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AN EMPIRICAL STUDY ON INFLUENCE OF DEMOGRAPHIC VARIABLES ON MENTAL ACCOUNTING PROCESS IN INDIAN HOUSEHOLDS

Dr. Sonam Arora
Assistant Professor, LJ University, Ahmedabad

Dr. Diksha Sisodia
Associate Professor, Narayana Business School, Ahmedabad

Abstract
A number of studies have identified the various behavioral aspects of investment and financial decision making. Mental Accounting is one of behavioural aspects used by individual, households to organize, track and evaluate their income and spending. This study aims to identify the presence of mental accounting process in Indian households. The research first determines the existence of mental accounting system by replicating the concept of reference point through integration and segregation of gain and loss in Indian households with the help of vignettes. The results showed that mental accounting induce integration of losses and gains which occur at same time, also segregate small losses from higher gains. Secondly, it investigates whether there are any differences in mental accounting processes based on different demographic variables i.e. gender, age, education, income and occupation. The result shows different education level and income levels have a significant influence on the process of Mental Accounting.
Keywords: Mental Accounting, Mental Budgeting, Prospect Theory, Households, Vignettes
JEL Classification Code: G12, G24, G41,

1. Introduction

Traditional finance holds wealth in general and regarded money as a "fungible". They assumed that every financial decision is based on rational calculation. However in reality, it is difficult to estimate the effect of every small decision on overall wealth financially as well as emotionally. People generally divide money into different heads and treat them differently. Behavioural economist Richard Thaler published a paper "Mental Accounting Matters" in which he noted that people place the value of money differently. He explained mental accountings as "the set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities" (Thaler, 1999). The process of dividing assets into designated specific purpose accounts is considered as Mental Accounting (Shefrin & Thaler, 1992) and are assumed to serve (at least) three purposes: to simplify decisions, to keep self-control when facing tempting consumption opportunities, and to maximize hedonic pleasure from decision outcomes (Antonides & Ranyard, 2017). This theory is considered significance in the sense that it helps in explaining individual economic behaviour (Mahapatra & Mishra, 2020). When an individual makes an attempt to organize savings and limit expenditure, then it causes the development of mental accounts and is beneficial to the investor self-control (Statman, 1999). From the academic perspective, simplification of financial

decision by the process of Mental Accounting is its key advantage (Heath & Soll, 1996). Prior researchers argued that the process of mental accounting is quite similar to the cognitive principal of categorization (Henderson & Peterson, 1992).

Over the period of time Mental Accounting is correlates with number of financial disciples and behaviors such as, household spending (Zhang & Sussman, 2017), savings behavior (Xiao & Olson, 1993), purchase decision (Kim & Gupta, 2009), stock markets decisions (Barberis & Huang, 2002), gambling (Cowley, 2008), tax compliances (Muehlbacher & Kirchler, 2013), budgeting process (Xiao & O'Neill, 2018), credit card usage (Ranyard, Hinkley, Williamson, & McHugh, 2006), money management (Antonides, Groot, & Raaij, 2011) etc.
The majority of empirical study on mental accounting focuses on its broad behavioural impacts. Individual differences in mental accounting and effect of demographics, socio-economic aspects on individual differences have only been studied in a few cases. The present research work seeks to fill this gap by assessing influence of Demographic variables on Mental Accounting process in Indian households. The research first determines the existence of mental accounting system in Indian households with the help of vignettes. Further it investigates whether there are any differences in mental accounting processes based on different demographic variables. The rest of the paper is organized as: Section 2 discusses brief literature review; section 3 discusses research methodology, sampling and data collection; section 4 presents the analysis of data; section 5 concludes the study.

