Research on the Influence of Probability Sales on Consumer Decision Satisfaction

Guangzong Liu

46461905@qq.com

Guizhou University of Commerce, No.26 Avenue Baiyun District, Guiyang, 550014, China

Abstract. In view of the relationship between probabilistic sales and consumer decision satisfaction, three different purchase scenarios were used to compare the impact of probabilistic sales and traditional sales on consumer decision satisfaction. The results show that the positive impact of probability sales on consumer decision satisfaction is significantly higher than that of traditional sales. Conclusion: Compared with traditional sales, probability sales will indeed improve consumers' decision satisfaction.

Keywords: probability sales; Decision satisfaction: experimental method

1 Introduction

Probabilistic sales is a new sales model in recent years. Up to now, although there are relatively mature probability sales models and related enterprises abroad, domestic enterprises and consumers still have low awareness of probability sales. Therefore, it is of great significance to investigate the impact of probability sales on domestic consumer satisfaction for enterprises and consumers to improve their awareness of probability sales and develop new business models and consumption patterns. The purpose of this study is to play the role of "throwing a brick to attract a jade" and lay a theoretical foundation for the follow-up study of the technical and commercial feasibility of probability sales in China.

2 Theoretical overview

2.1 Probabilistic sales

Since Smith and Wendell (1956) put forward the concept of market segmentation, how to use targeted marketing strategies to effectively segment consumers has been the focus of marketing circles. Probabilistic sales strategy not only increases the choice of customers, but also is a tool for marketers to segment the market. Probabilistic Selling was originally proposed by Scott Fay and Jinhong Xie in 2008. Probability sales is a sales strategy, and its core part is probability goods. Probability product is not an entity product or service, but a virtual product. It is a unique way to provide products or services [1], that is, to provide a possibility for consumers to choose any one of many different products or services under specific conditions. Vendors use existing products or services to create probabilistic products and use them as an additional purchase option for potential buyers [2].

ICBBEM 2023, May 19-21, Hangzhou, People's Republic of China

DOI 10.4108/eai.19-5-2023.2334323

Probabilistic sales has the following advantages: First, it reduces the information disadvantage of sellers on the demand side, and reduces the negative impact of demand uncertainty on profits. Secondly, providing probabilistic products can also solve the mismatch between supply and demand, thus improving benefits [3]. Third, differential pricing is based on the heterogeneity of consumers (preferences). Fourth, weaken price competition and increase profits through the limited rationality of consumers [4].

Since probability sales has the above advantages, is probability sales recognized by consumers? In other words, compared with the traditional sales model, does probability sales improve consumer satisfaction? Professor Xie Jinghong and his collaborators compared the difference between advanced selling and probabilistic selling from the perspective of heterogeneity intensity. The research believed that heterogeneity intensity would damage the income of advance selling, while a reasonable heterogeneity intensity is necessary for probabilistic selling [5]. Some domestic scholars use mathematical models to study customer risk preference in probabilistic sales, and prove that under the premise of specifying the same probability of various products, the seller obtains the optimal profit [6]. Some domestic scholars also take Qunar's "Prison Break Hotel" as an example, the study found that the "prison break hotel" model has not been sustained due to the inconsistency between the service and the platform commitment, and the poor consumer experience. The reason lies in the backward management concept, the scarcity of advantageous travel resources, and the low penetration of domestic probability sales [7].

From the above analysis, it can be seen that scholars' research on probability sales in recent years mainly focuses on the feasibility of technology and business models. They have not studied the degree of consumer recognition of probability sales from the perspective of marketing satisfaction. Therefore, it is of great theoretical and practical significance to study the relationship between probability sales and customer satisfaction.

2.2 Probability sales and decision satisfaction

Giese and Cote define customer satisfaction as three aspects: (1) customer satisfaction is a reaction (emotion or cognition); (2) These reactions focus on specific aspects (expectations, products, consumption inspection, etc.); (3) This reaction occurs in a certain period (after consumption, after selection or based on accumulated experience, etc.) [8]. In the study, scholars found that consumers are also affected by cognition and emotion in the process of product selection, so customer satisfaction is further divided into decision satisfaction and consumption satisfaction [9]. Zhang and Fitzsimons (1999) studied the influence of the limitation of choice ability and the type of attribute on decision satisfaction. The research found that the comparable performance of options brought by common attributes can improve decision satisfaction, while the limited ability of selection will reduce decision satisfaction. When the non-common nature of selection attributes is large, it is difficult for consumers to compare, and decision satisfaction will decrease [10].

This paper believes that the definition of consumer satisfaction with probability sales should be in the stage after consumer selection from the perspective of the period of customer response, and the satisfaction at this stage belongs to the category of decision satisfaction. According to the theory of Zhang and Fitzsimons, the products or services provided by probability sales have more common attributes, but less non-common attributes. Therefore, the choice comparability

of the common attributes contained in the products or services sold with probability will improve the decision satisfaction.

To sum up, this paper puts forward the theoretical hypothesis that probability sales can improve consumers' decision satisfaction.

