

1 Citizen Participation and Framing Effects: An Empirical Study
2 in Tehran Municipality Expert Idea Bank

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6

7 **Abstract**

8 Nowadays the societies which are confronted with significant challenges that dealing with
9 them have become the most important concern of the urban managers. Although the
10 managers are considered to be responsible in this regard, citizens might be able to play an
11 even better role by presenting their ideas for cities' problems. Tehran as a metropolis is an
12 example of those cities on their ways to modernization facing with emerging problems and
13 issues. From 2009 a system for accumulation and surveillance of these ideas, is nominated
14 ?Idea Bank?, is implemented. The Idea Bank is introduced and the impact of the framing
15 effects on experts' judgment and decision making would be analyzed in this research. A
16 sample of 202 expert members of the system is investigated. Based on the obtained results,
17 idea generation resembles expenditure of money in order to buy a good or use a service and
18 from the mental accounting point of view, it creates a mental account. In this research we
19 have indicated that how the conflicts arising from framing effects in people's decision making,
20 could influence experts' decision and judgment for prevention of closing the accounts
21 containing loss, therefore, hazards concerning these effects should be considered as a critical
22 factor for effectiveness of the idea bank.

23

24 **Index terms**— Framing Effects, Mental Accounting, Citizen Participation.

25 **1 INTRODUCTION**

26 ric Hofer states that "It still holds true that human beings are the most uniquely human when they turn obstacles
27 into opportunities" ??Baron and Shane, 2008, p. 38). Opportunity is a situation in which a person can exploit
28 a new idea that has the potential to create a benefit ??Baron and Shane, 2008). During recent years, with
29 considerable expansion of Tehran, capital of Iran, the municipality, has been always encountered with critical
30 problems in effectiveness and efficiency of delivering services to citizens, for instance mismanagement, misconduct
31 of projects and misallocation of resources.

32 To overcome these problems, the municipality needs to codify different kinds of long and short term plans.
33 Those plans must have especial attributes like: applicability, effectiveness, efficiency with consideration of
34 opportunities, threats, weaknesses and strengths. Therefore the Strategic Committee department of municipality
35 crucially needs outward ideas from experts of all related civic fields; and a database for scrolling and maintaining
36 the ideas, based on which a system would be enabled to collect the best ideas and have those mentioned attributes
37 for the municipality senior managers. it is called " Municipality Idea Bank "which is able to collect a variety of
38 ideas and can provide many opportunities. By developing such an idea bank, two results will be achieved for the
39 municipality: first solving its own problems, second, increasing the level of citizen participation. Success of this
40 system would dependent on subjective values of participants.

41 In current study on the one hand we advance our knowledge about the necessity and the activities of the Idea
42 bank, and on the other hand, we discuss that how neglecting the subjective values that are influenced by framing

4 2) FRAMING EFFECT

43 effect could jeopardize the efficiency and effectiveness of the idea bank. Furthermore, in this paper we argue that
44 the idea generation as well as making payment in advance would create a mental account which to our knowledge
45 is not investigated in an unique context like an idea bank.

46 The literature review section covers two areas: citizen participation and idea bank, and framing effects. After
47 describing the research method, empirical tests would be applied. Then the paper discusses the studies' findings
48 and implications and finally conclusion.

49 2 II.

