

MANAGERIAL APPLICATIONS OF FRAMING EFFECTS AND MENTAL ACCOUNTING IN NETWORK PARTICIPATION

Amir Emami*; Fatemeh Saghafi**; Behrouz Zarei***; Mahsa Ebrahimzadeh**** & Ali Davari*****

*Researcher, Faculty of Entrepreneurship, University of Tehran, Tehran, Iran

**PhD, Faculty Member of Iran Telecommunication Research Center, Tehran, Iran

***Assistant Professor, PhD, Faculty of Entrepreneurship, University of Tehran, Tehran, Iran

****Faculty of Entrepreneurship, University of Tehran, Tehran, Iran

*****PhD, Allameh Tabatabaei University, Tehran, Iran

E-mail: amiremami@ut.ac.ir, Saghafi@itrc.ac.ir

Abstract:

Metropolis such as Tehran might be treated as an example of the cities on their ways to be modernized being faced with emerging problems and issues. With respect to the efficiency of the civil sophisticated experts' ideas for resolving the civic difficulties, an intelligent database named "Idea Bank" has been implemented in Tehran municipality since 2009. The aim of this paper is showing some solutions for enhancing the efficiency and effectiveness of the idea bank system based on framing effects (FE).

Based on extensive review of FE, broad ranges of general case of FE are identified. Then, through field studies and using questionnaire tools, the degree of the applicability of each particular FE lows is determined. The research procedure finally led to the identification of applicable FE in enhancing the performance of idea bank network.

The results show the application of sunk cost, bundle/unbundle framing of outcomes and Penny-a-day strategy can effect on generating ideas in the idea bank. Also Pseudo certainty effect could reduce idea bank's awards expenses even the amount of reduction illustrated quantitatively.

This work contributes to a more innovative view at framing effects and its psychological effects on effectiveness of expert's decision making in the idea bank.

The results of this study could be applied similarly in enhancing the productivity of suggestion systems in organizations or even in contributing of experts in social networks.

The paper should be of value to researchers of FE in general, and to implementers of FE theory programs in social networks.

Key Words: Framing Effects, Mental Accounting, Judgment and Decision Making

1. INTRODUCTION

During recent years, with considerable expansion of Tehran, capital of Iran, the municipality, has been always encountered with critical problems in effectiveness and efficiency of civil issues, for instance mismanagement, misconduct of projects and misallocation of resources. To overcome these problems, the municipality needs to codify different kinds of long and short term plans. Those plans must have especial attributes like: applicability, effectiveness, efficiency with consideration of opportunities, threats, weaknesses and strengths. Therefore the Strategic Committee Department of Municipality crucially needs outward ideas from experts of all related civic fields; and a data base for scrolling and maintaining the ideas, based on which a system would be enabled to collect the best ideas and have those mentioned attributes for the municipality senior managers. We called this system "Municipality Idea Bank". Creating an idea bank which is able to collect best ideas can provide

many opportunities. By developing such an idea bank, two results will be achieved for the municipality: first solving its own problems, second, increasing the level of citizen participation. The components of this system are hardware, software with interface applications and human. The productivity of this system would depend on subjective values of participants. Satisfying these subjective values that are naturally countless will be possible in existence of rich resources which definitely are not available in the municipality. Therefore there should be a method or a tool, consistent with the above mentioned values.

In order to achieve this satisfaction, in the idea bank, framing theory, based on a mental model [1], [2], [3], [4] has been applied. This theory is investigated in many sciences (as well as politics, economics, marketing, treatment etc.) (e.g., [3], [5], [6]). They have well determined the framing phenomenon and its functions in each of the mentioned sciences. They have demonstrated that how framing causes paradoxes in people's judgments and decision making and also how the consequences violate the normative theory. In this regard we can mention to the studies of Thaler in which he investigated the framing effects and usages in people's mental accounting and consumer behaviors [3], [7]. For example consider company A in its advertisements: "60% of our company's products have ability to compete in international market".

The other side of this message is that; 40% of their products are not qualified for international market. Definitely the first message would have stronger positive impact on stakeholders' judgment. This example is one of simple kinds of framing manipulation (In framing literature this kind of framing called "Attribute framing"). Many scholars have demonstrated the usage of framing effects in political and public relationships that are used by elites. Chong describes framing as the essence of public opinions formation [5]. Furthermore, Druckman discusses how public conflicting perspectives can effect (prior) elite framing effects [5].