2. Literature Review

The mental accounting concept is widely studied with different dimensions. It is a rich and descriptive theory about the way humans make economic decisions and the way schemes about money and spending are set up. Grouping funds into different categories, or “accounts” is a defining element of mental accounting. Within the domain of consumer finance, categorizing funds can facilitate the processing of information for evaluating financial decisions (Zhang & Sussman, 2018). Though cognitive efforts associated with financial decision making is reduced when the categorization of funds is done but it introduces systematic errors which tend to violate economic principle of fungibility (Abeler & Marklein, 2017).
Shefrin and Thaler (1988) suggest that wealth is divided into three mental accounts—current income, current assets, and future income—and that the temptation to spend is greatest for current income and least for future income. These accounts appear to exist in a hierarchy whereby current income is the most basal to consumers, followed by current assets and lastly future income (Kitces, 2017). This notion is supported by research which has shown that current assets, such as funds in checking and savings accounts, are positively associated with subjective well-being (Puri & Robinson, 2007), even after controlling for the value of consumers’ investments (Ruberton, Gladstone, & Lyubomirsky, 2016). This can be understood by historical example of Diwali purchase, where people used to save the money beforehand to spend on diwali presents. Even when funds are categorized only by the method of payment used (cash or credit) (Soman, 2003), differences in the marginal propensity to spend occurs (Ameriks, Caplin,

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& Leary, 2013).

Previous studies consistently find that people are more prone to spend their extra earnings than regular income (Zhang C. , 2016). This extra income is mostly spending on luxuries. The other important researched categories are usage period (Sussman & Olivola, 2011), intend of use (Hastings & Shapiro, 2013) or framing categories with different reference point (Genesove & Mayer, 2001) such as gain/loss, relative/absolute value, nominally different mental accounts and the situation of irreversible costs (Frisch, 1993). Due to different mental accounts, studies have shown that utilization associated with each account is apparently different.

Thus, individuals create mental accounts for their different assets causing their marginal propensities (Levin, 1998) to consume from those assets to vary with the level of temptation associated with each one (Shefrin & Thaler, 1981). Another reason for creating mental accounts is "impatience" among consumers which fragmented them under the category of farsighted planner or myopic doer (Arora, 2022).

Further the segregation of funds and making budgets can simplify the financial planning (Thaler, 1999), helping a household to stay on track (Rick, Cryder, & Loewenstein, 2007), narrow done the set of choices (Heath & Soll, 1996) and increase financial discipline (Shefrin & Thaler, 1988). On the contrary wrong segregation leads to error in decision making (Cheema & Soman, 2006). Secondary the absence of motivation to follow budgeting rules (Imas, Loewenstein, & Morewedge, 2017), expenses that are hard to classify (Sussman, Sharma, & Alter, 2015), exceptional expenses (Gourville, 1998), potential mismatch of timings (timings of budget prepared and executed) (Hastings & Shapiro, 2013) also leads to error.

Thus in the present study we considered four components: current assets, current income & expense, future income and mental budgeting as the apparatus to study the process of mental accounting among households. There is enough literature available on the usage of above mentioned components for mental accounting.

2.1 Mental Accounting and Demographics

There are growing amount of researches which highlight the impact of demographics on behaviour biases. Due to a lack of rationality, individual behaviour in making decisions is influenced by behavioural bias, resulting in irrational conclusions (Byrne & Brooks, 2008). Mental accounting is also a type of behavioural bias. This section present the previous studies that correlates to the socio demographics with mental accounting. According to Baker et al. (2018) males are more likely include in mental accounting than females. These results are quite contradictory from the study of Antinodes et al. (2011) which stated that females are more likely to engage in mental accounting activities. Furnharm (1984) argues men are quite obsessed with money whereas women are cautious. In terms of age, few studies have reported a positive correlation (Muehlbacher & Kirchler, 2013), while few others reported no relation (Antinodes et al. 2011; Olsen et al. 2019). Baker et al. (2018) found in their research that individuals having higher education level are less prone towards mental accounting as compared to less educated people. These findings are in line with Antinodes et al. (2011)

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results. In terms of occupation, Venice et al. (2021) found those individuals who are into financial jobs are more prone towards mental accounting compared to non financial professionals. The number of entrepreneurs was found to be negatively connected to mental accounting in a survey of self-employed entrepreneurs (Muehlbacher & Kirchler, 2013). Further income has positive correlation with mental accounting (Olsen et al., 2019; Sarkar & Sahu, 2018; Muehlbacher & Kirchler, 2019).

