Review in Psychology Research
June 2013, Volume 2, Issue 2, PP.15-21

Based on a Survey: Research Sport Consumer Behavior of Preference Reversal

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Abstract

This research explores the factors influencing the preference reversal of decisions under uncertain situations, via the inspection of preference reversal phenomenon in two conditions of information mutually and respectively provided. The conclusions on the following four aspects are: preference reversal doesn't exist in all sorts of problems, more difficult appears in collective problems; selection preference will be affected by the difference of problem characteristics; sex factor fails to have a great effect on selection preference.

Keywords: Preference Reversal; Prospect Theory; Expected Utility Theory; Consumer Behavior

1 INTRODUCTION

The preference reversal phenomenon firstly suggested by psychologists Slovic and Liditenstein, [2] means that personal preference is not the optimal choice expressed in traditional economic theory, but it is fluctuating. Many researches later all have proved the existence of preference reversal phenomenon.

To sum up, the previous researches have released some types of preference reversal phenomenon, one of which the preference reversal resulting from the change of external environment information, like the research of Highhouse in 1996 [2] is thought to be led by different information under different situations. However, preference reversal occurs in the condition of the same information under different situations. This preference reversal includes three types: the first is resulted from the different evaluation methods, for example, the examinee evaluates the selection in the research of Birhaum while the option values evaluated in the research of Tversky; [3,6] the second is resulted from the methods difference of information provision, as discovered by Hsee in his research, when the information for selection is "simultaneously" or "respectively" provided to examinee, the examinee will show the preference differences[5]; the third thinks that when some features of the options for selection is described by digitals, the positive and negative description will lead to preference change of examinee to options, and this kind of preference reversal has similarities with frame effect in characteristics.[4]

This research aims to further explore the realization conditions and influence factors of selection preference reversal via the verification of preference reversal phenomenon under the situations of information simultaneously and respectively provided. Problems in this paper are divided into personal and collective ones, and the difference of problem is also classified.

2 EXPERIMENTS

2.1 Purpose

Inspection on whether the preference reversal phenomenon exists or not when information is simultaneously and respectively given along with the exploration on whether the stability of selection preference will be affected by problems of different properties (individual and collective problem)and whether the selection preference will be influenced by the different characteristics of options; how selection preference will be impacted by gender factors have been done.

2.2 Methods

1) Examinee and Experiment Materials

Examinee: 370 physical-major students were selected from Southwest University and Chongqing University, of which there are 359 effective examinees, including 212 boys and 147 girls.

Experiment material: the material of this research is adapted from the material used in Hsee research. Below is the status when information is simultaneously given. [3]

Individual problem when information is given at the same time: you plan to buy a pair of tennis rackets, and find the rackets of two brands available in the shop. The two index information of these two brands listed in the following table, are both sold at the prices of RMB4, 500 to RMB5, 000. Please write out the prices you want to give for these two brands within the price range above according to the given information

TABLE 1 BRAND CONTRAST

	Brand A	**Brand B**
Design esthetic index	90%	40%
Brand establishment date	9	18

Explanation: the unit of brand establishment date is year

Collective problem when information is given at the same time: it is assumed that a school needs to recruit two tennis coaches with skill and specialty. The evaluation on two applicants Xiao Li and Xiao Liu is made at the table below. The school fixes the salary at RMB 1,500 to 2,000. If you are in charge of this recruit, please write the salaries that you will give these two applicants.

TABLE 2 CANDIDATES CONTRAST

	Xiao Li	**Xiao Liu**
Skills and specialties	80%	50%
Satisfaction	46%	82%

Explanation: a. the skills and specialties above mean the application ability percentage of tennis technology.

b. the satisfaction above means the satisfaction of previous students and parents to their teaching.

When information is respectively given, only one option is released to examinee, and the relevant information of options is the same as that when information is simultaneously given.

2) Experiment Procedure and Experiment Design

The research adopts mixed experiment design, that is, 2 (problem type: individual and collective problem)*2 (information given methods: simultaneously and respectively given)*2(different characteristics of options: large and small difference)*2 (gender). The problem type and importance of characteristics above are the internal design; information given method is the interval design.

3) Research Presumption

The research presumes that when people make decisions on individual problems, the appearance of preference reversal is more probable than that of collective problem; the larger the importance difference of problem characteristics is, the deeper its influence to selection preference is; and the gender gap is possible for selection preference, probably existing at problems with different characteristics.

3 RESULT AND ANALYSIS

3.1 Inspection whether there is Preference Reversal in Individual Problem

The diagram 1 shows the contrasts of A and B's offers at information simultaneously and respectively given. Inspection on A's offer with SPSS14.0 at these two conditions, $T=4.411$, $P<0.01$ as well, on B's offer at these two

conditions, T=-1.674, P＞0.05 has been performed. Seen from diagram 1, there exists obvious preference reversal for these two brands when information is given by different methods.