In this article we intend to investigate this theory in experts' participation area in the idea bank of municipality with a practical approach that so far has not been analyzed in any studies. In addition, although the relationship between the framing and mental accounting is in the mental models extent, has been rarely studied [8]. This relationship will be also investigated in this research. The literature review section covers framing effects. After describing the research method, in the studies part, empirical tests would be applied in order to answer the hypothetical questions. Finally the article discusses the studies' findings and implications.

2. FRAMING EFFECTS AND MENTAL ACCOUNTING

Framing is one of the most famous controversial issues, which deviates from the rational decision theory [3], [9]. Judgment and decision making are very sensitive to the way that decision outcomes are manipulated [8], [10]. Whether this manipulation, aims at challenging the willingness to risk, simply evaluating of an object or persuading a communication (see., [10]). Basically rational decisions follow the normative model of expected-utility theory [12]. According to this model, decision outcomes should not violate the principle of description invariance [12]. Based on this principle the way that a decision scenario is manipulated in different states or situations should not change individual choices. But in framing by differently manipulating of a decision problem, even contradictory choices would be made because it objectively emphasizes part of the problem's information that biases people's decision to a choice that does not follow a rational process, it rather follows subjective values [13].

Daniel Kahneman and Amos Tversky in 1979 proposed a descriptive theory of decision utility, which is called "prospect theory". This theory illustrates the famous type of framing called Risky- choice framing, because it can challenge people's judgment by risky vs. certain options. [1], [2]. It is the most widely used type of framing in researches [10], [14]. In this type, "individuals tend to prefer risk-averse alternative when the outcomes are framed in term of gains (e.g., saving lives, making money), but shift to preferring risk-seeking when the equivalent outcomes are framed in terms of losses (e.g., dying, losing money)"([5], P.63).

Prospect theory contains one of the most robust human biases called "loss aversion" and is defined as the individual tendency to avoid losses in exchange for obtaining equal gains [16]. This bias causes risk seeking behaviour because from psychological point of view losses (e.g., losing 1000\$) seem more painful and tormentor than equal gains (e.g., gaining 1000\$) [17]. The result of this dissatisfaction in risky framing, biases decision to more risky choices. In the idea bank contributing an idea equates paying cost. Obtaining award/s or satisfying expectations equals to gain. Kessler, Ford and Bailey found that loss of a favourable object produces a negative value in prospect theory [9], similarly losing award/s or the failure of an idea equals loss. This claim is retrieved from mental accounting studies. In this study prior to presenting the framing effect, we have investigated sunk cost effect that might be considered as the basic concepts in mental accounting (e.g., [3], [6]).

2.1 Sunk-cost

It is when a person pays the price of a service or good in advance or has a previous investment in something then opens a mental account for the service [3], [18]. A person can simultaneously open different mental accounts for different services and if the sunk cost be greater the pressure of using the service increases, [6], [18]. The account will close when the person gains the same value by consuming the service [18], [19]. If giving an idea is equal to paying money, therefore an expert who contributes his/her idea, creates a mental account at the time of contribution and will close it with satisfaction when he/she gets his/her award (or gains) from the idea bank. Therefore we would like to argue that sunk cost is not just limited to monetary matters. So in the study 1 we will answer the following hypothesis:

H1: contribution in the idea bank like other monetary decision problems create sunk cost for the experts in the idea bank.

This hypothesis means that although mental accounting generally involves monetary outcomes (e.g., paying \$40 to get a ticket of a football match), idea generation is one of the exceptions and would produce the same consequences as in mental accounting.

"Loss aversion would have little impact on decision making if people aggregate multiple decisions together" ([20], p. 193). For example Chema and Soman presented a vacation package program in two different versions and asked subjects' opinion about the attractiveness of each of them. One version framed just with a bundled price of services (e.g., airfare, hotel, and transferor totally cost \$2000) while another framed with unbundled prices of each service in a booklet (i.e., airfare cost \$500, hotel cost \$1400, and transferor cost \$100 totally cost \$2000). The first version was more appealing to try for the subjects than the second one [18].

When the information of a decision problem is aggregated it shapes broad framing. This decreases the pressure for consumption. On the other hand segregating the information shapes narrow framing which increases consumption's pressure [6]. For example if four tickets are being purchased for \$160, it is quite clear how much each ticket costs and to forego using that tickets in each time would feel like a \$40 loss (narrow framing). However, if a four ticket coupons is purchased or pass for \$160 (a bundled transaction), it is easier to shift money around (e.g., to think that three of the tickets cost \$50 each and the Fourth was only \$10). In other words, there is more room for creative mental accounting. The end result is that it is easier to forego using that final ticket [6]. These effects in the idea bank may help in the way that problems are displayed, because we think that aggregating or segregating problems in ideation may have impact on amount of contribution like consumer behavior in monetary matters. Therefore the second hypothesis is:

H2: the broad framing of decision problem in idea bank increase contribution in comparison to narrow framing. And narrowly manipulation of idea bank decision problem increase pressure for gaining the award.

