

Investigating the relationship between sales frameworks, mental accounting and the pattern of discounts provided by Domino's customers

Masoud Taherinia^a, Fataneh Hematian^{b,*}

^aAccounting Department, Lorestan University, Khoramabad, Iran

^bAccounting Department, Khomein Branch, Islamic Azad University, Khomein, Iran

(Communicated by Mohammad Rasoul Velayati)

Abstract

Based on the theory of mental accounting, customers have different perceptions of spending. Based on this psychological principle in customer decision-making, retailers often change the number of discounts and prices. As a result, in this study, we tried to use a sample of 389 Domino Company customers to examine the effects of customers' mental accounting due to the discount offering for cheese sales using SPSS software and the Chi-Squared test in this company. Accordingly, a test was arranged in this regard, and customer opinions were measured. Results show that to maximize the understanding of customers' savings, they should use centralized discount frames, not all discount frames.

Keywords: Mental Accounting, Entire Discount, Centralized Discount
2020 MSC: 90B90

1 Introduction

Neoclassical households believe: a dollar is a dollar that comes from it. Nevertheless, many households use separate budgets for food, gas, and entertainment [1, 2]. Some, even physically, divide their money into dedicated envelopes for various purposes [3]. In hypothetical options, participants tend to have different normal endpoints for the same or similar financial losses [4]. Psychological budgeting related to the effects of public policies, such as paying income tax [4].

Based on this psychological principle in customer decision-making, retailers often change a number of discounts and prices. This advertising style designed to influence the value understanding of the transaction and the customer purchasing purpose. Previous research confirms how alternative discount options relative preferences and consumer choices affected [5, 6, 7]. Previous research has shown that the frames used in advertisements affect the value of the consumer. perceptions and their buying intention [6, 8, 9, 10, 11, 12, 13, 14, 15].

Several authors have also compared the difference between money (such as, discounts) and the relative attractiveness of types of advertising and non-promotional items (such as more products), etc. [11, 12].

*Corresponding author

Email addresses: taherinia.m@lu.ac.ir (Masoud Taherinia), hemattian2000@yahoo.com (Fataneh Hematian)

However, few studies conducted on combined advertising on customer perception and intention for purchasing [10].

This concept called mental accounting theory. In the mental accounting theory consumers and households measure their financial activities in a way similar to the company's activity [13]. As a result, consumers and households assigned financial event to specific accounts and categorize them as labels and resources. However, different people may categorize different financial events differently [7, 16, 17].

This study attempts to find how the effect is on the combination changes based on accounting frames and consumer discount rules on their perceptions. In this study, there are two types of frames including entire discounts, such as "Buy N , receive $X\%$ discount" and a centralized discount package, which takes into account the last element of the micro, such as the purchase of the second commodity with a $Y\%$ discount to purchase a cheese product, Domino Company analyzed. In this regard, the following goals and assumptions examined.

1. Assessing the sense of consumers saving exposed to the centralized discount frame and the entire discount frame.
2. Assessing a number of customers losing exposed to the centralized discount frame and the entire discount frame is due to the loss of purchased item.
3. Examining consumers' perceptions of centralized frame rates and the entire discount frame.

In addition, the following hypotheses are to be tested in present study:

H1. Consumers who exposed to the centralized discount frame will save more money than consumers exposed to the entire discount frame.

H2. Those customers who are exposing to the entire discount frame feel losses more than customers with the centralized discount frame when facing with it.

H3. Consumers exposed to the entire discount frame, divided discounts equally between all items, but consumers exposed to the centralized discount frame, considered discounts only for the last item.

2 Literature Review

Agbato [18], in his dissertation entitled "Assessing Consumer Price Perception" An Approach to Mental Accounting and Dependent View", examines the behavior of consumer purchasing in terms of exploratory decision-making. Decision-making processes are quick and easy psychic shortcuts that accepted by people to cut the amount of time spent on decision-making. Specifically, in this study by survey Forming vision theory and mental accounting, and examining them in decision-making scenarios related to price, exploratory survey addressed. The impact of pricing on consumer behavior examined under a broad reference price framework, which indicates that decision makers use it while making purchasing decisions.