3.2 Inspection of Dominant Effects That Gender and Information Given Methods Produce on Individual Problem

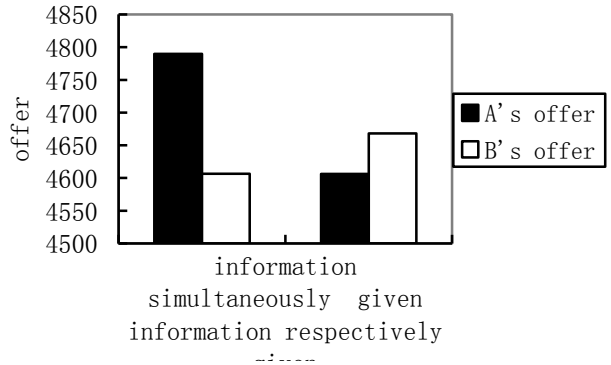


FIG. 1 INFORMATION SIMULTANEOUSLY GIVEN

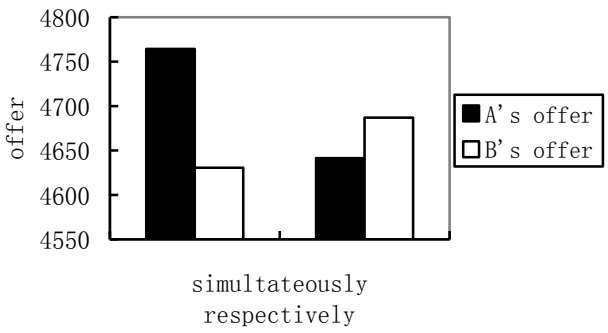


FIG.2 SIMULTANEOUSLY RESPECTIVELY

The diagram1 shows the contrast of everyone offers to A and B when information is simultaneously and respectively given.

The diagram 2 shows the contrast of male's offers to A and B when information is simultaneously and respectively given.

The diagram 3 shows the contrast of female's offers to A and B when information is simultaneously and respectively given.

The analysis of variance on the offer influence to A, produced by gender and information given methods, with SPSS14.0 has been conducted. The results are: F(gender)=0.092, P＞0.05; F(information given method)=17.387, P ＜0.01. However, the interactive effects of gender and information given methods are not obvious. Do the analysis of variance on the offer influence to B, produced by gender and information given methods. The results are: F(gender)=0.454, P＞0.05; F (information given method)=2.868, P＞0.05. Seen from diagram 3, male and female's offer to A and B are consistent with general trend, both showing preference reversal. Connected with above inspections, it can be concluded that gender factor doesn't have remarkable effect on preference reversal to this problem. However, information given method has a large effect on preference reversal.

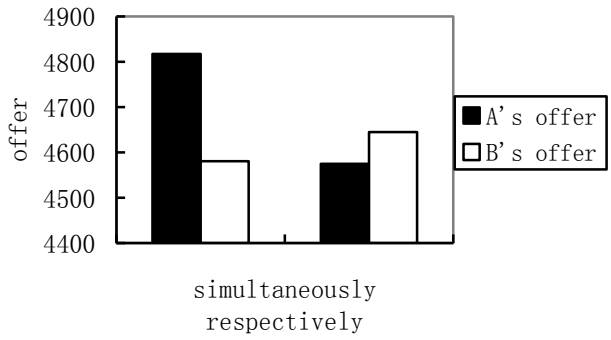


FIG. 3 SIMULTANEOUSLY RESPECTIVELY

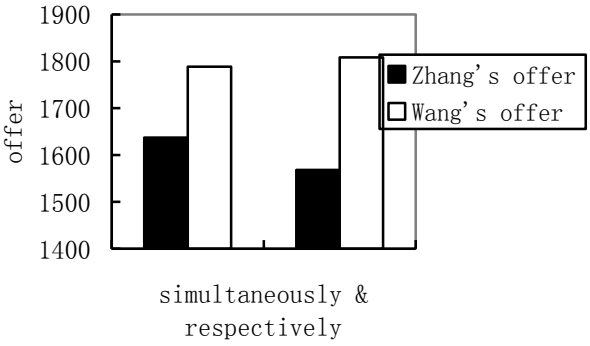


FIG. 4 SIMULTANEOUSLY RESPECTIVELY

3.3 Inspect Whether Preference Reversal Exists or Not in Collective Problem

The diagram 4 shows the offer contrast of all examinees to Xiao Li and Xiao Liu when information is simultaneously and respectively given.

Examinee's offer to Xiao Li under the two information given situations with SPSS14.0, T=2.562, P<0.05; and the

same case to Xiao Liu have been inspected, T=-0.678, P <0.01. Seen from diagram 4, under these both information given situations, examinee's offer to Xiao Liu is higher than that to Xiao Li, that is, there is not obvious preference reversal in collective problems.