50 REVIEW ON FRAMING AND CITIZEN PARTICIPATION STUDIES

51 3 1) Citizen participation and Idea Bank

52 Cities are known as complex systems which have become a challenging phenomenon for all urban managers.
53 Therefore any planning tools recruited must contain innovative and sophisticated attributes, otherwise monitoring
54 will face many obstacles (Rotmans, Asselt & Vellinga, 2000). In purposeful citizen participation system, the
55 voice of members must be listened in the clearest way and the system should provide transparent participation
56 opportunities for the members (Adamson, 2010). This facilitates urban society to have ideal conversation with
57 agents (i.e., service providers in the city) (Adamson, 2010). In the literature of social engagement it is clearly
58 mentioned that agents' authorities have been considered more responsive in ensuring the engagement, partnership,
59 willingness and capacity of community. The modern society, nowadays, is faced with problematic phenomena
60 such as: Increasing growth of cities, emergence of cluster cities, environmental opportunities and threats, social,
61 political and economical matters, decreasing quality of urban life, rapid change of connection between urban
62 and rural areas ??Berner, Bogoyavlenskaya, Lliushin , Kovalev, Rochtchin, 1995;Rotmans, et al., 2000). As it
63 is mentioned earlier, these are the complicated tasks that urban managers need to resolve. Great "ideas" might
64 be one of the best solutions here. Weiss and Carayannis explain "idea" as 'normative or casual beliefs held by
65 individuals that influence their attitudes and actions toward economic and social development'. In addition, an
66 integrated system of gathering ideas and opinions from citizens' experts is required to provide valid and real time
67 information for city top level managers, (Berner, et al., 1995; ??otman, 1998). To achieve this aim, since 2009
68 an expert's Idea Bank is established in Tehran municipality. Experts groups by generating their ideas, influence
69 policies and programs of the city especially at the time of uncertainty (Haas & Haas, 1995). "Global Ideas Bank"
70 and "Idea A Day" are two Famous similar examples of idea bank around the world, the first started in 1985 and
71 the second founded in London in 2000.

72 The mission of the Idea Bank in Tehran municipality is to use synergy of expert citizens' participation in
73 solving their own city's problems; it is the feature that may distinguish it from the other idea banks. The Tehran
74 idea bank is a website where people post, exchange, discuss, and polish new ideas indirectly with the managers
75 of the city, therefore, it is as part of the municipality's management information system. These experts analyze
76 every event from variety points of view (Weiss & Carayannis, 2001). A good idea is often generated through
77 discussion. Whatsoever, an idea evolves through more different and contradictory points of view (e.g., in a
78 cross-cutting group), would be more rational and mature (Mutz, 2002;Druckman, 2003) that is why in our civic
79 deliberation network we use ideas and opinions from different expertise.

80 When the ideas are gathered and evaluated by its unique net base system, the best ideas will be chosen by the
81 idea bank's agent. such ideas are then sent to Tehran Municipality Strategic Committee department (TMSC) in
82 order to be applied in solving problems and modifying the projects.

83 There are two ways to receive ideas by the idea bank:

84 ? Random idea: when an expert contributes her/his idea for a special case. In this way, the municipality has
85 not asked for the idea but he or she has considered the idea useful and the municipality can make use of it later.
86 After the idea has been assessed, it will be sent to TMSC for future action. ? Planned idea: The municipality
87 has specific problems and enquires about experts' ideas. In this way, it is generally assumed that the application
88 of the offered ideas would be possible within a short time. So the process of evaluation is very controversial and
89 takes more time. Similaryafter the idea evaluatio it will be sent to TMSC. The first kind of idea is adhoc, so
90 it can be concluded that most of the procedures in the idea bank have been assigned to the second alternative
91 although framing methodology has been planned for both kinds of idea generation.

92 It is not possible to impulse experts by a rigid system of compensation (e.g. merely paying money), because
93 they expect to receive a variety of equilibrates for sharing their ideas. The idea bank compensation system must
94 be flexible enough to compensate the citizen valuable contribution by providing them with the best possible
95 portfolio of prizes.

96 4 2) Framing Effect

97 Framing is one of the most famous controversial issues, which deviates from the rational decision theory (Tversky
98 and Kahneman, 1986). Judgment and decision making are very sensitive to the way that decision outcomes
99 are manipulated (Kahneman & Tversky, 1971;Tversky & Kahneman, 1981;) whether this manipulation, aims at
100 challenging the willingness to risk, simply evaluating of an object or persuading a communication (see., Levin
101 et al., 1998). Basically rational decisions follow the normative model of expected-utility theory (Baron, 2008).

102 According to this model, decision outcomes should not violate the principle of description invariance (Kahneman
103 and Tversky, 1984). Based on this principle the way that a decision scenario is manipulated in different states or
104 situations should not change individual choices. But in framing manipulating of a decision problem is diffrent,
105 even contradictory choices would be made. Because it objectively emphasizes part of the problem's information
106 that biases people's decision to a choice that does not follow a rational process, it rather follows subjective values.
107 (Kahneman and Tversky, 1984).