3. Methodology

3.1 Objective: The main objective of the present research is to investigate the influence of demographic variables on mental accounting process in Indian households. For constructing mental accounting process we used four constructs i.e. current assets, current income & expenses, future income and mental budgeting.

The following objectives are framed for the study:

- To study individual perception of gains and losses by the use of vignettes.
- To study the effect of demographics on Mental Accounting in decision making

3.2 Data Set: The study considers the earning members of the family as the population of the study mainly conducted in the Gujarat and Rajasthan State. A structured questionnaire has been created using Google form and circulate online and offline both. The questionnaire is uploaded on various social media platforms to get responses and hardcopy of the same is also distributed to respondents. Total 400 samples were collected out of these, 330 complete/ valid responses were received which have been further considered for analysis. For sampling purpose, convenient and snowball techniques were used.

3.3 Questionnaire design: The questionnaire is design in two methods: asking questions in the form of vignettes and assessing the impact of demographics on mental accounting through scale items. Vignettes are hypothetical scenarios. The method of vignettes is quite popular in medical, psychology (Schoenberg & Ravdal, 2000), social science (Jensen et. al, 2019), mental health (Barter & Renold, 2000), cross culture studies (Richman & Mercer, 2002) and other complex scenarios. In the present study vignettes are considered as reference to determine the perception or attitude of an individual. We designed four such vignettes which determine the segregation and integration of gain and loss both. Each situation describes Mr. X and Mr. Y as a separate person and respondent's preference in each scenario given to them.

For the purpose of analysis of scale items, SPSS has been used and the data is analyzed accordingly. The data has been analyzed for Reliability with Cronbach's Alpha value of 0.862. The table below shows that the questionnaire is reliable and can be taken further for analysis.

Cronbach's Alpha	No. of Items
0.862	17

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3.4 Sample Profile

A brief profile of the sample indicates that female participants (51.51%) are little more in number comparing to the male (48.49%). Almost 47% of them are between the age group of 20 years to 30 years. 44.84% respondents are from the age group of 31 years to 40 years. There are 4.23% participants are from the age group of 41 years to 50 years and 3.93% are above 51 years and above age group. It can also be noticed that most of the respondents are post graduate (44.84%) with private employment (46.98%) and self employed (35.75%). A large number of the respondents (35.75%) indicate their annual family income to be less than Rs. 5 lakh (see Table 1).

Table 1 Sample Profile

	Parameter	Sub parameter	Frequency	Percentage
1	Gender	Male	160	48.49
		Female	170	51.51
2	Age	20-30 Years	155	47
		31-40 Years	148	44.84
		41-50 Years	14	4.23
		51 Years and above	13	3.93
3	Education	Graduate	73	22.12
		Post Graduate	148	44.84
		Professional	47	14.24
		Doctorate	62	18.78
4	Occupation	Business & Self Employed	118	35.75
		Government Employee	57	17.27
		Private Employee	155	46.98
5	Family Income	Less Than 5 Lakhs pa	118	35.75
		5 - 10 Lakhs pa	92	27.87
		10 - 15 Lakhs pa	92	27.87
		More than 15 Lakhs pa	28	8.48

4. Result Analysis

The study analyzes and present results in two parts. Part I of the study discusses the individual perception of gains and losses by the use of vignettes. With the help of vignettes we studies four concepts: segregation of gains, segregation of small loses, integration of small gains and integration of small losses. Part II of the presents the effect of demographics on mental accounting construct.

Part I Analysis

The study uses rate of recurrence to analyze the preference of respondents in four scenarios given to them. These scenarios are designed by intriguing orientation from past literature. The detail of the each vignette is given below:

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a. Segregation of losses

The study analyzes household evaluating financial decision based on mental accounting. The small loss is more painful than higher gain. To evaluate the same, below mentioned vignette is created.

