

Research on the Mechanism of Framing Effect Leading to Irrational Decision Making

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Abstract. The framing effect is the comprehension and evaluation of diverse ways of behaving by people when facing distinct options that were expressed with identical meanings, which will cause irrational decisions to happen while people are facing situations with the framework. And analyze the problems. In addition, there are not many papers covering both the mechanism and suppression methods of the framing effect at the same time, so this study attempts to fill in the gaps by studying relevant cases. This study aims to link causality and explain the flow of action of the framing effect by studying the mechanism by which the framing effect causes bias and the effects of reducing or addressing bias, and the research can conclude that people could debias the framing effect by using logical thinking or getting advice from other peoples who are a party to the framing effect.

Keywords: framing effect; goal framing; irrational decision; debias.

1. Introduction

"A person's behavior is guided by his desire to release unsatisfied desires" - this is Freud's pleasure principle, he believes that the goal of human life's psychological activities is to pursue pleasure, avoid pain, and indulge one's desires can bring great joy and satisfaction. In the current era of rampant consumerism, payment methods are more convenient and consumption channels are more diversified. In this case, merchants have also derived various methods to guide customers to consume, such as framing, anchoring, or loss aversion. They may use directional slogans or change the layout of advertisements to promote consumption. Under different expressions, consumers are often affected and make irrational impulsive consumption decisions without deeply thinking about them.

Therefore, this study investigates some mechanisms by which framing effects lead to irrational decision-making and proposes some options for controlling the effects. This paper hopes to explain the mechanism of the framing effect through research and to explore some effective control of the effect of the framing effect on people. Therefore, the author studies and analyzes some related research to explain the core issues of the article.

2. Literature Review

2.1 Framing Effect Theory

The framing effect theory was discovered and proposed by Tversky and Kahneman in the famous "Asian disease problem" [1]. Cognitive biases further affect their decision-making behavior. In this case, when the decision problem was presented to the subjects in a positive frame (emphasizing how many people would be saved), the deterministic option (100% of 200 people would be saved) was compared with the risky option (1/3 probability that 600 people would be saved). rescue), even though the expected value of the two choices was the same at this time, the results showed that 72% of the people tended to choose the former; when the decision problem was presented to the subjects in a negative frame (emphasizing how many people would die), the results showed that 78% of people tend to choose the risky option. That is, people's attitudes about risk will alter when the same issue is presented but the framework is inconsistent. Specifically, when the decision problem presents in a favorable side, individuals are likely to be certain, and when it presents a bad aspect, they tend to prefer risk.

2.2 Irrational Decision

Decision-making is a high-level cognitive process and the core content of intellectual activities. Decision-making mainly involves evaluating and choosing various alternatives according to one's own desires and core convictions, which often consumes many cognitive resources. However, regarding the specific explanations and related definitions of decision-making itself, academic circles have not been able to give a unified view. Modern behavioral psychologists have conducted many experimental studies and found that in most cases, people's decision-making behaviors are not all rational. An efficient ideal behavior model hypothesis exists in conventional classical economic theory. However, what is particularly surprising is that most people's attitudes and behaviors towards risk often deviate from this work mode and irrational deviations occur. At present, the most common deviations belong to the intuition deviations that can often occur in life. In the actual decision-making process, not only the intuition deviation will occur, but also, the dependence deviation on the content of the framework will occur, such that, people frequently choose incompatible solutions to the same problem at various times, sometimes in radically opposite ways.

3. Case Study of Framing Effect Causes Irrational Decision Making

3.1 Research on the Influence of Frame Effect on Indulgent Consumption

This experiment done by Cui and Li interpreted the relationships between goal framings and the irrational decision making [2].

According to the topics (food and clothes) that are great concern to contemporary young people and the two essential fields (health and wealth), researchers take restaurants and clothes as the stimulus in the experiments, and the MBA students as well as the ordinary university students in China to be the experimental subjects for the research.

3.1.1 Application Case of Framing Effect in Food Consumption

Many people think that having dinner outside will be easy to gain weight, and the food is unhealthy, while it will also cause unnecessary expenses [3]. To ensure that the consumption of a delicious but high-calorie restaurant with some long-term goals will be generally considered an indulgent consumption behavior, the researchers randomly selected 35 participants for a pre-test by telling them that indulgently consumption behavior could bring short-term enjoyment, whereas it will lead to some negative effects in the long-term perspective. After that, the participants were asked whether the consumption of a "delicious, but high-calorie restaurant" is indulgent consumption behavior, and the results show that most participants (94.29%) agree with the given idea, which effectively ensured the rationality of the experimental stimulus.