108 Daniel Kahneman and Amos Tversky in 1979 proposed a descriptive theory of decision utility, which is called
109 "prospect theory" (see Fig. ??). This theory illustrates the famous type of framing called Riskychoice framing,
110 because it can challenge people's judgment by risky vs. certain options. (Kahneman and Tversky, 1979;Tversky
111 and Kahneman, 1981). It is the most widely used type of framing in researches (Levin et al., 1998;Huang and
112 Wang, 2010). In this type, "individuals tend to prefer risk-averse alternative when the outcomes are framed in
113 term of gains (e.g., saving lives, making money), but shift to preferring risk-seeking when the equivalent outcomes
114 are framed in terms of losses (e.g., dying, losing money)"(Druckman, 2001, P.63). For instance in the most widely
115 cited risky choice framing (i.e., Asian disease problem) 72% of the answers biased to the certain choice in positive
116 format and 78% of answers biased to risky choice in negative format (see, Tversky and Kahneman, 1981).

117 Variations of Asian disease problem have been used in many researches (see Druckman, 2001;Huang and
118 Wang, 2010). Therefore one of the objectives of current study is to verify risky choice framing by using Asian
119 Disease format, while it contains idea bank's outcomes (Experiment 2),because if this verification occurs, it would
120 strengthen the existence of some framing effects that are consider in the idea bank (like, loss aversion, status
121 quo, and sunk cost).

122 Prospect theory contains one of the most robust human biases called "loss aversion" and is defined as the
123 individual tendency to avoid losses in exchange for obtaining equal gains (Tversky and Kahneman, 1981;Inesi,
124 2010). This bias causes risk seeking behavior because from psychological point of view losses (e.g., losing 1000\$)
125 seem more painful and tormentor than equal gains (e.g., gaining 1000\$) (Kahneman and Tversky, 1979;Tversky
126 and Kahneman, 1981).The result of this dissatisfaction in risky framing, biases decision to more risky choices.
127 It is necessary to say that in the idea bank contributing an idea equates paying cost, and Obtaining award/s
128 or satisfying expectations is similar to the gain. Kessler, Ford and Bailey (1996) found that loss of a favorable
129 object produces a negative value in prospect theory .This is retrieved from mental accounting studies.

130 Loss aversion has been identified to be related to the number of important biases in decision making, including
131 sunk-cost effect and Status quo bias and Task Framing (soman, 2004).

132 Sunk cost occurs when a person pays the price of a service or good in advance or has a previous investment in
133 something then opens a mental account for the service (Thaler, 1999;Soman, 2004). A person can simultaneously
134 open different mental accounts for different services and if the sunk cost be greater the pressure of using the service
135 increases, (Garland and Newport, 1991;Soman, 2004). The account will close when the person gains the same
136 value by consuming the service (Keasey and Moon, 2000;Soman, 2004). Therefore an expert who contributes an
137 idea might creat creates a mental account and it will be closed when obtain an award (or gains) from the idea
138 bank. Hence sunk cost is not just limited to monetary matters.

139 Status quo bias occurs when people have a willingness to remain at the status quo (Samuelson and Zeckhauser,
140 1988). The disutility of giving up current solution or situation looms greater than utility of gaining the new
141 alternative solutions or situation (Thaler et al., 1991). Also people tend to feel more gain by the default condition.
142 ??Kahneman et al., 1991). Even by introducing a state as a default option to a person (i.e., the person has not
143 experienced it before), it makes them more committed to the status quo to avoid loss feeling (Burmeister and
144 Schade, 2007).

145 Positive features of an option motivate choosing it, in contrast negative attributes of an option discourage
146 selecting it (Shafir, 1993;Levin et al.,1998) this is called "Task framing". According to hazard of these biases, In
147 the idea bank which is suppose to collect the best ideas, there should not be any oriented means to direct the idea,
148 deliberately or un-deliberately, to a special object; otherwise, the framing effect would occur. In manipulating
149 of the problem only the necessary material and information should be provided, and also the experts should feel
150 free in making decisions and contributing their ideas.

151 5 III. METHOD 1) participants

152 The participants were 202 adults (129 male and 73 female). Experts in our idea bank consist of different groups of
153 dongs, lawyers, engineers, managers, hygienists, treatment experts, consultants, and social experts. Ages ranged
154 from 25 to 67, with a mean of 39.47 years (SD= 6.65). The population was experts living in Tehran and had
155 contributed in the idea bank before.