Both of these hypothetical questions are investigated in the second study.

2.2 Pseudo certainty effect

The combination of loss and gain valence in risky-choice framing creates "Pseudo certainty effect". This kind of framing manipulation is mostly considered as an illusion. It occurs when the problem is broken in two parts. In the first part the framing must be fully risky and negative in order to make the decision maker a risk seeker, for the remaining part, the problem should be presented in the following manipulation: certain and positive option vs. risky and positive option. By this framing in the second stage most of decision makers choose the certain option [1], [18]. Tversky and Kahneman([2], p. 455) have concluded that "a decision problem is evaluated conditionally(i) when there is a state in which all acts yield the same outcome, such as failing to reach the second stage of the problem(ii)and the stated probabilities of other outcomes are conditional on the nonoccurrence of this state". We use this phenomenon in the idea Bank as a method to decrease some expenditure, especially those awards that cost a lot for the municipality.

H3: Pseudo certainty can be applied to reduce the idea bank's expenditure.

Experts' expect variety of awards in the idea bank. For example from a simple concert ticket up to an outsourced construction project (e.g., an expert whose idea has been accepted in the idea bank and is a civil engineer and may have a Construction Company, might ask municipality for outsourcing the project that he/she had previously contributed an idea for it). Experts hope a portfolio of awards before contribution, therefore any method that can decrease amount of award is of great value for the system. We have investigated this hypothesis in the third study.

2.3 A pennies-a-day strategy

One of the most applicable framing manipulation which can be well recruited in advertisements [18], called "A pennies-a-day strategy ". Gourville got a tricky manipulation that traders use in their advertisements, they reframe a business deal from aggregate payment to series of continuous small daily payments [18]. For instance in a donation activity, one group of subjects was asked whether they like to pay 85cents (PAD framing) a day for a worthy cause and the second group was inquired if they like to pay aggregate amount of 300\$ a year. The studies show that PAD framing was significantly higher than aggregate framing [18]. Two of important factors In PAD that have been discovered are as follows [18]:

1-PAD provides more attraction for transactions involving losses than gains.2-In low cost transactions PAD is effective, but in high cost transactions the impact is vice versa because of hedonic editing effects (see, [3]) (e.g., 3\$ a day is what I spend on coffee each day but I don't really spend 30\$ each day on anything. ([18], p. 386).

PAD Strategy can be applied in the idea bank when experts are asked to contribute their ideas regarding their specialty. An expert- during his professional life- has probably tackled a given problem many times and can contribute an idea (i.e., equal to a small daily expense) more easily and faster than a person, professionally unfamiliar with the same problem (i.e., for experts in unrelated fields it works like a high cost transaction). Therefore this can be claimed that the PAD strategy is the best possible method and will be of great value for the municipality.

H4: Reframing experts' cooperation to a series of ongoing ideas strengthens the attractiveness of cooperation.

This is investigated in the fourth study.

3. METHOD

3.1 Participants

The participants were 202 experts (139 male and 63 female / 141 employees and 51 employers). Experts in our idea bank consist of different groups of dons, lawyers, engineers, managers, hygienists, treatment experts, consultants, and social experts. They all had contributed in the idea bank before. Ages ranged from 25 to 67, with a mean of 39.47 years. The population was the civic experts in Tehran with at least BS degree.

3.2 Research design and procedure

The questionnaires were distributed among experts. This was mostly done by meeting the experts in their offices and handing them the questionnaires. In other cases the questionnaires were emailed or posted. Five experiments performed in two phases. In the first phase participants answered half of the questions and after two months the rest of the questions were answered.

Since understanding the questions was necessary for the respondents, therefore we performed an interview with some of them after each experiment. These interviews authenticated the reliability and stability of responds of the experiments. Furthermore we needed to find out the expert's reasoning after the test. We tested the questionnaires 3times in the pre-test group and the result of the final testing was approximately the same as the result of the third test in the pre-test group. Also one question appeared at the end of the experimental instrument which demanded: "How clear were the questions in this questionnaire?" to check the clarity of the experiment [21] responds recorded on a 1(very unclear) to 9 (very clear)scale. The mean response obtained in first pre-test group was 5.83, by modifying some of questions a new mean equal to 8.21 achieved in the last pre-test group. Another technique we applied for validation of the questionnaires was acquiring the opinions of five academic professors and applying the required modifications.