Four reference points have been investigated: previous retailer prices, competitor current prices, past competitor prices, and consumer expectations of future price changes, to understand more about the impact of pricing on subjective accounting and as a result, helping the literally growing body of price references in marketing research. The results show that in the places where these references are evidently identified in decision-making issues, pricing considerably affects consumer perceptions of discounted cash-based revenues and leads to a change in consumer preferences. In addition, financial losses are not sensitive to confidential price manipulation.

Yu and Chu [16] in a study entitled "Sales Frames, Mindful Accounting, and Discount Exemptions" examined the effect of sales ability on the attractiveness of combined advertising. The authors suggest that the promotional format "centralized Discount" (for example, a 50% discount on purchases) is more appealing to consumers than promotion format "Entire Discount" (such as, 25% discount) due to the effect of different frames on customer mental accounting process. Finally, this article shows that companies can increase advertising to boost relative attractiveness for consumers.

Hastings and Shapiro [2], in a study titled "Mental Accounting and Consumer Choice: Evidence from Price Shock", accumulated a simple test of money reliability based on parallel changes in prices for different product qualities. This test was a selective sampling model of product quality selection and estimation of the model with the use of panel data in the purchase of gasoline. The results showed that when gasoline price is increasing, consumers prefer to use lower class gasoline. The results showed that, the hypothesis of the study in which household is changing "gas money" with other revenues "has been rejected and it has been interpreted as evidence of mental accounting.

Hu and Fei [19], in a study entitled "The Common Impact of Inequality and Mental Accounting, Is the Goal of Online Shopping, even Higher Perceived Search Costs and Risk" examines the impact of search costs and perceived risk. In this study, four kinds of food products, toys, travel, and online clothing were classified into pre-test and

post-test categories for the study of mental accounting conditions. To study this research, a sample of 473 college students was selected. The results showed that (1) without managers, search costs and perceived risk had no significant effect on purchasing, but had a positive influence on purchasing intention under the influence of scarcity and mental accounting; (2) limited time has had the largest share in improving purchasing intentions.

Mirzai and Meshkini [20], in a study entitled "Mental Accounting (Different Approach to Decision-Making Scenarios)", acknowledged that most economic theories are based on the fact that people act logically when faced with economic events and all available information is considered in their decision making process. This hypothesis is the origin of the market hypothesis. Nevertheless, some researchers' findings have doubt on this fundamental hypothesis and they have discovered evidence that the logical behavior of people is not widespread. One of the concepts that these two and Richard Thaler have been working on is the mental accounting method. According to this method, people open separate account in their mind, for making financial decisions and for evaluating each decision and they try to separately examine the consequences of any decision (positive or negative). In this way, they take a general look at the set of decisions (similar to the portfolio) and may make decisions that will not maximize their wealth. Thaler studies show that in evaluating decisions not only consider decisions separately, but also changing the decision type, the time spent, and benefiting also influences the outcome of the decision. Abbas Zadeh et al. [21], in a study entitled "Identifying and Ranking the Most Important Factors in Mental Accounting", examined how people make financial decisions while facing economic events so that the most important factors influencing mental accounting are identified and ranked. In this research, different behaviors of women and men as well as behaviors of different age and educational groups, people with different practical experiences and different economic classes were measured, using questionnaires in three sections, which in each scenario three hypotheses and for each assumption, 5 questions were designed. Data were analyzed using multiple regression tests and dependency test among different groups by Friedman test. The results show that there is a significant relationship between independent variables such as accidents, making profits, time bearing cost, time of cost bearing and financial decision-making, and there is no significant relationship among other independent variables such as (emotions, effect of each decision, change of decision type) and people's financial decision-making. In addition, the importance of each reason is different for various groups.