Situation: 1	
Mr. X received a cash bonus of Rs. 10000 in the morning and in the evening his car was damaged in the parking lot. He had to spend Rs. 15000 on the same. Mr. Y's car was damaged in the parking lot and he had to spend Rs. 5000 on repairing it. In your view, who was more upset?	
Mr. X	58.48% (193 respondents)
Mr. Y	41.52% (137 respondents)

The result concludes that most of respondents (58.43%) agree that Mr. X was to be more upset than Mr. Y. Although in both the situation the loss was of Rs. 5000 but Mr. X is more upset as he is not able to enjoy the cash bonus. This shows that mental accounting induce segregation of small losses from higher gain. The result supports the same.

b. Integration of losses

The important aspect in mental accounting is tendency to integrate losses occur in similar time frame (on same day or same month). The integration of losses is more painful which is against the economic utility principle. To evaluate the same, the following scenario has been created:

Situation 2	
Mr. X received an email from the Income Tax department stating that he made a mistake in tax filing and defaulted of Rs. 1000 and needed to pay it. On the same day, he received mail from an insurance company stating that he owed Rs. 1700 for a mistake in online payment. There were no other repercussions from both mistakes. Mr. Y received an email from the Income Tax department stating that he made a mistake in tax filing and defaulted of Rs. 3000. There were no other repercussions from your mistake. In your view, who was more upset?	
Mr. X	65.51% (215 respondents)
Mr. Y	34. 84 % (115 respondents)

The result concludes that most of respondents (65.51%) agree that Mr. X was to be more upset than Mr. Y although less amount of liability. The fact that Mr. X received two notice on the same day make him more unhappy compare to one notice received by Mr. Y. Here the frequency of pain (caused by loss) plays an important role compare to the actual money value. This is against the rational economics and shows the presence of mental accounting among household.

c. Integration of small gains

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The phenomena of "integration of gains received on same day" also assessed in present study by creating a scenario mentioned below;

Situation 3	
Mr. X went for grocery buying and got a discount of Rs. 850. Mr. Y went grocery shopping and got a discount of Rs. 500 and on the same day he went for personal shopping and got a discount of Rs. 350. Who was happier?	
Mr. X	14.55 % (48 respondents)
Mr. Y	85.45 % (282 respondents)

Mr. X and Mr. Y received the gain in the form of discount. Mr. X received one gain whereas Mr. Y received two gains. The monetary benefit is same for Mr. X and Mr. Y still 85.45% respondents feels that Mr. Y was happier. The result shows that individual integrate the gains received on similar day. The above results support the presence of mental accounting among Indian households.

d. Segregate small losses from higher gains

The study also analyzed the phenomena of "segregating small losses from higher gains". To evaluate the same following scenario is created.

Situation 4	
Mr. X sold his share to make a profit of Rs. 15000. Also in a freak accident he damaged his bike and incurred Rs. 7000 as expenditure. Mr. Y sold his share and made a profit of Rs. 8000. Who was happier?	
Mr. X	16.36 % (54 respondents)
Mr. Y	83.64 % (276 respondents)

The result concludes that Mr. Y is happier as he gains the profit of Rs. 8000, whereas Mr. X gains Rs. 15000. The reason for Mr. X to be less happy is segregation of small loss of Rs. 7000 from higher gain of Rs. 15000. The above result support that mental accounting induce segregation of small loss from higher gains.

Part 2: Understanding effect of demographics on Mental Accounting

For the purpose of identifying the effect of demographics on the Mental Accounting, MANOVA has been carried out using SPSS on the scale items. Demographics as an independent variable is identified by gender, age group, education level, occupation and family income levels. Other than gender, all other variables have more than 2 categories.

Mental Accounting is measured with respect to mental budgeting (MB), current assets (CA), current income (CI) and future income (FI). The measurement scale of mental accounting for financial decision making has been referenced from Mahapatra & Mishra (2020) and a 17 items scale has been used.

SPSS output for MANOVA produces four different test results - Pillai's Trace, Wilks' Lambda,

Hotelling's Trace and Roy's Largest Root. The most commonly used test is Wilks' Lambda for the purpose of analysis and is generally reported instead of other values.

a. Gender and Mental Accounting

$H1_0$: There is a no significant difference in Mental Accounting between Male and Female.
H1a: There is a significant difference in Mental Accounting between Male and Female.
Gender is an independent variable having two categories and Mental Accounting is measured with respect to mental budgeting, current assets, current income and future income.