Several studies have supported the validity, and reliability and internal consistency of the framing and mental accounting problems [6], [22], [23].According to the literature review some were used in current study like donation program in the fourth study and the others are designed retrieving from previous studies by considering the variation of the idea bank outcomes. They were used to test, the validity, existence and effectiveness of framing effects in the idea bank. In the studies 1,2, and 4 We asked subjects to indicate their likeliness on a five point respond scale, on which to respond (1="very low", 5="very much"). And In studies 3, subjects were asked to respond double choice questions.

4. MAIN RESEARCHES

In this section framing effects that have been discussed in the literature will be investigated. According to the order of hypotheses, each study will be discussed.

4.1 Study 1

The objective of presenting this study is to investigate the existence of sunk cost in the idea bank. In prior researches question 1 (which is about the information related to the purchase of a basketball match ticket) had been used in order to examine the sunk cost in decisions and outcomes indicate appearance of sunk cost. It is explained for the second time to investigate its relationship with the second question. The format of the second question is similar to the first question but contains outcomes connected to the idea bank, subjects who responded to question 1 answered question 2, two months later based on a code included in their questionnaires.

Questions: 1-imagine you have booked a ticket to a basketball game for \$50, which is not refundable. Suppose there is a snowstorm on the day of the game which makes the driving dangerous. How eager you are to go there?

2-imagine you have got a concert ticket of your favourite singer in VIP part from idea bank as your requested award for your accepted idea, a week ago. But according to the weather forecasts, there will be a storm at the night of the concert and it is dangerous to drive. How likely you are to participate in this event? (Note that this ticket could cost you \$50 if you wanted to buy it yourself)

Results and Discussion

The results of chi-squared test for both questions (Table I) proves that at 95% confidence level ($P\text{-Value} < 0.05$), the proportion of choices are not equal. The outcomes of the correlation between these two questions ($P\text{-Value} < 0.05$) evidences the positive relationship between them. In first and second questions, almost the answers' trends were upward ($M=3.06$ and $M=3.4$), but this trend in second question had a more upward trend. As a result, by taking both of these results into consideration, the existence of sunk cost in the idea bank would be verified.

The interesting point in this study is the higher mean of responds in second question in comparison with first one. So it might be concluded that the members' enthusiasm to avoid the loss impression in the idea bank (closure of a mental account containing loss of missing a reward in the idea bank), creates a stronger sunk cost, compared with closing of a mental account containing loss out of the idea bank. In other words ideation develops a higher mental value in comparison with paying money; this is regarded as one of the implications of this article.

One of the limitations of this study is that the specified outcome is related to a service (i.e., an event like concert), because if the reward would be a physical good, it would be possible to make less eagerness. Therefore we suggest the investigation of a combination of rewards inclusive of both service and good for future studies.

Table I: Descriptive Statistics of Study 1.

Coefficient Correlation (P-Value)	Chi-Square (P-Value)	Percent(N)	Options	Mean & Std. Deviation	STUDY 1
0,470(0.00)	30,72(0.00)	10%(21)	Very Low	M=3.06 S=1.22	Study1_1
		28% (60)	Low		
		20% (40)	Medium		
		30% (56)	High		
		12% (25)	Very High		
	38,20(0.00)	8% (17)	Very Low	M=3.40 S=1.18	Study1_2
		13% (26)	Low		
		28% (57)	Medium		
		31% (63)	High		
		19% (39)	Very High		

4.2 Study 2

This question is aimed to find out the effectiveness of bundled and unbundled rewards in the idea bank in two states. In the first state problems and rewards are presented in unbundled form and the person is said how much benefit (how many dollars) will achieve for each of the expenses he/she pays (the idea for a specified problem). On the other side in second state (Table 4) problems and rewards are present in bundle form. Meanwhile except indicated

tables that each is presents with two months lag, other information (including, problem statement and two questions in each state) are repeated exactly.

Problem statement:

Imagine \$10000 is assigned to solve 5 problems of one of the twenty two civic districts of Tehran as indicated below:

- 1 - Residents' problems about increasing population of noxious animals
- 2 - Residents' problems about the retrofitting of the old structures in the city
- 3 - Reduction in the amount of resident's general reading.
- 4 - Lighting deficiency at night
- 5 - High ways' sound pollution for the districts' residents

Table II: Unbundling cost and benefit in the idea bank.