The researchers recruited 205 participants with relevant long-term goals to fill out a questionnaire on consumer behavior. The participants were young people aged 26 to 36 years (52.08% were male; mean age = 32 years). The researchers randomly assigned participants to two groups (positive goal frame group, and negative goal frame group), and each subject received only one stimulus situation. The final effective sample size is N=192, and the sample size of each group is number of positive target frame=98, and number of negative target frame=94.

The information context of the positive framing group emphasizes the "benefits" of consuming the restaurant, and the information context of the negative framing group emphasizes the "losses" of not consuming the restaurant. Participants were then asked to evaluate their current cognitive dissonance, with nine problems including "I don't know if I really need to spend at this restaurant", and "I don't know if it's the right way to spend at this restaurant". At the same time, when measuring indulgent consumption, the subjects' purchase attitude towards this restaurant was evaluated, including 3 questions such as "this restaurant is attractive", and purchase intention, with "whether to consider consumption" and "consumption". possibility" and other five items. In addition, there is also an assessment of the participants' persuasive knowledge level, including 6 items such as "I can easily

perceive that the marketer is guiding me to consume", to detect the impacts of framing effect to consumer's indulgence.

The results show that the influence of positive target frame and negative target frame information on consumers' indulgent consumption behavior is different, in which under the negative target frame, consumers are more likely to indulge in consumption [2].

3.1.2 Application Case of Framing Effect in Cloth Consumption

To ensure that buying a "higher-than-expected price of clothes" is generally considered to be an indulgent consumption behavior, this study selected 38 participants for a pre-test (such as Experiment 1). The results showed that most of the participants (92.11%) believed that the behavior was indulgent consumption behavior, which effectively guaranteed the rationality of the experimental stimuli.

The researchers Cui and Li recruited 183 participants to fill out a questionnaire on consumer behavior [2]. The participants were young people aged 18 to 26 years (47.09% were male; mean age = 22 years). The researchers randomly assigned participants to two groups (positive goal frame group, negative goal frame group), each subject received only one stimulus situation. The final effective sample size is N=172, and the sample size of each group is number of positive target frame=86, and the number of negative target frame=86. Because of individual preferences are different, the experimenters instructed the participants to assume that they were facing a piece of clothing that they liked a little bit more than they expected. At this time, the positive target information situation emphasizes some "benefits" of buying this dress, and the negative target information situation emphasizes some "losses" of not buying this dress. The questionnaire scale was the same as that used in experiment one.

3.2 Framing Effect Perspective Case Analysis

In both cases, there are significant negative correlations between goal frame, persuasion knowledge, cognitive dissonance, and indulgent consumption scores, and negative emotion was significantly positively correlated with cognitive dissonance.

A negative goal framework can promote consumers' willingness to indulge in consumption, and individual cognitive dissonance plays a mediating role, which is moderated by persuasive knowledge. Specifically, consumers with a low level of persuasion knowledge have a lower degree of cognitive dissonance under negative target frame information, resulting in indulgent consumption behavior; while for consumers with a high level of persuasion knowledge, the mediating role of cognitive dissonance is not significant. Individuals with a lower persuasion level would be easily misled by the information given by merchants, because they are facing a situation about whether they will or will not have an indulgent consumption. With cognitive dissonances, people tend to adjust their attitudes toward things, to help relieve the discomfort caused by the conflicts. Also, consumers with a lower level of persuasion knowledge are more likely to adopt the given information, but not make logical investments. Therefore, it is easier for this type of person to make irrational decisions, such as indulging in consumption. Similarly, under the positive framework, because people with high persuasion knowledge levels are relatively less affected by cognitive dissonance and adjust their attitudes and thoughts, so they have less indulgent consumption behaviors.

4. The Mechanism of Framing Leading to Irrational Decision Making

4.1 Cognitive Resonance

Many studies have shown that cognitive dissonance can have a significant impact on consumer decision-making outcomes. Research has found that when negative attitudes that conflict with a particular behavior become stronger, this leads to negative emotions about the behavior, which could trigger psychological discomfort and behavior-change motivation [4]. For instance, the deceptive packaging of merchants will cause consumers cognitive dissonance, causing them to take certain negative post-purchase behaviors [5]. Also, fast food addiction will cause negative feelings and

emotions such as internal mental conflicts and cognitive dissonances, which can easily lead to the generation of consumers' anti-consumption behavior [6].