Test	Value	F	Sig	Partial Eta Squared
Pillai's Trace	0.017	1.424	0.226	0.017
Wilks' Lambda	0.983	1.424	0.226	0.017
Hotelling's Trace	0.018	1.424	0.226	0.017
Roy's Largest Root	0.018	1.424	0.226	0.017

Wilks' Lambda = 0.983 and p value is 0.226. Thus, it is concluded that Gender has no significant influence on the process of Mental Accounting. The results are in lined with Beatrice et al. (2021), who find that there is no significant impact of gender on Mental Accounting.

b. Age Groups and Mental Accounting

$H2_0$: There is a no significant difference in Mental Accounting amongst different age groups.
H2a: There is a significant difference in Mental Accounting amongst different age groups.
Age is an independent variable having four categories and Mental Accounting is measured with respect to mental budgeting, current assets, current income and future income.

Test	Value	F	Sig	Partial Eta Squared
Pillai's Trace	0.062	1.701	0.062	0.021
Wilks' Lambda	0.939	1.706	0.061	0.021
Hotelling's Trace	0.064	1.708	0.060	0.021
Roy's Largest Root	0.045	3.679	0.006	0.043

Wilks' Lambda = 0.939 and p value is 0.061. Thus, it is concluded that different age groups has no significant influence on the process of Mental Accounting.
Our study shows different results from Baker et al. (2018) and Beatrice et al. (2021). According to Baker et al. (2018) older investors (age 45 and above as per sample) are more likely towards mental accounting whereas younger investor is more prone towards herding bias. The reason for different result can lies in sample profile. As the 91.84 percent respondent are below the age of 40 years. We can say that result may different with the change in sample profile with respect to age.

c. Education Levels and Mental Accounting

$H3_0$: There is a no significant difference in Mental Accounting amongst different Education levels.

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H3a: There is a significant difference in Mental Accounting amongst different Education levels. Education Level is an independent variable having four categories and Mental Accounting is measured with respect to mental budgeting, current assets, current income and future income.

Test	Value	F	Sig	Partial Eta Squared
Pillai's Trace	0.072	2.000	0.021	0.024
Wilks' Lambda	0.929	2.000	0.021	0.024
Hotelling's Trace	0.075	2.004	0.021	0.024
Roy's Largest Root	0.046	3.729	0.006	0.044

Wilks' Lambda = 0.929 and p value is less than 0.05. Thus, it is concluded that different education levels has a significant influence on the process of Mental Accounting. Our result is in lined with Antonides et al. (2011), Baker et al. (2018) and Beatrice et al. (2021), who showed individual having lower level of education are more inclined towards mental accounting compare to those who have higher/professionally educated.

Further, we identify Test-Between subject effects for education as shown in below table. The significant values are indicated for current assets and Mental Budgeting.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Education	MB	4.651	3	1.550	2.882	0.036	0.026
	CA	4.726	3	1.575	3.427	0.017	0.031
	CI	0.783	3	0.261	0.413	0.744	0.004
	FI	3.532	3	1.177	1.750	0.157	0.016

d. Occupation and Mental Accounting

$H4_0$: There is a no significant difference in Mental Accounting amongst different types of occupation.

H4a: There is a significant difference in Mental Accounting amongst different types of occupation.

Occupation is an independent variable having three categories and Mental Accounting is measured with respect to mental budgeting, current assets, current income and future income.

Test	Value	F	Sig	Partial Eta Squared
Pillai's Trace	0.034	1.410	0.189	0.017
Wilks' Lambda	0.966	1.406	0.190	0.017
Hotelling's Trace	0.035	1.402	0.192	0.017
Roy's Largest Root	0.021	1.679	0.155	0.020

Wilks' Lambda = 0.966 and p value is 0.190. Thus, it is concluded that different occupations have no significant influence on the process of Mental Accounting.

e. Income Levels and Mental Accounting

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$H5_0$: There is a no significant difference in Mental Accounting amongst different Income levels.
H5a: There is a significant difference in Mental Accounting amongst different Income levels.
Income Level is an independent variable having four categories and Mental Accounting is measured with respect to mental budgeting, current assets, current income and future income.