3.4 Inspection of Dominant Effects That Gender and Information Given Methods Produce on Collective Problem

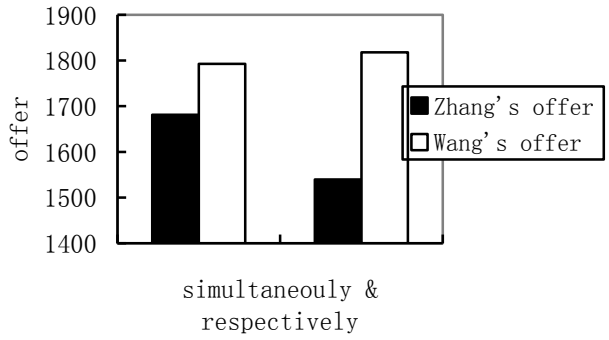


FIG.5 SIMULTANEOUSLY RESPECTIVELY

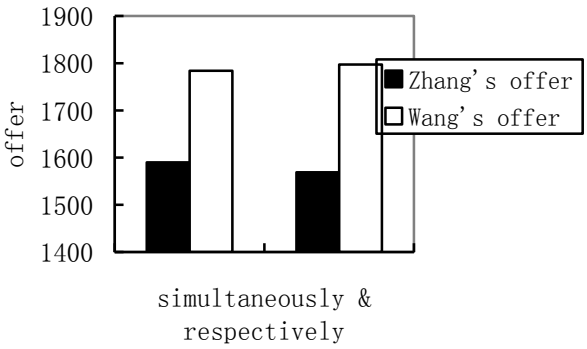


FIG.6 SIMULTANEOUSLY RESPECTIVELY

The diagram 5 shows the contrast of male's offer to Xiao Li and Xiao Liu when information is simultaneously and respectively given.

The diagram 6 shows the contrast of female's offer to Xiao Li and Xiao Liu when information is simultaneously and respectively given.

The analysis of variance on the offer influence to Xiao Li, produced by gender and information given methods, with SPSS14.0 has been made. The results are: F(gender)=0.944, P＞0.05; F(information given method)=6.560, P＜0.05. However, the interactive effects of gender and information given methods are not obvious. Do the analysis of variance on the offer influence to Xiao Liu, produced by gender and information given methods. The results are: F(gender)=0.237, P＞0.05; F (information given method)=0.416, P＞0.05. It is seen from diagram 5 and diagram 6that male and female's offer to Xiao Li and Xiao Liu are consistent with general trend, neither showing preference reversal. Connected with above inspections, it can be concluded that gender factor doesn't have remarkable effect on preference reversal to this problem.

3.5 Inspection the Influence of Preference Reversal from the Importance of Characteristics

Before the issuance of questionnaire, two groups of 15 students have been selected to respectively evaluate the importance of two characteristics in individual and collective problem. For individual problem, 14 students assess the characteristics of design esthetic rate more important than the characteristics of brand establishment date; and only 1 student assesses these two characteristics equally important. For collective problem, 9 evaluate these two characteristics equally important, while 4 evaluate satisfaction more important than skills, and 2 fail to judge the importance. It can be summed up that the importance of two characteristics differs greatly for individual problem; and the importance of the two differs subtle for collective problem.

Since problem type and importance of characteristics are corresponding, the inspections of these two are similar. Via inspections above, it can be seen that examinee shows more obvious preference reversal when the importance of option characteristics differs greatly. But when the importance of characteristics differs insignificantly, preference reversal is absent, which means that the dominant effect of the importance of option characteristics on selection preference is distinct.

4 DISCUSSION

Expected utility theory once widely used to explain the selection problems under indefinite situations, presumes that people have an absolute effectiveness curve, meaning people's subject feelings have high coherence and invariability,

said deeply, and that people's preference prospers continuity and independency. However, in the selection actions of life, many researchers have discovered facts against this theory, such as the preference reversal phenomenon of this research, and etc. Some researcher thinks [1] that people don't prefer to be rational as presumed in expected utility theory in the real life. People control, summarizes, and then make judgments' on complex situation by breaking it into simple statuses. Ensuing the appearance of different status, people will join the corresponding situation or decision-making space, and make their own decisions and judgment. While the subject to evaluate and object to be evaluated will have some changes in different decision-making space. It is this relativity of decision-making space that leads to the appearance of preference reversal.