Problems (state 1)	1	2	3	4	5	Total Award \$10000
Amount of award for each accepted idea	\$1000	\$2000	\$2000	\$3000	\$2000	

Table III: bundling cost and benefit of transaction in the idea bank.

Problems (state 2)	Total Award \$10000
1-5	

(Please note that between problems 1-5, there is no priority in giving your idea)

Questions:

If the above state is the way that you receive your \$10000 award, please answer two questions below:

- 1 - How eager you are to solve the problems?
- 2 - If you had effectively succeeded to solve the problems and your Idea had been accepted by the municipality, but after that the idea bank could not afford the whole award (only \$8000 possible to be paid), by taking the dissatisfaction resulted from not getting the whole promised reward, to what extent you are eager to continue presenting idea and participating in the idea bank in future?

The purpose of first and second questions was to indicate the propensity to participation and receipt.

Results and Discussion

In Table IV the primary information in given. The chi-square test results in all four questions show that at the %95 confidence level the proportion of choices in this examination are not equal. In question 1 from the first state the trend of responds is downward (M=2.36). Question 2of first state implies the downward trend (M=2.52). Therefore when offering expense and reward in the idea bank is done on an unbundled base, the participation propensity would be less and consume pressure increases to the extent that not paying the whole specified reward, the majority of members prefer to have less eagerness for cooperation with the idea bank in future.

Table IV: Descriptive Statistics of Study 2.

STUDY 2	Mean & Std. Deviation	Chi-Square (P-Value)	Percent(N)	Options
State 1-question 1	M=2.36 S=1.24	53,99 (0.00)	29%(58)	Very Low
			35% (71)	Low
			14% (29)	Medium
			15% (30)	High
			7% (14)	Very High
State 1-question 2	M=2.52 S=1.28	60,87 (0.00)	22% (22)	Very Low
			41% (30)	Low
			12% (24)	Medium
			15% (82)	High
			11% (44)	Very High
State 2-question 1	M=3.87 S=1.15	106,27 (0.00)	6% (67)	Very Low
			8% (84)	Low
			11% (22)	Medium
			42% (16)	High
			33% (13)	Very High
State 2-question 2	M=3.61 S=1.25	67,55 (0.00)	9% (18)	Very Low
			13% (26)	Low
			12% (25)	Medium
			40% (81)	High
			26% (52)	Very High

In first question of second state the trend of responds is upward (M=3.87) and also the same trend could seen in question 2 of second state (M=3.61). Hence when incurring the expense and earning happen in bundled way propensity for participation would be higher and the pressure for consumption will be less.

Table V: Coefficient Correlations.

Variables	Coefficient Correlation (P-Value)			
	State 1-question 1	State 1-question 2	State 2-question 1	State 2-question 2
State 1-question 1	1	-	-	-
State 1-question 2	+0,39(0,00)	1	-	-
State 2-question 1	<i>-0,45(0,00)</i>	0,23(0,00)	1	-
State 2-question 2	0,60(0,00)	<i>-0,57(0,00)</i>	+0,36(0,00)	1

In Table V the results of correlation test in four questions are shown. These results indicate in confidence level of %95 (P-Value<0.05), between questions 1 and 2 in both states, a positive and meaningful relationship exists. Therefore in both states between the propensity for participation and propensity for consumption a direct relationship exists; but between similar questions 1 in both states and 2 in both states, a meaningful and counter relationship. This result also confirms the conflict in members decision making, when the problem is given once bundled and next time unbundled.

These outcomes are consistent with [6] findings but the difference is that in their experiment the expense was monetary and paid for skiing, but here the expense is the idea for getting reward that is monetary, so spending it depends on them. The pressure arising

from the propensity for receiving the reward, somehow strengthens the sunk cost effect, because closing of a loss containing account in person's mind causes dissatisfaction. Based on this study's findings it is suggested to attract more participation for idea reception on one hand and to reduce the experts' dissatisfaction in case of not providing the whole expected reward on the other hand, it would be better to offer the problems and related rewards as bundled.

4.3 Study 3

Investigation of the pseudo certainty effect is the purpose of this study. The question is manipulated in a way that is inclusive of the bank's outcomes. The first question of this study contains two stages, first, idea presentation and assessment, second, receipt of reward.