Test	Value	F	Sig	Partial Eta Squared
Pillai's Trace	0.075	2.069	0.017	0.025
Wilks' Lambda	0.927	2.068	0.017	0.025
Hotelling's Trace	0.077	2.062	0.017	0.025
Roy's Largest Root	0.044	3.540	0.008	0.042

Wilks' Lambda = 0.927 and p value is less than 0.05. Thus, it is concluded that different income levels has a significant influence on the process of Mental Accounting. Further, we identify Test-Between subject effects for education as shown in below table. The significant values are indicated for Future Income and Current assets to a limited extent.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Family Income	MB	1.646	3	0.549	1.002	0.392	0.009
	CA	3.632	3	1.211	2.614	0.051	0.023
	CI	1.768	3	0.589	0.937	0.423	0.009
	FI	5.460	3	1.820	2.730	0.044	0.025

The result, different income levels has a significant influence on the process of Mental Accounting is contour with previous research of Sarkar & Sahu (2018), who observed that higher income group people are tend to show mental accounting bias. Muehlbacher & Kircher (2019) also observed the same and concludes that higher income group people are more focused to manage their future income as there is more value are on stake. According to Beatrice at el. (2021) high income individuals have access to financial advisors or planners which leads to more access of information and knowledge and help them to find better perspective of current assets and future income.

5. Conclusion

The present research investigates the presence of mental accounting phenomena among Indian household and influence of demographic variables on mental accounting process in Indian households. The study uses four construct of mental accounting i.e. mental budgeting, current assets, current income and future income. The used constructs are in line of Behavioral Life Cycle Hypothesis given by Richard Thaler (1990). The overall study is divided among two parts.

It is clear from the part one of the study that there is a presence of process of Mental Accounting in Indian households as supported by the analysis of vignettes. Four different concept of integration and segregation of gain and loss are studied with the help of vignettes. Our study

finds that individual tend to separate as well as integrate gains from the losses. Individuals tend to be happier if the gains are more as compared to losses, even if there is a balancing out. The results are in streak of Mahapatra & Mishra ((2020).

In the second part of demographics analysis, it is concluded in this study that Education Level and Income Level influence the process of Mental Accounting. Demographic variables of Gender, Age and Occupation on the other hand do not have a significant influence on the process of Mental Accounting. Moreover, current assets and future income tend to be more significant factors for mental accounting. A reason for this could be that, individuals believe in expanding their assets and for this future income is always on their mind.

This research can be useful for individual, households and investors as well. The perceptiveness towards mental accounting will potentially leads to the better decision making process as it helps to regulate impulsive behaviour (Rabinovich & Webley, 2007) and promote self regulation (Vohs & Faber, 2007) among individual and household.

6. Limitations & Future Direction

The study has limitations in terms of lack of responses from respondents. In future it is prudent to use more responses to avoid data imbalance. Further the study is restricted to demographics only and not focusing on socio-economic aspects such as the role of family size, family type, number of earning member/s in a family etc. Personality type of an individual, emotional intelligence is another aspect which is untouched. Thus in future the study can be extended in this direction.

REFERNCES

Abeler, J., & Marklein, F. (2017). Fungibility, labels, and consumption. *Journal of the European Economic Association. Vol. 15 (1)* , 99– 127.

Ameriks, J., Caplin, A., & Leary, J. (2013). Wealth accumulation & the propensity to plan. *The Quarterly Journal of Economics. Vol. 118 (3)* , 1007–1047.

Antonides, G., & Ranyard, R. (2017). Mental accounting and economic behaviour . In R. Ranyard, *Economic Psychology* (pp. 123–138. doi: 10.1002/9781118926352.ch8). Chichester: Wiley-Blackwell.

Antonides, G., Groot, D. M., & Raaij, V. F. (2011). Mental budgeting and the management of household finance. *Journal of Economic Psychology. Vol. 32* , 546–555. doi: 10.1016/j.joep.2011.04.001.

Arora, S. (2022). A Systematic Review of Categorization, Demographics and Biases related to Mental Accounting. *Korea Review of International Studies, Vol. 15 (34)* , 203-218.