Next, this paper uses the experimental method to carry out the experimental operation in three different situations, and compares the degree of satisfaction of the subjects in the control group and the experimental group, so as to verify the theoretical hypothesis of this paper.

3 Experiment

3.1 Experiment 1

The purpose of experiment 1 is to compare the difference of consumer satisfaction after purchasing pure cotton shirts under the two conditions of no probability sales and probability sales.

3.1.1 Method

(1) Sample

The project team collected 121 valid questionnaires through the survey of students in Guizhou Business College, including 63 in the control group and 58 in the experimental group. In order to ensure the consistency of the number of samples in the two groups, the project team randomly deleted five groups of data from the control group. The results were as follows: 58 people in the control group, including 34 women (58.62%) and 24 men (41.38%); There were 58 people in the experimental group, including 31 women (53.45%) and 27 men (46.55%).

(2) Experimental design and process

First, the control group assumed that the subjects had decided to buy a well-known brand of pure cotton shirt. The reference price of other brands of cotton shirts with similar styles on the market is 99 yuan. The purchase situation is: 10 colors and 5 versions of shirts can be selected by the subjects at a unified price of 99 yuan. Then, the Likert 7-point scale was used to measure the satisfaction of the subjects after purchasing shirts.

Secondly, the experimental group also assumes that the subjects have decided to buy a well-known brand of pure cotton shirt. The reference price of other brands of cotton shirts with similar styles on the market is 99 yuan. However, the purchase scenario adopts the probability sales model, that is, five versions of shirts can be selected by the participants, but 10 colors are sold at random by the brand's online stores at a price of 49 yuan. Then, the Likert 7-point scale was used to measure the satisfaction of the subjects after purchasing shirts.

Finally, compare the difference of satisfaction between the two groups after buying shirts.

3.1.2 Results and discussion

The results of linear regression analysis using SPSS are shown in the following table.

Table 1. Levene test of error variance equivalence

F	df1	df2	Sig.
.083	1	114	**.774**

As shown in table 1, in the Levene test of equality of error variance, F=0.083, not significant (P=0.774>0.05), indicating that the error variance of dependent variable satisfaction in the control group and the experimental group are equal, that is, the variance is homogeneous, and the test results of inter-subjective effects are significant. In the inter-subject effect test table, the significance level of the type item p=0.036<0.05, indicating that when the experimental group adopted the probability sales model, the satisfaction of consumers after purchasing pure cotton shirts was significantly higher than that of the control group when the probability sales model was not adopted, and the theoretical hypothesis was supported.

3.2 Experiment 2

The purpose of experiment 2 is to compare the difference of consumer satisfaction after purchasing smart phones under the two conditions of not using probability sales and using probability sales.

3.2.1 method

(1) Sample

The project team collected a total of 118 valid questionnaires through the survey of students in Guizhou Business College, including 58 in the control group and 60 in the experimental group. In order to ensure the consistency of the two groups of samples, the project team randomly deleted two groups of data from the experimental group. The results were as follows: 58 people in the control group, 45 women (77.59%) and 13 men (22.41%); There were 58 people in the experimental group, including 34 women (58.62%) and 24 men (41.38%).

(2) Experimental design and process

First of all, the control group assumes that the subjects have decided to buy a well-known brand to play 5G series of high-profile dual-card dual-standby mobile phones. The reference price of other brands with the same configuration of mobile phones is 699 yuan. The purchase situation is: the five colors of the mobile phone shell of this brand are available for subjects to choose, and the price is 699 yuan. Then, the Likert 7-point scale was used to measure the subjects' satisfaction after purchasing mobile phones.

Secondly, the experimental group also assumes that the subjects have decided to buy a well-known brand to play 5G series of high-profile dual-card dual-standby mobile phones. The reference price of other brands with the same configuration of mobile phones is 699 yuan. However, the purchase scenario adopts the probability sales model, that is, the five colors of the mobile phone shell cannot be selected by the subjects, but are randomly sent by the online store of the mobile phone brand, with the price of 599 yuan. Then, the Likert 7-point scale was used to measure the subjects' satisfaction after purchasing mobile phones.

Finally, compare the difference of satisfaction between the two groups after purchasing mobile phones.

3.2.2 Results and discussion

The results of linear regression analysis using SPSS are shown in the following table.

Table 2. Levene test of error variance equivalence

F	df1	df2	Sig.
.383	1	114	**.537**

As shown in table 2, in the Levene test of equality of error variance, F=0.383, not significant (P=0.537>0.05), indicating that the error variance of dependent variable satisfaction in the control group and the experimental group are equal, that is, the variance is homogeneous, and the test results of inter-subjective effects are significant. In the inter-subject effect test table, the significance level of the type item p=0.025<0.05, indicating that when the experimental group adopts the probability sales model, the satisfaction of consumers after purchasing mobile phones is significantly higher than that of the control group when the probability sales model is not adopted, and the theoretical hypothesis is supported.

3.3 Experiment 3

The purpose of experiment 3 is to compare the difference of consumer satisfaction after ordering travel tickets under the two conditions of not using probability sales and using probability sales.

