy survey.

Wan Husain, W. R., Ramlee, R., Zain, S. R. S. M., & Jan, M. T. (2021). The impact of wasatiyyah/moderation on student's financial decisions. *Malaysian Journal of Consumer and Family Economics, 26*(1), 230-250.

Zainal Alam, M. A. Z., Yong, C. C., & Mansor, N. (2022). Predicting savings adequacy using machine learning: A behavioural economics approach. *Expert Systems with Applications, 203*, 117502. https://doi.org/10.1016/j.eswa.2022.117502

Zainudin, R., Mahdzan, N. S., & Yeap, M.-Y. (2019). Determinants of credit card misuse among Gen Y consumers in urban Malaysia. *International Journal of Bank Marketing, 37*(5), 1350-1370. https://doi.org/10.1108/IJBM-08-2018-0215

Zan, H., & Hanna, S. D. (2008). *Racial/ethnic discrepancies in household overspending.* Paper presented at the Proceedings of the Academy of Financial Services.

Zhang, C. Y., & Sussman, A. B. (2018). Perspectives on mental accounting: An exploration of budgeting and investing. *Financial Planning Review, 1*(1-2), e1011. https://doi.org/10.1002/cfp2.1011