Consumers' cognitive dissonance toward companies or brands may also have a long-term and far-reaching impact. Cognitive dissonance could negatively affect consumers' customer satisfaction, and its increase will reduce customer satisfaction or even affect customer loyalty to the firm. Conversely, a more positive attitude towards consumption can increase consumers' purchase intention. Research has confirmed that green consumers who are concerned about the environment can find some objective justification to convince themselves, to change their attitude toward air travel and still choose airplanes as the means of travel [7]. Based on this research, it can be found that individuals tend to think and act following their cognition, and consumers are more likely to make positive purchasing decisions when their cognition tends to be consistent.

Indulgent consumption usually has some of the more negative effects on the individual, so people are often caught in a dilemma by questioning whether they need what they want to consume, and experience higher levels of cognitive dissonance related to consumption. At this time, the target frame effect can be used as a good marketing stimulus to make consumers change their consumption attitudes and justify their behaviors, thereby reducing cognitive conflicts and making the interior more harmonious. And this is equivalent to providing a good opportunity to justify giving in to temptation so that consumers psychologically expect the realization of their goals to achieve self-license and authorize consumption behaviors [2].

4.2 Persuasion Knowledge

Persuasion knowledge can moderate the mediating effect of cognitive dissonance between goal framing and indulgent consumption relationships. Specifically, for consumers with a low level of persuasion knowledge, negative goal frame information can reduce their cognitive dissonance, thereby promoting the indulgent consumption of individuals. Persuasion knowledge is usually derived from personal experience and reflection and is an important explanatory empirical knowledge [2]. It is usually defined in the field of marketing as the fact that consumers have a certain degree of awareness of the various behavioral motives and intentions, persuasion skills, and strategies of marketers. Consumers' persuasion knowledge is not rigorous cognition in the brain, it contains rational inferences and has perceptual knowledge, but it will grow accordingly with the increase of individual-related experience in different situations and will be gradually revised as well as improved [8]. Consumers apply persuasion knowledge to counteract marketers' influence on their product evaluation processes and purchasing decisions.

Consumers are no longer passive responders to marketing activities but have more positivity and self-awareness. They can use persuasion knowledge to be thinkers and active agents in marketing situations. Consumers with a high level of persuasion knowledge have higher sensitivity and evaluation ability to information. Such groups are more likely to identify the essence of information and offset the influence of marketers to a certain extent. For instance, Clerides and Courty found that most consumers will neglect the unit price information for the gift promotion of the products, but consumers with a high persuasion knowledge level will pay more attention to the price information in this situation [9]. However, if the individual's persuasion knowledge level is low, the marketer's induced behavior will still have a great impact on the consumer's cognitive bias. This is because consumers with low persuasive knowledge usually do not take precautions against the marketing methods of merchants and is not easy to doubt the behavioral motives of marketers, so their judgments on information and consumption behaviors are more perceptual compared to the other consumers with a higher persuasive knowledge level.

According to the psychology research on deceptive advertising, researchers found that customers with low persuasion knowledge are relatively less vigilant in marketing contexts [10]. Therefore, such consumers are not very sensitive to the persuasion motives and strategies of marketers. When individuals believe that information clues are credible, they will have more relatively positive reactions toward the products. In this situation, if consumers do not find the marketer's manipulation

intentions, they will think that the promotion is trustworthy, which tells that the products are beneficial, and then it is more likely to realize the purchase [11]. In general, negative target frame information will be more persuasive, especially for consumers with lower knowledge levels, the "loss aversion" effect may be magnified when facing the products they are more interested in, leading to the formation of a pro-consumption attitude, a higher degree of reduction in internal hesitation or a sense of dissonance, and thus indulgence of one's consumption behavior [3].

4.3 Goal Frame Effect and Indulgent Consumption

Prospect Theory believes that people usually choose risk aversion in the face of gains, while they are more inclined to pursue risk in the face of losses, and have a stronger response to losses, that is, "loss aversion" [3]. Indulgent Consumption is a kind of hedonic and pleasurable goal-oriented consumption behavior that has a negative impact on the individual's long-term goals or delayed harm to the individual. Although it can give consumers short-term and timely enjoyment and satisfaction, it may have many negative consequences for consumers from a long-term perspective. Previous studies on indulgent consumption also dealt with its adverse effects. Indulgent consumption behavior is also generally considered to be unhealthy, low self-control, and will produce negative emotions such as regret or guilt [12]. The meaning of the behavior of "indulgent consumption" is reflected in the word "indulgence". The goal framework emphasizes the achievement of goals and interests, which will have a higher appeal to consumers. At the same time, compared with the positive target frame, the negative target frame promotes the individual's attention to information and has a stronger persuasive effect, which may increase consumers' preference for the current product or service and stimulate consumers to a higher degree. consumption desire, thus making it easier to indulge their own consumption behavior.