Questions:

1- In the first stage of presenting your idea (i.e. before the first idea evaluation), There is 3/4 probability that you may not enter to second stage, so there is no award and there is 1/4 probability that you may successfully enter to the second stage.

The idea bank in the second stage has designed the reward in two different programs. The first program is without gamble and the second one contains gamble. Which of the two municipality's award programs would you favor as the owner of the accepted idea?

Program A: I don't take part in idea bank's gambling so I certainly gain 3 kinds of my favorite awards .

Program B: I take part in idea bank's gambling and by 4/5 probability I may win 5 kinds of my favorite awards .

(Please note that first, the probabilities 3/4 and 1/4 are counted based on scientific estimation according to the previous rate of idea success and failure in the idea bank second, your choice must be made before presenting your idea, i.e., before the result of the first stage is recognized. third, the kind of prizes in both programs is according to your choice among the idea bank's award portfolios).

2 - The idea bank intends to present two different programs in gamble form for you as your requested award in program C with a probability equal to 1/4, you will get three kinds of rewards and in program D with 1/5 probability you would select 5 kinds of your favourite rewards.

Which of the prize program, meaning C or D, would you favour in idea bank?

Program C: There is 1/4 probability that you may gain 3 of your favourite awards

Program D: There is 1/5 probability that you may gain 5 of your favourite awards

(Please note that the kind of prizes in both programs is according to the expert's choice among the idea bank's award portfolios)

Results and Discussion

The results of Chi-Square test ($P\text{-Value} < 0.05$) in Table VI shows that there is an independence between the respond in each of the questions. The first question contains Pseudo certainty effect of framing but the second question lacks framing effect and only has been asked as a control question. As it was mentioned earlier, Pseudo certainty effect has got two stages. In the first stage the problem will be manipulated to get risky (in this question 1/4 and 3/4) and negative (you won't enter to) outcomes.

According to risky frame most members behave in a risk-taking manner, therefore they would have a less risk perception and the prospect of three kinds of rewards in the second stage seems more attractive which looks like an illusion that directs the person to the second stage. In this stage the problem is manipulated in a way that would be inclusive of certain and positive outcomes. This option based on risky frame, has got a higher and more

attractive subjective value, this is why the subject will choose the certain option between risky and certain choice.

Table VI: Frequency Distribution of Study4.

STUDY4	Options	Percent(N)	Chi-Square(P-Value)
Study 4_1	Variable1	66%(134)	21.56 (0.00)
	Variable2	34%(68)	
Study 4_2	Variable3	29%(58)	36.61 (0.00)
	Variable4	71%(144)	

In this study programs A and C in terms of the consequence are equal, because the possibility of 1/4 for winning three prizes is exactly program C in the second question. Program B offers $1/4 * 4/5 = 1/5$ chance, that it is exactly the same as program D in the second question. Nevertheless, these results indicate that %66 of members chose program A and only 29% selected programs C. this indicates the occurrence of conflict in people's choices, which prove that the effect of frame has been applied.

In an interview with the subjects who had chosen program D (71% of subjects) after collecting and analyzing the questionnaires' information, the experts stated that by only taking 5% ($1/4 - 1/5 = 0.5$) more risk (in second question) they can raise their awards up to 66% ($5 - 3/3 = .66$), which is a logical reasoning, but when they saw their responds to the first question and comparison was possible for them, they were really astonished.

The results of Table VII shows that only 7% of people who chose option A in question 1, selected option C in question 2, therefore had a consistent decision, and from 71% of respondents who chose option D, 59% selected option A, the same people who had an inconsistent decision in 2 questions. Thus from the sum of these reasons, it can be admitted that by using pseudo certainty effect, around ($59\% * 66\% = 0.39$) 39% of reward costs might be decreased and by taking the costly rewards the experts demand, this amount of reduction could be very cost-effective.

Table VII: Study_1 × Study_2 Cross Tabulation.

		Study 4_2		Total
		Variable3	Variable4	
Study 4_1	Variable1	7%(14)	59%(120)	66%(134)
	Variable2	22%(44)	12%(24)	34%(68)
Total		29%(58)	71%(144)	100%(202)

The quantitative measured amount of reduction level in the expenses is one of the significant implications of this article, for example to our knowledge in other researches of framing area the amount of its effects had not been measured in a tangible manner before.

Interestingly pseudo certainty method works even for experts that have been working in idea bank for a long period of time. This claim is arisen from the experts' cooperation experience in the idea bank during their operation and always a slightly more or less of this rate of expense reduction has been recorded.