Azami et al. [22], in a study entitled "The Mental Accounting Approach to Consumer Decision-Making," acknowledged that in most economic theories, it is assumed that individuals have acted logically in confronting economic events and they consider all available information in their decision-making process. However, some findings suggest that the rational behavior in decision-making is not widespread. An explanation on consumer neoclassical theory shows that the consumer solves a very complicated problem. Based on a simple and spontaneous view, the consumer first divides his/her budget into the main classes, by taking on an up-and-down approach and then divides each class into sub-classes. Such a view has led to the emergence of a phenomenon called mental accounting. This paper attempts to explain the mental accounting and its effects on people's decision-making.

Norahi and Yavari [23], in a paper titled "Mental Accounting and Decision Making," emphasized that it is essential to note that much of the financial and economic theories are based on the notion that people behave logically and they considered all the information in the decision-making process. On the other hand, researchers have found many indications that show irrational behavior and repeated evaluation error as well as human judgment. One of the reasons for these irrational decisions is the mental accounting. In this paper, a summary of mental accounting and the history of the mental accounting process and its relationship with portfolio management have been raised. Finally, the result is that investors should consider a mental account for the portfolio and make longer goals. Individuals open a separate account for making the financial decision and for evaluating each decision; they try to look at the consequences of any positive or negative decision alone. They look like a portfolio of decisions that are similar to the portfolio and they might make decisions that will not maximize their wealth.

Balochi et al. [24] in the study entitled "Mental Accounting" mentioned that some researchers including Beyer and Konley violated the idea with their findings. They provided the person decision-making theory. This method allows decision makers to receive more information so that they can revise the mental probabilities estimation of events that may occur after decision-making. Mental Accounting examines the financial decision-making conditions of people in facing different financial events and decides on that basis. In this research, first, theoretical concepts of mental accounting expressed and, after defining mental and behavioral accounting, deals with mental accounting issues. In addition, information collected through the library and electronic databases.

3 Methodology

The nature of this study is applied. In addition, it gives qualitative results on examining the relationship between sales frames, mental accounting, and discount patterns in Domino's customers. The data collection tool is a

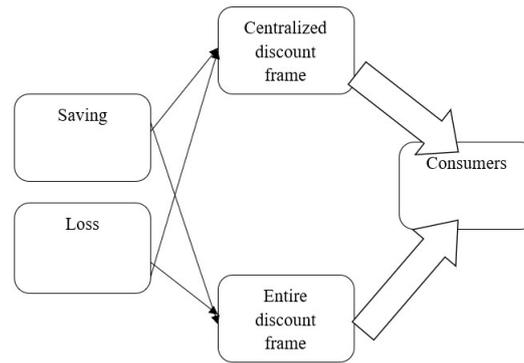


Figure 1: Figure 1. Conceptual Model of Research [7]

questionnaire. This study conducted to meet the desired goals using Chi-Squared test and SPSS software.

3.1 Population and Statistical Samples

The statistical society of the study is for Domino customers in the 22nd District of Tehran. Based on the Cochran formula, 389 people were selected. Participants contributed in the process on a regular basis without reward motivation. Two-page questionnaires were used to collect the required information. Sample is defined as a group of population that the information needed for the research obtained by that. Consequently, in this research, a simple sampling method is used which the Cochran sampling volume formula for gaining its volume.

$$n = ((t^2 pq)/d^2)/(1 + 1/N((t^2 pq)/d^2 - 1)) \quad (3.1)$$

where:

n = Sample size;

N = Statistical society;

p = Presence of the attributed case study;

q = Absence of the attributed case study; t = Confidence level 0.95 (1.96);

d = Accuracy degree (0.05).

According to the above formula for the sample with an uncertain number of customers, 389 samples were selected randomly. This study examines the relationship between sales frames, mental accounting, and discounts in Domino's customers. The present study was carried out in the 22nd district of Tehran and was conducted during the summer of 2017.