3.3.1 method

(1) Sample

The project team collected 116 valid questionnaires through the survey of students in Guizhou Business College, including 54 in the control group and 62 in the experimental group. In order to ensure the consistency of the two groups, the project team randomly deleted 8 groups of data from the experimental group. The results were as follows: 54 people in the control group, including 21 women (38.39%) and 33 men (61.11%); There were 54 people in the experimental group, including 23 women (42.59%) and 31 men (57.41%).

(2) Experimental design and process

First of all, the control group assumes that the subject is a travel enthusiast, and plans to take an international airline's plane from Beijing to Italy for a two-week self-help trip. Assuming that you have never been to Italy before, any city in Italy has the same attraction for you, and the ticket price of economy class is basically the same (note: Italy has a small land area). Book tickets two months in advance. The reference selling price of other airline tickets is 10000 yuan. The purchase scenario is: the subjects choose Milan as the first city to travel, and buy a direct ticket from Beijing to Milan from an international airline at a price of 10000 yuan (note: the small difference in ticket discount between different airlines is ignored, and the price includes all taxes). Then, use Likert 7-point scale to measure the satisfaction of the subjects after ordering travel tickets.

Secondly, the experimental group also assumes that the subject is a travel enthusiast who plans to take an international airline's plane to Italy for a two-week self-help trip from Beijing. Assuming that you have never been to Italy before, any city in Italy has the same attraction for

you, and the ticket price of economy class is basically the same (note: Italy has a small land area). Book tickets two months in advance. The reference selling price of other airline tickets is 10000 yuan. However, the purchase scenario adopts the probability sales model, that is, the starting place of the subjects is Beijing. However, the destination of the flight in Italy is determined by an international airline. The airline arranges the destination of the test subject according to the situation of the spare tickets, and the price is 6000 yuan (note: the small difference in the discount of the tickets of different airlines is ignored, and the price includes all taxes). Then, the Likert 7-point scale was used to measure the satisfaction of the subjects after ordering travel tickets.

Finally, compare the difference of satisfaction between the two groups after booking travel tickets.

3.3.2 Results and discussion

The results of linear regression analysis using SPSS are shown in the following table.

Table 3. Levene test of error variance equivalence

F	df1	df2	Sig.
3.151	1	106	**.079**

As shown in table 3, in the Levene test of equality of error variance, F=3.151, not significant (P=0.079>0.05), indicating that the error variance of dependent variable satisfaction in the control group and the experimental group are equal, that is, the variance is homogeneous, and the test results of inter-subjective effects are significant. In the test table of inter-subjective effect, the significance level of the type item p=0.028<0.05, indicating that when the experimental group adopts the probability sales model, the satisfaction of consumers after ordering travel tickets is significantly higher than that of the control group when the probability sales model is not adopted, and the theoretical hypothesis is supported.

4. Conclusion and discussion

The purpose of this paper is to study the impact of probability sales model on consumer satisfaction. Three different experimental scenarios were used: purchase of cotton shirts, purchase of smart phones and purchase of travel tickets. Data were collected in the form of questionnaires to compare the difference between the post-purchase satisfaction of consumers without probability sales and with probability sales. The results show that the results of the three experiments all support the theoretical hypothesis of this paper, that is, in the context of adopting the probability sales model, the post-purchase satisfaction of consumers is significantly higher than that of consumers who do not adopt the probability sales model, which indicates that probability sales will indeed stimulate consumers' buying interest and improve consumer satisfaction.

reference

[1] Fay S, Xie J. Probabilistic Goods: A Creative Way of Selling Products and Services[J]. Marketing Science, 2008,27(4):674-690.

[2] Shu Siliang, Liu Jian Comparative study on supply chain probability sales strategies under different power structures [J] China Management Science, 2022,30 (9): 152-161

[3] Fay S, Xie J. Probabilistic Goods: A Creative Way of Selling Products and Services[J]. Marketing Science, 2008,27(4):674-690.

[4] Huang T, Yu Y. Sell Probabilistic Goods? A Behavioral Explanation for Opaque Selling[J]. Marketing Science, 2014,33(5):743-759.

[5] Fay S, Xie J. The Economics of Buyer Uncertainty: Advance Selling vs. Probabilistic Selling [J]. Marketing Science, 2010,29(6):1040-1057.

[6] Wu Yifan, Qu Yaping, Chen Jing Research on probability sales strategy in the context of cross-shareholding of horizontally differentiated competitive enterprises [J] Management Review, 2022,34 (10): 209-221

[7] Yang Guang, Liu Xinwang, Qin Jindong Probabilistic sales strategy research based on consumer loss utility [J] China Management Science, 2020,28 (7): 146-155

[8] Giese, Cote. Defining Consumer Satisfaction[J]. Academy of Marketing Science Review, 2000,2000(1):1-27.

[9] Fitzsimons. Consumer Response to Stockouts[J]. Journal of Consumer Research, 2000,27(2):249-266.

[10] Zhang, Fitzsimons. Choice-process satisfaction: The influence of attribute alignability and option limitation[J]. Organizational behavior and human decision processes, 1999,77(3):192-214.