4.4 Study 4

The purpose of this study is the investigation of PAD function in the idea bank. In this study, it is assumed that it might be possible to provide the establishment for long term cooperation with experts by designing issues weekly or monthly and offering the award for the each time, just as prorating a major expense to smaller parts to acquire benefit. The important point in using this technique is the similarity of field problem with experts' specialized area. It would

be worth mentioning that questions 1 and 2 in stage 1 and the third question have been examined two months later.

Questions:

1 - In your opinion, to what degree will you be motivated to have ongoing cooperation with the idea bank, in a way that you get the expressed problems on a weekly or monthly basis and related to your specialized field in the idea bank and for which you present an acceptable area. In addition for each time of idea presentation and assessment from bank, you will receive reward:

2 - if you averagely donate \$300 per years to a worthy cause, how much you prefer to donate 85cents per day over donate \$300 once entirely?

3 - if you averagely donate \$300 per years to a worthy cause, how much you prefer to donate \$300 once entirely over to donate 85cents per day?

Results and Discussion

The result of chi-square ($P\text{-Value} < 0.05$) in Table VIII shows that the proportion of choices is not equal. Mean of responds in first question ($M=3.77$) represents the upward trend of answers which means most of respondents believe that the weekly and monthly ideation with respect to their specialized fields, cause more motivation for continues cooperation in the idea bank. Also second question results indicate the upward trend that means most of experts prefer instead of paying the whole \$300 at once, 85 cents for each single day (that is a sign of the effectiveness of PAD strategy). Besides, results of correlation in table 9 represents the direct relationship between questions 1 and 2. The result of mean in question 3 ($M=2.64$) is an evidence of downward trend and less propensity of them for paying \$300 at once instead of paying 85 cents daily. In addition between question 3 and questions 1 & 2 an inverse relationship is established (see Table IX) this set of results can make the usage of PAD in the idea bank acceptable.

Table VIII: Descriptive Statistics of the Study4.

STUDY4	Mean & Std. Deviation	Options	Percent(N)	Chi-Square (P-Value)
Study 4_1	M=3.77 S=1.20	Very Low Low Medium High Very High	6%(13) 10% (21) 16% (33) 33% (67) 34% (68)	65,62 (0.00)
Study 4_2	M=3.37 S=1.26	Very Low Low Medium High Very High	11% (22) 14% (28) 23% (46) 32% (65) 21% (42)	34,88 (0.00)
Study 4_3	M=2.64 S=1.19	Very Low Low Medium High Very High	16% (32) 39% (78) 20% (41) 16% (33) 9% (18)	50,52 (0.00)

What makes PAD more effective is that, the service provider (i.e., here the idea bank agents) must be able to recognize the stockholders' (i.e., experts) needs and wants otherwise there

is no motivation for the expert to analyze and comparison the cost and benefit of the transaction.

Table IX: Coefficient Correlation of Study 5.

Variables	Coefficient Correlation (P-Value)		
	Study 5_1	Study 5_2	Study 5_3
Study 5_1	1	-	-
Study 5_2	0,61(0.00)	1	-
Study 5_3	-0,43(0.00)	-0,70(0.00)	1

Using this strategy in the idea bank is one of the important implications of this article. In no other articles it is seen to use this strategy except for prorating large monetary expenses to smaller parts for encouraging the propensity to purchase or doing a task. The usage of this strategy in other nonmonetary areas could be regarded a potential subject for future studies.

The main limitation of the present study was the restricted number of experts in the idea bank. Since the purpose of this study was to investigate the framing effects in the idea bank and the specified sample must have been chosen from the idea bank's experts, we were confronted with the limited number of experts. That's why we had to implement questionnaire in two stages with two months lag. Otherwise the subject may understand the manipulation trick that had been used and in this case the results of this study would not be reliable. In this study a limited number of framing effects have been investigated. By taking the results of the study into consideration, it is evident that some of the primary theoretical constructs of framing area and mental accounting could be employed in the idea bank; therefore it is possible to be able also to investigate other constructs of this area in the idea bank and similar systems in organizations. This item is one of the other limitations of the present study which is equipped with good potential for future studies.

5. CONCLUSION

In this paper we investigated application of framing effects and mental accounting across four studies. We have shown that application of sunk cost, bundle/unbundle framing of outcomes and Penny-a-day strategy in generating ideas in the idea bank like any monetary transaction in the real world make a subjective account for the expert This account would have similar features as a account in the mental accounting domain. This is investigated respectively in the study 1, 2 and 4. Finally in the Study 3 we showed that how Pseudo certainty effect could reduce idea bank's awards expenses even the amount of reduction illustrated quantitatively. We believe our work contributes to a more Innovative view at framing effects and its psychological effects on effectiveness of expert's decision making in the idea bank also the results of this study might be applied similarly in enhancing the productivity of the any suggestion systems in an organizations or even in contributing of experts in social networks.