156 6 2) Research design and procedure

157 The questionnaires were distributed among experts. The experiments 2 performed in two phases. In the first
158 phase half of the questions are asked and the rest were asked two months later. Since understanding the questions
159 was necessary for the respondents, we performed an interview after each question. These interviews authenticated
160 the reliability and stability of responds. Also one question appeared at the end of the experiments: "How clear
161 were the questions in this questionnaire?" to check the clarity of the experiment tool (Hasseldine and Hite, 2003)

10 TABLE3. FREQUENCY DISTRIBUTION IN

162 responds recorded on a 1 (very unclear) to 9 (very clear) scale. Another technique we applied for validation of the
163 questionnaires was acquiring the opinions of five academic professors and applying the required modifications.
164 The experiment 1 asked the subjects to indicate their likeliness on a five point respond scale, on which to respond
165 (1="very low", 5="very much"). And in the experiment 2, we asked subjects to respond double choice questions.
166 IV.

167 7 RESULT 1) Experiment 1-Sunk Cost Effects

168 The objective of presenting this study is to investigate whether a person would be likely to continue contributing
169 ideas after investing other ideas into the idea bank without success (i.e., loss). According to the system report,
170 experts in idea bank can be categorized in to 3 parts. The first part is those experts whom have more than
171 60 % rate of idea acceptance and the second and third respectively have between 40%-60% and less than 40%
172 .Therefore, we consider it in grouping our sample as control condition factor. The Experiment's question: Imagine
173 you are expected to receive a concert ticket of your favorite singer in VIP part from idea bank as your requested
174 award for your accepted ideas, but unfortunately your ideas are not accepted. How likely you are to continue
175 contributing your ideas for the next round? (Note that this ticket could cost you \$50 if you wanted to buy it
176 yourself)

177 8 Results

178 The descriptive data are provided in Table ???. A T-test implied to examine the difference of means between
179 categories in three states. The output is illustrated in Table ???.

180 The result of the statistics shows that the means are not equal in each test (P-Value<0.05). Especially there
181 is significant different between the means in second test (P-value < 0.00).it can be inferred from the tables that
182 those who has more failure rate of ideas are more likely to continue contributing ideas in future. In contrast
183 the experts whom are the owner of winning rate are less concern about future contributions. So it might be
184 concluded that the members' enthusiasm to avoid the loss impression in the idea bank (i.e., closure of a mental
185 account containing loss of missing a reward), creates a stronger sunk cost.

186 2) Experiment 2-Risky Choice framing Several studies have supported the validity, and reliability and internal
187 consistency of the risk framing (e.g., Druckman, 2001). This experiment has been retrieved from Asian disease
188 problem by considering the idea bank outcomes in order to find out to what extent framing effects can bias
189 members' judgments and decision making. We had to implement questionnaire in two stages with one month lag.
190 Otherwise the subject may understand the manipulation trick that had been used and in this case the results of
191 this experiment would not be reliable. The expressed questions in this experiment are as follows:

192 Imagine that your idea is accepted by the municipality and your expected awards are 6 subjects but in the very
193 same time the municipality is dealing with some problems and this causes some limitations for the municipality.
194 Therefore it will not be able to provide you the whole 6 subjects, rather you are provided with two alternative
195 programs to compensate your efforts, Assume that the exact scientific estimation of the program's consequences
196 are as follows: Question 1:

197 -If program A is used, you can gain 2 of your expected awards for sure.

198 -If program B is used, there is a one-third probability that you will obtain the whole 6 awards and a two-third
199 probability that no awards will be acquired.

200 9 Question 2:

201 -If program C is used, 4 of your expected awards will lose.

202 -If program B is used, there is a one-third probability that none of your expected award will lose and a
203 twothirds probability that you will lose the whole 6 awards from municipality. Obviously in question 1 program
204 A contains positive and certain information and program B offers positive and risky information, while in the
205 second question, program C includes negative and certain information and program D provides a negative and
206 risky outcome.

207 In Table ?? the frequency of responds to each one of the programs are shown. On one hand although programs
208 A and B in question 1 are identical with programs C and D in question 2 are equal from the consequence point
209 of view, there is a meaningful difference around %39 (65- ??6 & 74-35)between them. On the other hand
210 a Nonparametric chi-squared test,?² (1, N=202) =19.03, P<.05 in first question and ?² (1, N=202) =64.34,
211 P<0.05 in second question shows that in %95 confidence level, the proportion of the responds are not the same.
212 This result supports the prospect theory principals in the idea bank, consequently when the decision outcomes
213 are presented in positive way, the experts would be risk averse. On contrast if those outcomes are offered in
214 negative way they would be risk taking.