3.1.1 Variables

A special form of discounted offer, which centralized on a specific part of the purchasing product. In this study, by using scores related to the sense of saving and the feelings of loss were quantified by participants in the research sample, using the 5-point Likert scale Entire Discount Frame. It is a special form of discount, which it is based on the total of product purchasing. This study was a quantifying research and using the 5-point Likert scale option and using the scores related to the sense of saving and feeling of loss by participants in the research sample.

3.2 Study test

To test the first to third hypotheses, it is examined that, do consumers exposed to a centralized frame of the discount to save more than consumers who exposed to the entire discount frame? Moreover, do consumers perception about the last one and the various discounts in the two models of the frame is different.

3.3 Decision Scenario

Every morning, Mr. M and Mr. Z spend eight thousand Tomans (80000 IRR), to buy four packs of cheese (4 thousand Tomans unit price). This morning, when Mr. M bought the cheese from the store, he realized an advertisement in this form (buying a package of cheese, receiving a second one with the half price). Therefore, he received a second pack. At the same time, Mr. Z noticed that his store had advertised that (25% discount for the purchase of two packets of cheese). He also agreed to upgrade his purchase to two. After reading the story, participants answered a question:

1. "Although Mr. M and Mr. Z both paid the same price for two packages of cheese; do you think which of them has realized more savings?"

Mr. M Equally Mr. Z

2. After that, they were asked to imagine that both had completed the first pack and poured the second pack out of carelessness. The question is, which one feels sadder about pouring the package?

Mr. M Equally Mr. Z

3. Participants were asked to imagine which of the following five statements gave the best explanation for Mr. M and Mr. Z about the losses caused?

- A) A cheese pack with a cost of 4,000 Tomans has created a loss of 4,000 Tomans.
- B) I spent 6 thousand Tomans for two packs, so the losses were 3 thousand Tomans.
- C) I have finished a package of cheese cost 4 thousand Tomans, so my lost is 2 thousand Tomans.
- D) I paid for cheese this morning, so my losses are no costs.
- E) Other participants in the study were asked to describe their feelings.

4 4 Results and Discussion

4.1 The First Hypothesis

HO: Consumers exposed to a centralized discount frame do not feel more discounts (savings) than consumers who are exposed to the entire discounted frame.

H1: Consumers exposed to a centralized discount frame feel more discounts (savings) than consumers who are exposed to the entire discounted frame.

For this hypothesis, the following question has been raised: "Although Mr. M and Mr. Z both paid the same price for two packages of cheese, do you think which of them has realized more savings?"

Mr. M Equally Mr. Z

The result in this question shows that the majority of people, (59%) consider the same level of savings for both people. 34% believe that person Z understands saving more, 7% believe that person M understands saving more. Accordingly, the Chi-square computation amount was 155.85 and the probability value was 0.000. Consequently, the zero assumption that consumers exposed to a centralized discount frame do not feel more economical discount than consumers do expose to the entire frame discount," is rejected. In other words, consumers are exposed to a centralized discount frame, saving more than consumers who are exposed to the entire discounted frame.

Table 1: Table 1. Chi-square Test

Probability	Chi-Square Statistics
0.000	155.85

4.2 Second Hypothesis

HO: customers exposed to the entire discount rate do not feel more losses than those customers exposed to the centralized discount frame while facing it.

H1: customers exposed to the entire discount rate feel more losses than those customers who exposed to the centralized discount frame, while facing it.

For the second question, 42% of participants believe that Mr. M and Mr. Z understand the same losses. 15% believed that Mr. M feels more losses and 43% of the participants believed that Mr. Z feels more losses. The

Chi-square value was doubled to 57.8 and the probability was 0.000. Because of the queuing assumption, “customers who are exposed to the entire discount frame do not feel more loss than those customers exposed to the centralized discounted frame, while facing with losses” is rejected, and the opposite hypothesis is confirmed.