Baker, K. H., Kumar, S., & Goyal, N. (2018). How financial literacy and demographic variables relate to behavioral biases. *Managerial Finance. Vol. 45* , 124-146.

Barberis, N., & Huang, M. (2002). Mental Accounting, Loss Aversion, and Individual Stock Returns. *The Journal of Finance. Vol. 56* , 1247-1292.

Barter, C., & Renold, E. (2000). 'I wanna tell you a story':Exploring the application of vignettes in qualitative research with children and young people. . *International Journal of Social Research Methodology. Vol. 3 (4)* , 307–323. https://doi.org/10.1080/136455.

Beatrice, V., Murhadi, W. R., & Herlambang, A. (2021). The effect of demographic factors on behavioral biases. *Jurnal Siasat Bisnis. Vol. 25* .

Byrne, A., & Brooks, M. (2008). *Behavioral Finance: Theories and Evidence.* Research Foundation.

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. Vol. 16 (1)* , 33-44.

Cowley, E. (2008). The perils of hedonic editing. *Journal of Consumer Research. Vol.35* , 71–84. doi: 10.1086/527267.

Frisch, D. (1993). Reasons for framing effects. *Organizational behavior and human decision processes. Vol. 54* , 399-429.

Furnham, A. (1984). Many side of the coin: The psychology of money usage. *Personality and Individual Difference. Vol. 5* .

Genesove, D., & Mayer, C. (2001). Loss aversion and seller behavior: Evidence from the Housing Market. *The Quarterly Journal of Economics. Vol. 116 (4)* , 1233-1260.

Gourville, J. T. (1998). Pennies-a-day: The effect of temporal reframing on transaction evaluation. *Journal of Consumer Research. Vol. 24 (4)* , 395-408.

Hastings, J. S., & Shapiro, J. M. (2013). Fungibility and consumer choice: Evidence from commodity price shocks. . *The Quarterly Journal of Economics. Vol. 128 (4)* , 1449– 1498.

Heath, C., & Soll, J. B. (1996). Mental budgeting and consumer decisions. *Journal of Consumer Research. Vol. 23 (1)* , 40–52.

Henderson, P. W., & Peterson, R. A. (1992). Mental accounting and categorization. *Organizational Behavior and Human Decision Processes. Vol. 51* , 92-117.

Imas, A., Loewenstein, G., & Morewedge, C. K. (2017). Mental money laundering: A motivated violation of fungibility. *Mimeo* .

Jensen, E. J., Stum, M., & Jackson, M. (2019). What makes inheritance fair in stepfamilies? Examining perceptions and complexities. *Journal of Divorce & Remarriage. Vol. 60 (3)* , 234–252. https://doi.org/10.1080/10502556.2018.1488123.

Kim, H.-W., & Gupta, S. (2009). A comparison of purchase decision calculus between potential and repeat customers of an online store. *Decision Support Systems. Issue 47* , 477-487.

Kitces, M. (2017, February 1). *Behavioral biases and the hierarchy of retirement needs.* Retrieved October 10, 2021, from Kitces Website: https://www.kitces.com/blog/hierarchy-retirement-income-needs-and-mental-accounting/

Levin, L. (1998). Are assets fungible? Testing the behavioral theory of life-cycle savings. *Journal of Economic Behavior & Organization. Vol. 36* , 59-83.

Mahapatra, M., & Mishra, R. (2020). Behavioral influence and financial decision of individuals: A study on mental accounting process among Indian households. *Cogent Economics & Finance. Vol. 8 (1)* .

Muehlbacher, S., & Kirchler, E. (2019). Individual Differences in Mental Accounting. *Frontiers in Psychology. Vol. 18* , https://doi.org/10.3389/fpsyg.2019.02866.

Muehlbacher, S., & Kirchler, E. (2013). Mental accounting of self-employed taxpayers: on the mental segregation of the net income and the tax due. *Public Finance Analysis. Vol. 69* , 412-438.

Olsen, J., Kasper, M., Kogler, C., Muehlbacher, S., & Kirchler, E. (2019). Mental accounting of income tax and value added tax among self-employed business owners. . *Journal of Economic Psychology. Vol. 70* , 125–139. doi: 10.1016/j.joep.2018.12.007.