215 10 Table3. Frequency Distribution in

216 The result of sunk cost in this research is of great value especially because it may open a path to apply proved
217 mental accounting's theories and principles in the idea bank or other similar information systems that is the
218 theatrical contribution of this study. For instance we can mention "hedonic effect" principle (Thaler, 1985(Thaler,
219 , 1999)) which is retrieved from mental accounting literature. The implications of this principle have been

220 introduced in researches (for further study see Thaler, 1985, Soman, 2004) especially in marketing. To increase
221 the subjective value of individuals in a transaction:

222 1. Integrated Losses 2. Segregate Gains 3. Segregate small Gains from big Losses (well known as" Silver
223 Lining" Principle) We can exemplify the implication of each mentioned principle above to satiate expert more in
224 the idea bank. According to the first principle when the idea bank has received some ideas from an expert it is
225 better to inform the rejected ideas all together at the time of notification of the result rather than notify each
226 (failed idea) one by one. For the second principle if an expert expects to receive a portfolio of wards, it is more
227 effective to provide his/her awards separately for example assigning 5 awards in 7 days rather than whole in one
228 day. And finally imagine that the idea bank has been faced with financial problem in a period of time which is
229 not possible to compensate the expert's for their contribution (especially when the promised award/s costs a lot)
230 by whole award/s the third principle suggest that never postpone the awards for the future in this exceptional
231 case rather it is very convenient to inform them friendly the current circumstance of the idea bank and provide
232 them their award as much as possible this help to lessen the perception of loss in their mental account otherwise
233 the inclusion of the loss in their mental account hamper future cooperation with the idea bank.

234 **11 VI. CONCLUSION**

235 People select opposite solutions for their problem in a same situation because of the framing effects. This
236 paper discusses the outcomes of framing effects on judgment and decision making in the idea bank with a real
237 experience from the idea bank. In the first Experiment we discussed that generating ideas in the idea bank similar
238 to monetary transactions creates a mental account for the expert therefore it is suggested that the theories and
239 principles which are in domain of mental accounting could be applied in idea bank or other analogous management
240 information systems the "hedonic effect" considered as an example here. In the second experiment the risky choice
241 framing applied in order to show how framing effects can cause contradiction in experts' judgment and decision
242 making. We insist that awareness about hazard and opportunity that framing problems cause is as necessary
243 as budgeting and planning for survival of the idea bank. Finally the implication of framing effects and mental
244 accounting for increasing the level of individual participation would be suggested for the future studies. In
245 this study a limited number of framing effects have been investigated. By taking the results of the study into
246 consideration, it is evident that some of the primary theoretical constructs of framing area and mental accounting
247 could be employed in the idea bank; therefore it is possible to be able also to investigate other constructs of this
248 area in the idea bank and similar information systems.

249 **12 VII. Acknowledgement**

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Category	Mean	N	Std. Deviation
MORE THAN 60%	2.4062	32	1.26642
BETWEEN 40%-60%	3.2838	74	1.30877
LESS THAN 40%	3.7083	96	1.16001
Total	3.3465	202	1.30773

Figure 1: Table . 1

250 1 2 3 4 5

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		Table4. Experiment 1_1 × Experiment 1_2 Cross Tabulation		
		Experiment 1_2	Negative	Certain
		Experiment 1-1	Positive	14%(28)
Chi-Square(P-Value)	19.03 (0.00)	1-1	Positive	12%(25)
			Risky	
		Total		26%(53)
Chi-Square(P-Value)	64.34 (0.00)	Percent on Questions	Percent on Questions	
		Program A	Program B	
		65%(132)	35%(70)	
		Program C	Program D	
		26%(45)	74%(158)	
		Program A	Program B	
		1	2	
		Program C	Program D	
		2	3	

In table 4 the cross tabulation instrument has been applied to better explanation of the relationship between two questions. The interesting point that is indicated in this table is that 28 (%14) out of 202 experts who had chosen program A (positive-certain), selected program C (negative-certain) in second question and also only 45 experts (%22) who had chosen program B in question 1, selected program D (negative-risky) in second question. This result explicitly indicates the inconsistency in selection, which is a consequence of framing.

Figure 2:

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