Table 2: Table 1. Chi-square Test

Probability	Chi-Square Statistics
0.000	57.8

4.3 Third Hypothesis

HO: customers exposed to the entire discounted rate, do not equally divided the discount between all items, and customers exposed to the centralized discount frame, do not consider discount just for the last item.

H1: customers exposed to the entire discounted rate, equally divided the discount between all items, and customers exposed to the centralized discount frame, consider discount just for the last item. For the question related to this hypothesis, the results show that 45% of respondents believe that the loss of a person M is 2 thousand Tomans, and only 11 % believe that the loss of a person Z is 2 thousand Tomans. In contrast, 84.3% believe that the loss of a person Z is 3 thousand Tomans and 47% believe that the loss of a person M is 3 thousand Tomans. These results are consistent with expectations. In other words, the scenario shows that a centralized discount encourages consumers to divide the entire discount equally between two packages and the centralized discounted scenario encourages consumers to assign all their discounts to a second package. The first question in the table below shows that if a discount method is implemented, most consumers will not consider the whole package price as a loss. Because only 1.5 respondents for person M and 2.7 from respondents for person Z, identified the entire second packet as a loss. As a result, the third hypothesis is confirmed.

Table 3: Table 3. Participants' Perceptions From the losses of Person M and Person Z

Question	Person M	Person Z
A) A cheese pack with a cost of 4.000 Tomans has made a loss of 4.000 Tomans	1.5	2.7
B) I spent 8.000Tomans for two packages, so the loss was 4.000 Tomans.	84.3	47
C) I have finished a package of cheese for 4 thousand Tomans, so my loss is 2.000 Tomans.	11	45
D) I paid for cheese this morning, so my losses were not costly.	1.6	3
H) Other participants in the study were asked to describe their feelings	1.6	2.3

Note: The Numbers in Each Cell Represent the Relative Contribution of That View.

The entire discounted frame scenario encourages customers to divide the discount rate equally between 2 items. Moreover, the centralized discount scenario encourages consumers to allocate the entire discount to the second item.

5 Conclusions and Suggestions

The results of the test showed that the consumer preferred entire discounts on combined advertising and centralized discount frames on entire discounts. This difference mainly shows the tendency of people to give different discounts for each product item and focus on the latest issue of those who are exposed to a centralized discount. So, if customers get a discount for the last unit, they will feel as they are saving more. In addition, participants believe that a consumer, who loses the most discounted product, will feel less harm than when he/she losses the entire discount.

According to Shafir and Thaler [16], real costs caused by replacement costs should be high, but the effect of replacement cost in the A1 test was low. For example, only 18% voted for Option A. Perhaps the major reasons for this result are that in the present study, discounts have been given to options 1 and 2, but in Shafir and Thaler [16], consumers did not need to allocate discounts individually. This difference can be explained by the low cost of replacement in the current study. The study shows that, to increase the marketing role of selling Domino's products, managers need to use centralized discounted frames to maximize consumer understanding of savings, instead of using all discount frames.