Puri, M., & Robinson, D. (2007). Optimism and economic choice. *Journal of Financial Economics. Vol. 86 (1)* , 71-99.

Rabinovich, A., & Webley, P. (2007). Filling the gap between planning and doing: Psychological factors involved in the successful implementation of saving intention. *Journal Of Economic Psychology, Vol. 28* , 444-461.

Ranyard, R., Hinkley, L., Williamson, J., & McHugh, S. (2006). The role of mental accounting in consumer credit decision processes. *Journal of Economic Psychology. Vol. 27* , 571-588.

Richman, J., & Mercer, D. (2002). The vignette revisited: Evil and the forensic nurse. . *Nurse Researcher. Vol. 9 (4)* , https://doi.org/10.7748/nr2002.07.9.4.70.c6199.

Rick, S. I., Cryder, C. E., & Loewenstein, G. (2007). Tightwads and spendthrifts. *Journal of Consumer Research. Vol. 34 (6)* , 767– 782.

Ruberton, P., Gladstone, J., & Lyubomirsky, S. (2016). How your bank balance buys happiness: The importance of "cash on hand" to life satisfaction. *Emotion. Vol. 16 (5)* , 575-580.

Sakar, A., & Sahu, T. (2018). Investment Behavior: Towards an Individual Centered Financial Policy in Developing Economics. *Emerald Publisher* .

Schoenberg, N. E., & Ravdal, H. (2000). Using vignettes in awareness and attitudinal research. . *International Journal of Social Research Methodology. Vol. 3 (1)* , 63–74. https://doi.org/10.1080/136455700294932.

Shefrin, H. M., & Thaler, R. H. (1992). Mental accounting, saving, and self-control. In L. &. Elster, *Choice over time* (pp. 287-330). Russell Sage Foundation.

Shefrin, H. M., & Thaler, R. H. (1988). The behavioral life-cycle hypothesis. *Economic Inquiry. Vol. 26* , 609-643.

Shefrin, H., & Thaler, R. (1981). *Gift-Giving and Mental Accounts.* Mimeo: Santa Clara University.

Soman, D. (2003). The effect of payment transparency on consumption: Quasi-experiments from the field. *Marketing Letters. Vol. 14 (3)* , 173–183.

Statman, M. (1999). Behaviorial finance: Past battles and future engagements . *Financial Analysts Journal. Vol. 55 (6)* , 18–27. https://doi.org/10.2469/faj.v55.n6.2311.

Sussman, A. B., & Olivola, C. Y. (2011). Axe the tax: Taxes are disliked more than equivalent costs. . *Journal of Marketing Research. Vol. 48* , 91-101.

Sussman, A. B., Sharma, E., & Alter, A. L. (2015). Framing charitable donations as exceptional expenses increases giving. . *Journal of Experimental Psychology: Applied. Vol. 21 (2)* , 130-139.

Thaler, R. H. (1990). Anomalies: Saving, fungibility, and mental accounts. . *The Journal of Economic Perspectives. Vol. 4 (1)* , 193-205.

Thaler, R. (1999). Mental Accounting Matters. *Journal of Behavioural Decision Making* , 183-206.

Vohs, K. D., & Faber, R. J. (2007). Spent resources: Self-regulatory resource availability affects impulse buying. *Journal of Consumer Research. Vol. 34 (4)* , 537–547.

Xiao, J. J., & O'Neill, B. (2018). Mental accounting and behavioural hierarchy: Understanding consumer budgeting behaviour. *International Journal of Consumer Studies* .

Xiao, J.-J., & Olson, G. I. (1993). Mental accounting and Saving Behavior. *Home Economics Research Journal. Vol. 22* .

Zhang, C. (2016). Consumption responses to pay frequency: Evidence from 'extra' paychecks. *Working Paper. Booth School of Business, University of Chicago.*

Zhang, Y. C., & Sussman, A. B. (2018). Perspectives on mental accounting: An exploration of budgeting and investing. *Financial Planning Review* .

Zhang, Y. C., & Sussman, A. B. (2017). The Role of Mental Accounting in Household Spending and Investing Decisions. *Client Psychology* .