4.1 The Explanation of Prospect Theory to Preference Reversal

Many researchers explain preference reversal with the prospect theory proposed by Kahneman and Tversky. [4] Prospect theory thinks that people need to compile information before making decisions. During this period, people collect and reorganize relevant information, preprocessing data. While different data integration methods and preprocess may lead to the appearance of different prospects, and eventually result in irrational decisions, like the appearance of preference reversal, and etc. According to prospect theory, people's prospect, premise of decision-making, under indefinite situations, is not made on the premise of complete information and adequate calculating ability. It is usually "hurry" made without precise calculations on the basis of part information. The decision-making process is mainly adjusted and controlled by the recognition process of decision maker. So factors affecting recognition process will have influence on people's making decisions. People's recognition process is usually affected by various complicated factors, such as people's quality, mood, emotions, motives, and other mental psychological factors, as well as cultural background, community influence, social environment, and other external factors. For these influences from complicated factors, people easily make errors of judgment and action when they make decisions. For decision makers, their final selection may not be the optimal one, but offend be the most satisfying result mentally felt by decision makers. It can be noted that decision-making process in fact is decision-makers affected by various complicated factors. The result of this research can be better explained by prospect theory.

4.2 Explanation for the Influence on the Preference Reversal

In this study, obvious preference reversal in the personal problems (purchase issue) has been shown, however, accompanied by the stability of preference reversal in the collective problems (recruitment issue), which is consistent with our hypothesis. Rwo explanations have been supposed for this conclusion; one is that the nature of the problem has a significant influence on the preferences of the decision-maker. When policy-makers faced with the problems related to personal issues, they will be less subject to the external pressures and don't need to be responsible for the consequences of their decision. Therefore, the prudence of their decision is likely to be lower than others. When accessing information, even though having gained the one-sided information, they would just hurriedly draw a conclusion without in-depth consideration, leading to the opposite decision when faced with the all-sided and one-sided information. Nevertheless, when making a decision on the collective problems, the decision-maker often suffers greater psychological stress. Because the decision results are not only related to the collective interests, and other factors, such as "social recognition", "ethics", "justice" will have a great impact on the decision-makers. Especially in the context of our culture, decision-makers are more likely to be affected by these factors. When making a decision on the collective problems, decision-makers need to take the risks, therefore, they would be more prudential, even if they have gained the incomplete information, they would think and analyze the information carefully rather than making a hasty conclusion, which avoids the cognitive limitations of the decision-makers to some extent. This is the possible reason for the absence of the preference reversal on the study of collective problems.

Another explanation is the attribute importance has significant influence on decision-making preference. When the importance of the problem attribute differs greatly, the subjects show obvious preference reversal; otherwise, preference reversal is absent, which can be understood as when the importance of the problem attribute have great differences, the subjects pay attention to the important attribute, that is to say, the relevant information of the important attribute plays a decisive role in the subject's decision-making. No matter the information is presented at

the same time or respectively, the subjects' cognition will be limited to the attributes that they considered with importance, which easily causes cognitive deviation, leading to the instability of preferences.

4.3 Explanation of Gender Factors Has no Influence on Preference Reversal

It is proved that the test results and research hypothesis of gender factors are inconsistent. In accordance with the research hypothesis, different genders will show their gender differences on the decision of nature-different problems because of the influence of their different decision-making style, social roles, family roles and etc. However, the study discovers that there is no gender difference for the decision-makers whether in individual or collective problem. This may be concerned with the nature of the studied problems. Some studies have found that different genders show their different preferences on the decision of the problems which would cause risky consequences. In this study, there are no obvious risky consequences for the issue of individual and collective decision-making, so the gender influence may not be significant. In addition, female and male show the same trend on collective issues, these shows that, the social roles for female are similar with what the men own as the increasing participations in social activities, meaning that it is very similar for women and men in the influence suffering social cultural, community pressure and other factors, therefore, it caused the in-diversity for female and male on this issue.

There are many shortcomings in this study. For example, although the study divided the question materials into personal and collective issues, however, the two issues were represented by one problem, which may occur due to the lack of representativeness, in addition, this research only uses purchase problem to represent individual problem, but other problems related to individual, such as life problem, job problem, and etc, whether these problems also show preference reversal or not, which is another question that needs to be further thought in the following research.

5 CONCLUSION

(1) When "the information is presented at the same time and respectively", the preference reversal does not exist in all the attribute problems. This study shows that the preference reversal exists in personal problems other than collective problems.

(2) The study indicates that when the importance of the problem attribute differs greatly, the subjects show obvious preference reversal, however, when the importance of the problem attribute fails to differ greatly, preference reversal is absent.

(3) Under the problem attributes, the gender difference doesn't exist in decision-making.

ACKNOWLEDGMENT

This research was supported by the Humanities and Social Science Research Youth Foundation of the Ministry of Education in China (Grant No.12YJC880005) and "the Fundamental Research Funds for the Central Universities (Grant No.SWU1309230)" and "the Fundamental Research Funds for the Central Universities (Grant No.SWU1309231)". Chongqing Higher Education Reform Project (No.120388)

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