ACKNOWLEDGEMENT

We thank Joun Gourvill for many helpful comments.

REFERENCES

- [1] Kahneman, D.; Tversky, A. (1979). Prospect Theory: an Analysis of Decision under Risk”, *Econometrica*, Vol.47, pp. 263-291
- [2] Tversky, A.; Kahneman, D. (1981). The framing of decisions and the psychology of choice, *Science*, Vol. 211,pp. 453-458
- [3] Thaler, R. H. (1999). Mental Accounting Matters, *Journal of Behavioral Decision Making*, Vol.12, pp. 183- 206
- [4] Jonson Laird, P. (1983). *Mental Model*. Cambridge, MA: Harvard University Press.
- [5] Druckman, J. N.; Nelson, K. R. (2003). Framing and Deliberation: How Citizens' Conversations Limit Elite Influence, Vol.47,pp. 729-745
- [6] Soman, D.; Gourville, J. T. (2001). Transaction Decoupling: How Price Bundling Affects the Decision to Consume, *Journal of Marketing Research*, Vol.38,pp. 30-44
- [7] Thaler, R. (1985). Mental Accounting and Consumer Choice, *Marketing Science*, Vol.4, 199-21.
- [8] Emami, A.; Zarei, B; Ebrahimzadeh, M. (2011). Citizen participation and framing effects: an empirical study in Tehran municipality idea bank, *Global journal of human social sciences*, Vol. 11(accepted manuscript)
- [9] Kessler, E. H.; Ford, C. M.; Bailey, J. R. (1996). Object valence as a moderator of the framing effect on risk preference, *Journal of Economic Behavior & Organization*, Vol.30,pp 241-256
- [10] Levin, I. P.; Schneider, S. I.; Gaeth, C. J. (1998). All Frames are not Created Equal: a Typology and Critical Analysis of Framing Effects, *Organization Behavior and Decision Process*, Vol.76, pp. 149-188.
- [11] Emami, A.; Talebi, K. (March, 2011). The effect of framing on experienced and nascent entrepreneurs' judgment and decision making, proceeding of the international conference on economic, business and marketing management, IEEE indexed, Shanghai
- [12] Baron, J. (2008). *Thinking and Deciding* (4th edition), Cambridge, University press, UK, 2008.
- [13] Kahneman, D.; Tversky, A. (1984). Choices, values, and frames, *The American Psychologist*, Vol.39, pp. 341-350
- [14] Huang. Y, Wang. L.(2010). Sex differences in framing effects across task domain, *Personality and Individual Differences* Vol.48,pp. 649–653
- [15] Druckman, J. N. (2001). Using Credible Advice to Overcome Framing Effects, *Journal of Law and Economics & Organization*, Vol.17,pp. 62-82
- [16] Ena Inesi, M. (2010). Power and loss aversion, *Organizational Behavior and Human Decision Processes*, Vol.112, pp. 58–69
- [17] Kahneman, D.; Knetsch, J.L.; Thaler, R.H. (1991). Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias, *the Journal of Economic Perspectives*, 5, 193-206.
- [18] Soman, D. (2004). Framing, Loss Aversion and Mental Accounting. In N. Harvey & D. Oehler (Eds.), *Handbook of Judgment and Decision Making Research* (pp. 379-398). Blacwell, London, England
- [19] Keasey, K.; Moon, P. (2000). Sunk cost effects: a test of the importance of context. *Economics Letters*, Vol.66, 55–58
- [20] Read, D.; Loewenstein, G. and Rabin, M. (1999). Choice bracketing, *Journal of risk and uncertainty*, Vol. 19, pp 97-171
- [21] Hasseldine, J.; Hite, P. A. (2003). Framing, gender and tax compliance. *Journal of Psychology*, Vol.24, 517- 533
- [22] Arkes, H. R.; Blumer, C., “The Psychology of Sunk Cost”, *Organizational behavior and human decision processes*, Vol. 35,pp. 124-140, 1985.
- [23] Leboeuf, R.; Shafir, E. (2003). Deep Thoughts and Shallow Frames: On the Susceptibility to Framing Effects. *Journal of Behavioral Decision Making*, Vol.16, 77–92