References

- [1] V. Zelizer, *Making Multiple Money*, Sage Foundation, New York, NY, 1993.
- [2] J. Hastings and J. M. Shapiro, *Mental accounting and consumer choice: evidence from commodity price shocks (No. w18248)*, National Bureau of Economic Research, 2012.
- [3] L. Rainwater, P. Richard, L. Coleman, and G. Handel, *Workingman's Wife: Her Personality, World and Life Style*, McFadden Books, New York, NY, 1959.
- [4] C. Heath, and J.B. Soll, *Mental budgeting and consumer decisions*, J. Consumer Res. **23** (1996), no. 1, 40–52.
- [5] D. Kahneman, and A. Tversky, *Prospect theory: An analysis of decision under risk*, Econometrica **47** (1979), no. 2, 263–291.
- [6] I. Sinha and M.F. Smith, *Consumers' perceptions of promotional framing of price*, Psycho. Market. **17** (2000), no. 3, 257–275.
- [7] H.H. Liu and Y.Y. Chiu, *Sales framing, mental accounting, and discount assignments*, Asia Pacific Manag. Rev. **20** (2015), no. 4, 201–209.
- [8] J.G. Barnes, *Factors influencing consumer reaction to retail newspaper sale advertising*, Combined Proc. Amer. Market. Association, Chicago, the US, 1975.
- [9] S.S. Chen, K.B. Monroe, and Y.C. Lou, *The effects of framing price promotion messages on consumers' perception and purchase intentions*, J. Retail. **74** (1998), no. 3, 353–372.
- [10] W.D. Diamond, and A. Sanyal, *The effect of framing on the choice of supermarket coupons*, Adv. Consumer Res. **17** (1990), no. 1, 488–493.
- [11] W.D. Diamond, *Just what is a dollar's worth? Consumer reactions to price discounts vs. extra product promotions*, J. Retail. **68** (1992), no. 3, 254–270.
- [12] D.M. Hardesty and W.O. Bearden, *Consumer evaluations of different promotion types and price presentations: The moderating role of promotional benefit level*, J. Retail. **79** (2003), no. 1, 17–25.
- [13] R.H. Thaler, *Mental accounting and consumer choice*, Market. Sci. **4** (1985), no. 3, 199–214.
- [14] M. Palazon, and E. Delgado-Ballester, *Effectiveness of price discounts and premium promotions*, Psycho. Market. **26** (2009), no. 12, 1108–1129.
- [15] Y. Yi and J. Yoo, *The long-term effects of sales promotions on brand attitude across monetary and non-monetary promotions*, Psycho. Market. **28** (2011), no. 9, 879–896.
- [16] E. Shafir and R.H. Thaler, *Invest now, drink later, spend never: On the mental accounting of delayed consumption*, J. Econ. Psycho. **27** (2006), 694–712.
- [17] D. Soman and J.T. Gourville, *Transaction decoupling: how price bundling affects the decision to consume*, J. Market. Res. **38** (2001), no. 1, 30–44.
- [18] O.M. Agbato, *Evaluating consumer price perception: a mental accounting and frame dependent perspective*, PhD. Thesis, University of Glasgow, Glasgow, Scotland, 2016.
- [19] T. Hu and J. Fei, *The mental accounting and moderating role of habit in usage of online social media: Implications for higher education*, Int. Symp. IT Med. Educ. (ITME), Guangzhou, China, IEEE, 2011.
- [20] S. Meshkini and M. Mirzaei, *Mental accounting (Different approach to decision-making scenarios)*, First Int. Conf. Account. Manag. Third Millenn., vol. 1, Rasht, Iran, Pishgamane Pazhoeshe Novin Company, 2015.
- [21] M.R. Abbaszadeh, S.A. Alavi, and F. Arabi Bafrani, *Identification and ranking of the most important factors in mental accounting*, Third Int. Conf. Appl. Res. Manag. Account., Tehran, Iran, Shahid Beheshti University, 2015.
- [22] Z. Azami, T. Salehi, and N. Yousefzadeh, *Mental accounting approach in consumer decision making*, First Int. Conf. Econ. Manag. Account. Soc. Sci. vol. 1, Rasht, Anzali Azad University Entrepreneurship Company, 2014.
- [23] M. Norahi and M. Yavari, *Mental accounting and decision making*, Second Nat. Conf. Bus. Manag., vol. 1, Hamedan, Iran, Center for Sustainable Development of Science and Technology Farzin, 2014.

- [24] S. Balochi, M. Nik Akhtar, and A. Houshmand, *Mental accounting*, First Int. Conf. Politic. Epic (Approach to Middle Eastern Developments) Econ. Epic (With Approach to Management and Accounting), vol. 1, Roudehen, Iran, Islamic Azad University, Roudehen Branch, 2013.