Therefore, the influence of positive target frame and negative target frame information on consumers' indulgent consumption behavior is different, and consumers are more likely to indulge consumption under the negative target frame.

5. Countermeasures Against Framing Effects

Research shows that emotions, additional useful information, cognitive and analytical processing, as well as individual differences could debias the framing effect in various degrees, which can help people reducing the influences brought by framing in their daily decision [13].

5.1 Regulating Emotions

Emotions as a moderator of heuristics in human's mind, it could affect the way people think and result to different types of cognitive biases [14]. Given by that, research done by Miu and Crişan (2011) investigated whether emotion regulation could debias the framing effect. They designed the experiment to observe the trend of choices from gambling tasks with people using cognitive reappraisal (i.e., reinterpret the situation that people are facing, so the emotional impact on making decisions will decrease) or expressing suppression (i.e., prohibit people's behaviors that could connect to emotions, like face expression and gestures). The result of the experiment shows that cognitive reappraisal has a positive impact on reducing the framing effect [15].

Other than that, the study by Cassatti et al. (2012) researched whether a positive or negative emotion will affect the framing. The framing effect, they found, could be debias by emotionally favorable conditions, and the result demonstrates that the decisions made by participants after they had seen emotionally pleasant photographs didn't show any bias [16].

5.2 Providing Additional Information and Increase Involvement

The patients in Druckman's study are cut off from various forms of social connection, counsel, and warning, the researcher noted in his study. He underlined that since the two aspects of who gives

advice and who selects the advisor will interact, trustworthy counsel might be used to counteract the framing effect [17].

Druckman designed two experiments: the first one used the Asian Disease Problem as the base, and there are no differences between this research and the Asian Disease Research except that the choices changed from Program A and Program B to two political parties---Democrats and Republicans. The second study used the McNeil et al. (1892) research project, in which respondents will indeed have to choose between two anticancer agents with various frameworks; the augmentation of this research is that experiment. Both of Druckman's experiments demonstrated that the use of reliable counsel could be a powerful way to counteract the framing effect [18].

Another form of information, such as a warning, can be utilized to lessen cognitive biases like the outcome effect, anchoring effect, and hindsight bias. Simple warning words would alert people who are making decisions about the language of the options offered may lead them to display decision invariance, according to Cheng and Wu's study from 2010. In the experiment, they examined the effects of both involvements as well as warning. Cheng and Wu presented an electronic English Chinese interpreter to the participants and mentioned the accuracy and failure rate of the product, respectively, as the positive and negative frame. Given this information, they collected the participants' willingness of buying this translator. Then, they formed warning sentences with strong and weak levels, and informed the subjects, asking them to rethink carefully before making decisions about whether to purchase the translator. In the end, they collected all the databases and concluded that compared to the participants who did not receive the warning, the ones who receive it showed less framing effect on their decisions.

5.3 Encouraging Cognitive and Analytical Processing

Thomas and Millar (2011) evaluated elderly and young individuals in terms of promoting cognitive processing, and they found that in both groups, the size of the framing effect was reduced by promoting analytical processing. To enhance cognitive processing, they employed simple computational or memory exercises. In each of the four questions, Thomas and Millar gave two computational challenges that were simply multiplications of a given probability and an amount, which can be thought of as computing the expected value. They presented the gambling job within the context of the hazardous choice framework. In addition, either "think like a scientist" or "think like a gambler," they encouraged participants. directly promoting the operation of explicit cognitive processes in both the older and younger respondents. The results show that the framing effect of both methods is reduced [19].

6. Conclusion

6.1 Analysis Conclusion

Overall, irrational decision-making could be caused by the mechanisms triggered by the framing effect, which is the cognitive dissonances and persuasion knowledge, which could lead to indulgent consumption using goal framing. However, the framing effect is not insurmountable, through the mechanism research, there are three ways to overcome the bias that have been explored, which are emotional regulation, additional information, and analytical processes. Also, there are differences between different ways of framing, that negative goal frame could lead to more irrational consumption than the positive one, using the mechanisms listed above.

6.2 Outlook

Although there have been thousands of studies on framing effects in Western medical decision-making, there are surprisingly few studies on framing effects in Asia, especially in medical decision-making, suggesting that the traditional Western framing effect and decision theory may not be suitable for Chinese people. There isn't much pertinent research on the framing effect in Asia, and those that exist are virtually exclusively in the administrative and financial sectors.

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